

THE
FARMER'S OUTLOOK

RALPH T. HINCKES

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THE FARMER'S OUTLOOK

A REVIEW OF HOME AND OVERSEAS
AGRICULTURE, 1880—1913

BY

RALPH T. HINCKES.



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THE FARMER'S OUTLOOK

CHAPTER I

THE RISE IN FOOD PRICES

ACCEPTING price as a measure of demand, the higher cost of foodstuffs so widespread, affecting so many articles, suggests a common underlying cause. Our concern is not with fluctuations; they are common in periods both of high and low prices. The well-established rise in values, which we are considering, cannot be mistaken for a temporary movement. An essential preliminary is to fix the scope of the enquiry, here confined to wheat, meat, and dairy produce, and to block in as a perspective some general considerations.

Our point of view is world-wide. Modern means of communication have gone far to annihilate distance and equalise prices. High grade food-products have found their way into every market, and set a standard of quality. The success attained during a period of low prices, has eliminated competition against the interests of consumers. Thus the development of the dairy industry, especially where butter

becomes an article of export, involves an organisation, on lines similar to those of other highly developed manufactures. Bulk and uniform quality are essential. The retail salesman welcomes the better-organised product, and refuses the small quantities of uneven quality offered by the home producer. Not impossibly the erstwhile producer may himself become a purchaser of the imported article.

Idiosyncrasies of diet are tending to disappear. A demand is created for certain foodstuffs which have come to be regarded as the standard necessities of a civilised community. Popular prejudice associates some article of diet with a lower social status. Rye bread is discarded in Germany, or rice in Japan. In both cases larger demands on the world's wheat supplies result.

The play of world forces in settling the production and demand for foodstuffs suggests the root cause of the rise in prices. Trade has brought about the intercourse between nations. The manufacturing system has caused its wide extension. A truism—but one which must be insisted on at the outset of the investigation upon which we are engaged. The growth of manufactures and the corresponding increase in the number of those engaged in winning minerals to provide the workshops with raw materials, and coal, the motive power of manufacture and transport, is

constantly augmenting the number of food consumers. The wider distribution of wealth resulting in a higher standard of living at the same time increases the per capita demand.

Great Britain's position with regard to foodstuffs has been exceptional. As the pioneer of the manufacturing system she was the first to feel the need of additions to her own supplies. Her agriculture was deliberately sacrificed to the overwhelming competition of the New World. It is not here intended to contrast the results of our policy with that of other countries, which during the last thirty years, the period during which the competition of the New World has been effective, might have consumed large quantities of food supplies from Overseas. Let it suffice that as a result of our policy, Great Britain has up till recently had a monopoly of the surplus supplies of meat, and has been the largest purchaser of wheat in the world's market, her population relying at the present time to a greater degree than any other on imported supplies. It is principally with the object of showing the vast and growing changes under which our purchases of foodstuffs from the Temperate Belt¹ are now made that this book has been written.

¹ With the exception of wheat from India and some foodstuffs from parts of Australia the imports which compete with British Agriculture are grown in countries within the Temperate Belt.

In the first place, it must at once be realised that the diminished exports of wheat and the almost complete cessation of meat exports from the United States have vitally affected the world's markets. The changes in greater detail will be considered in subsequent chapters. The table on the opposite page sets forth our wheat imports giving the averages in quinquennial periods from 1880-1904, and from that date the sources of our annual wheat imports up to 1912, showing the extent to which the supplies from the United States have diminished.

**Wheat (Grain, and Flour in equivalents of Grain)
Imported into the United Kingdom from various
Countries stated as Percentages of Total Im-
ports for each Five-Yearly Period from 1880 to
1904, and for each year from 1905 to 1911.**

Period.	U.S.A.	Russia.	Canada.	India.	Australasia	Argen- tine.	Total supplies thus accounted for.
1880-4	57	9·5	4·2	10	5	—	85·7
1885-9	48·5	16·3	4·1	12·3	12·9	—	94·1
1890-4	53	14·3	4·8	10	3·1	6·5	91·7
1895-9	56·5	12·2	7·1	5·2	1·5	6·8	89·3
1900-4	47	10	9·5	10	5·1	12·5	94·1
1905	13	22·5	7	20	10	21	93·5
1906	32·6	14·3	11·8	11·2	7·7	17·2	94·8
1907	29	9·9	13·2	15·7	7·3	19	94·1
1908	36·4	4·6	16·5	2·7	5·3	29	94·5
1909	22·2	15	17·2	13	9·8	17·8	95
1910	15·1	24·4	17	15	11·9	12·8	96·2
1911	17·9	16·1	16·9	17·9	13·9	13·3	95·7

CHAPTER II

THE RISE AND FALL OF FOODSTUFF EXPORTS FROM THE UNITED STATES, 1873-1913

THE last chapter showed how greatly our supplies of wheat from America had fallen off of recent years. That this diminution is not the result of a smaller acreage under wheat is apparent from the returns of "wheat acres harvested" in the United States Department of Agriculture Year Books. It should also be noted that a larger average return per acre of three bushels, *i.e.* from 11.7 bushel in the period '81-5 to an average of 14.7 bushel in 1906-10 is recorded.

The importance of American supplies in determining the world's prices, justifies a review of the circumstances which have led up to the present position of the States as an exporter of food stuffs. In 1874 the United States surpassed France in wheat production, and thus became the world's largest producer. The European harvests from 1876 to 1880 were successively unfortunate, and the rapidly expanding production of the United States filled the gap. Not only were the European harvests insufficient, but the

outbreak of rinderpest in 1877 depleted the cattle stock in Europe, and necessarily put a stop to all exports to Great Britain from that quarter. In addition, therefore, to the shipment of cereals the United States found a ready market for large quantities of hog products in Europe and imports of live cattle to the United Kingdom began. The expansion of production in America was rendered possible by the rapid extension of Railways in the West, the labour being drawn not only from immigrants who in the early 'eighties came to the States in rapidly increasing numbers, but also from the manufacturing centres which had recently experienced a period of depression. The land, the labour, and the market by a series of circumstances became available at the same moment and were utilised with the characteristic energy of the American people.

With the advent of the 'eighties important changes in the markets which the States had learnt to rely on took place. Not only was there a return to normal seasons in Europe, but the Governments of those countries which had begun to feel the competition of American agricultural products raised up a barrier of veterinary regulations amounting in some cases to total prohibition against animal imports and increased their tariffs on agricultural and animal products. In 1880 the Italian Government set the example of

prohibiting hog imports from the U.S.A. on the ground that they contained "Trichinae." With the exception of Great Britain almost all the European Governments followed suit, and, in addition, prohibited the importation of cattle and fresh beef. It was perhaps an easier matter to curtail the production of beef and hog products than to stop the expansion of wheat acreage which was the natural result of the opening up of the West by the railroads. Not however till 1884 did the conditions governing the production of wheat result in a severe fall in prices. The Commissioner of Agriculture in the report of that year describes the selling of American wheat abroad in competition with "the half civilised Fellahs of Egypt, and the slavish Ryots of India as unworthy of American freemen and utterly unnecessary." He pleads for diversified agriculture and the production at home of such staples as sugar and barley, which at that time were imported from abroad. An instructive passage in the same Report describes the pioneer settler "as far less a farmer than a speculator: he finds it convenient to grow wheat year after year to get the ready cash with which to construct houses and barns, build fences, buy ploughs and reapers, and more cheap land."

It is from this period that we see America's place in the strenuous competition by all countries,

which had a surplus of agricultural products, to sell the produce of their fields, their slaughter houses, and their dairies, in the United Kingdom, which, with certain minor exceptions, placed no restrictions on their trade.

From 1884 to 1890 the Reports of the U.S.A. Department of Agriculture show the tendency of American farmers to increase the production of Indian corn as an alternative to wheat. The reason for this is clearly stated in the report of 1888. "Corn and oats are mainly used in the feeding of animals for milk and motive power, enjoying a vastly more elastic demand and having a wider range of uses. The other cereals are almost exclusively used as human food, the demand of which is uniform." Not only did American agriculturalists have to suffer from low prices of wheat, but in 1884 an outbreak of pleuro-pneumonia put a stop to the import of American cattle into the United Kingdom, except for immediate slaughter, and not till 1889 was this disease successfully stamped out. The prices of cattle naturally suffered from these restrictions and likewise that of hogs from the enforced limitation of the market for hog products by the action of the other European States.

The next ten years from 1890 are an extremely interesting period in the development of American agriculture. The problems to be solved had been

realized during the eighties, and the necessary machinery had been set in motion. While the eighties may be described as a period of disorganisation, the experience gained enabled the American farmer, aided by the energetic help of the Department of Agriculture, to solve the difficulties which the further fall in prices rendered even more acute. The main object in view was the diversification of Agriculture, not only in the U.S.A. as a whole, but in each district. This in effect meant the production and export of the more concentrated and therefore more valuable products ; cattle, either on the hoof or as chilled meat, hog products, cheese and butter. Another item in the agricultural policy was the production of such articles as sugar, which were at that time imported from abroad. The first step was to ensure the health of the farmers' live-stock and freedom from contagious disease. An elaborate system of examination of all meat products was organised which enabled any shipment alleged to be unhealthy to be traced to its source ; so far as cattle, sheep and beef were concerned, these measures seem to have met with success, and in 1892 the prohibitions against American bacon and ham exports were withdrawn by many European Governments. The control of dairy products was not, however, so completely successful, for though large quantities of cheese were ex-

ported, the prices obtained in Europe as a whole compared unfavourably with cheese sent from Canada and Holland, and the same complaint is made with regard to the smaller quantities of butter exports. With bacon, some of the Reports state that the demands of the English market were not sufficiently studied, and that American shippers seemed to content themselves with selling their surplus products abroad for what they would fetch.

The period 1890-1900 opened with a remarkable increase in wheat prices. To quote from the Report of 1890 :—“ To-day the cloud which for some years seemed to rest gloomily on American agriculture has been lightened, while the wise economical legislation already secured holds out still brighter promise of the future.” This reference was not only to an increased tariff recently imposed on agricultural imports, but also to the Silver Bill, from which much was expected. The Russian famine of 1891 followed, accompanied by short crops of rye, as well as wheat, throughout Europe. With bountiful crops at home and scarcity abroad the American farmer reaped a double advantage. It seemed as if the Secretary of Agriculture's prophesy was indeed coming true. His hopes were soon dashed to the ground. In 1892 prices both of wheat and corn started a decline by comparison with which the

low prices of 1884-5 appeared generous! In 1894 the lowest price for wheat was recorded, the average official price in England being 22s. 10d. per quarter. That prices ruling during this period were considerably below the cost of production is shown by the estimates of cost appearing in the Reports. The Governor of Kansas State, writing in the "North American Review" of January, 1896, shows that more than ten thousand farmers in this State were annually dispossessed of their homes by foreclosures of mortgages and well-to-do farmers were gradually being forced into bankruptcy. It is to be doubted whether the producers of live-stock fared much better, but the exports of live cattle remained at a steady level, and that of live sheep increased. There was also a tendency to increase the exports of hog products, as well as of fresh beef. Shipments of cheese and butter, on the other hand, seemed to have diminished. In such a brief sketch of the position of American agriculture, it is scarcely possible to trace the yearly variation in production, exports, or prices. It is, however, interesting to examine with some minuteness the conditions ruling with the object of showing the factors which were at work in settling the general trend. We find, for instance, that in 1893 the drought in England forced a large number of home-bred cattle on the market, and thereby reduced the

price of American imports. In the same year the prohibition against American cattle by Germany increased the demand for bacon in that country, which was met by Danish bacon, the result being a better market for American bacon in the United Kingdom.

The importance attached to these indirect influences on the English market serve to emphasise the importance of the British consumer. In 1893, it is stated, the British market bought more than half of all the farm-products exported from the United States. Butter and cheese exports reached their highest figures in the period 1880-9. Canned beef from 1890 to 1899. Cattle, beef, pork and pork products, and cereals from 1900 to 1904.

It has been seen how the American agriculturists endeavoured to meet the fall in prices of bulk products by marketing concentrated products, and also how this move on their part was checked by tariff barriers or the more indirect but equally effective obstruction of veterinary regulations. The absence of an adequate market abroad was undoubtedly offset by the increased home demand gradually overtaking the curtailed production brought about by lower prices. A reference has been made to the disregard of American shippers to the market conditions necessary to obtain the best prices for their bacon and

ham exports in the United Kingdom. In this connection the Report of 1899 mentions that the Danish farmers not only reaped the advantage of the greater care with which they studied the English market, but also that they went to the length of importing the cheaper American bacon for their own consumption, thereby enabling them to export larger quantities of their higher grade home-grown produce. In the same Report it is regretted that the American exports of Indian corn, oil-cake, linseed cake, and bran assisted the Danish producers of bacon and butter in competing with the American shipper of the same products.

The cumulative effect of several years of profitable prices resulted in the greatly improved financial position of farmers. To quote the United States Year Book of 1908:—"The year 1897 marked the farmers' financial turning-point, the prices of his products had previously often been below the cost of production, and he occupied a weak position as a seller. Within a few years after prices had risen so as to make him strong as a seller, and to enable him to hold his crops for fair prices."

It is in the year 1908 that we see a rapid decline in the exports of American beef. Whereas in 1907, 1,451,000 quarters of chilled beef were exported to the United Kingdom, in 1908 the

number had dropped to 859,000 quarters, and in 1912 the trade has practically disappeared. With regard to live cattle, the figures are 344,000 in 1907, and only 39,000 in 1912. Though this enormous drop in exports was no doubt due to increased home consumption, it was undoubtedly accelerated by special causes. The Report of 1909 sums up the position thus:—"More profitable crops have made more valuable land, and cheap beef is not the product of high-priced land." Ranges were being broken up by the plough, and the natural process was accelerated by the enforcement of the "No Fence" Law. At the same time the movement for forestry conservation tended to restrict the running of cattle in forest areas.

With regard to packing house products, the financial panic of 1907 precipitated a crisis in prices, with the result that sows were slaughtered. There was also a special reason to account for the breaking up of the Western ranges. The Department of Agriculture had, during many years, assisted the movement known as dry-land farming by acclimatising varieties of macaroni or durum wheats, found suitable for the semi-arid regions of the West, which had formerly been entirely devoted to cattle. These efforts had been so successful that in 1904 the Secretary of Agriculture had been able to prophesy that 40 or 50

million bushels would be grown in the following year, thereby not only precluding the necessity of imports, but also holding out the prospect of exports to Southern Italy for the special purpose of making macaroni. The Year Book of 1907 reports the fulfilment of this prophesy by the export of 20 million bushels, two-thirds of which is stated to have been sent to Mediterranean ports.

The vast changes that have been sketched in this evolution of American agriculture have been along the lines laid down by those, who in the period of disorganised expansion during the eighties realised the problems to be solved. From the position of selling abroad whatever it could market, the United States have come to marketing abroad the surplus of abundant seasons. That this change has had far-reaching effects on the British farmer will appear when we come to consider the different circumstances under which our present supplies are produced.

CHAPTER III

THE GROWTH OF MANUFACTURES AND THE PRESENT FOOD EXPORTING COUNTRIES

IN the last chapter the United States was shown to have absorbed a larger amount of her own food-stuffs. Agriculture, it is true, has increased in prosperity.¹ Manufactures have expanded more rapidly. A larger proportion of the population became engaged in non-agricultural employments. This conclusion must be subjected to two forms of test. The direct test, the relative increase in rural and urban population, is not of much assistance, for a large number of the rural population, even if they are engaged in agricultural production, may not be producers of foodstuffs. Cotton and flax, both extensively cultivated in the United States of America and other countries which supply the bulk of the world's cereals, show the extent to which this test would prove unreliable. The indirect tests are more conclusive. Of the United States exports, the average percentage of agricultural

¹ See appendix, giving extracts from two recent articles in *The Times*, on American Agriculture.

to total exports for the period 1880 to 1889, was 77.2 as against 62.6 for the five years 1900 to 1904. This result is specially remarkable as the apex of the export curve, of live cattle, beef, pork, and pork products as well as cereals, exactly coincides with the second period. Forest products have been excluded, but cotton and tobacco form part of the totals on which the percentages are based in both cases.

Take other evidence to show the increasing number of the population engaged in non-food producing employments, and apply it to the United States of America and elsewhere. The coal production in metric tons of Germany, Belgium, France, Austria, the United States and the United Kingdom for the period 1881-5, compared with the period 1906-10, shows an annual average production of 355 million tons for the former period, against an average of 901 million tons for the second period. Taking the same countries and comparing the same periods, we find that the figures for pig iron are respectively 20 million metric tons and over 54 million metric tons.

Similar figures for countries which in the popular estimation are thought to be behind-hand in the development of their minerals and their manufactures are even more significant. The annual production of pig iron in Russia, which

averaged 490,000 metric tons for the period 1881-5, had risen for the period of 1906-10 to an average annual production of nearly 3 million metric tons. Likewise, India produced 6½ million tons of coal in 1901 and 12 million tons in 1910, and her output of manganese ore rose from 157,000 tons in 1901 to 800,000 tons in 1910. The industrial development of Japan is another instance of the same kind.

Increased expenditure on articles of food which do not come within the category of necessities is another factor which tends to divert the rural population from the production of staple food-stuffs. Production and consumption on an enormous scale of apples and canned fruits have resulted in California's diminished wheat output.

The dictum of the earlier economists that other countries would dig and delve to supply us with raw materials for our manufactures and food-stuffs for our industrial population does not now apply. With the exception of the Argentine, where coal and iron ore have not yet been discovered, the whole world is becoming industrialised, and seems to be following the example we have set them, developing minerals and manufactures and utilising their food-stuffs to support their growing industrial population.

In considering the countries which have a

surplus of food supplies for export, an essential consideration to bear in mind is the alternative use to which land may be put. The supply of any product is governed by the price in relation to the profits offered by competing agricultural industries. The alternatives may be roughly classified as follows :—

- (1) Breadstuffs.
- (2) Feeding Stuffs for Cattle.
- (3) Meat Products.
- (4) Dairy Products.
- (5) Agricultural Products for use in Manufactures.

The divisions are not necessarily exclusive ; thus, linseed may be grown for flax or for seed, and the cotton crop serves the double purpose of a raw material for manufacture and of a cattle food.

Under certain circumstances the by-product of an industry in one country may be the primary product in another. The production of high-priced merino wool in Australia tends to make the fleece more important than the carcass ; whereas in the Argentine the relative importance of the two products is reversed. Economic considerations may also be bound up with a system of crop rotation, the growing of a crop in the series being determined by its value as part of the system. The availability of transport facilities

and trade organisation are obvious limitations to the agricultural occupations of a country.

CANADA

The rapid strides of Canada's development in cereal acreage of recent years has almost paralleled the earlier Westward movement of cultivation in the States. Limited by the practical exclusion of maize, acreage increase has largely taken the form of wheat. With a population of only seven millions, her wheat production is still small compared with that of the United States. Comparing totals, Canada's ten million acres under wheat in 1911 is roughly but a quarter of the American acreage in the nineties, and the total production of 200,000,000 bushels reached in 1911 is only equal to America's annual exports up to seven years ago. Rapid as the extension has recently been, indications seem to show that the pace in the immediate future will be even greater: the mileage of new railways constructed in 1912 shows a total of 2,000 miles as against 669 for 1911, and 629 for 1910. A portion of this increased mileage is accounted for by the construction of the Eastward and Westward links of two railway systems, which already control an extensive mileage in the prairie district. For the present at all events, these links must be

regarded rather as channels of outlet for the produce of the plains than as opening up new lands for cultivation. The higher range of prices ruling while Canada's Western prairies have been brought under the plough have been all in her favour. A relatively high yield and a progressive population render Canada the most reliable source to which wheat importing countries have to look to for the future. The conditions under which wheat cultivation is carried on to some extent offset these favourable factors. Comparing the proportion of winter to spring wheat in the States and Canada, the total acreage under wheat in the former is three-fifths winter and two-fifths spring, whereas Canada's proportion is one-tenth winter and nine-tenths spring.

Practically the entire acreage has to be sown as early in April as the season will allow. Only the farmer will appreciate the limitations which the crowding of sowing and equally of harvesting into a brief period impose. Compared to the steady though lower yield of the United States, the variations in the yield per acre in Canada is a feature detracting from the reliability of this source of supply, to which further reference is made later on. Other circumstances of a different nature point to some curtailment of the proportion of acreage under wheat both in the newly-developed lands and the older settled districts of the West.

The urgent demands for meat and dairy products in Canada for home consumption must tend to increase the acreage of fodder crops. To a lesser degree the considerable increase in linseed acreage, which has been found to be as suitable for a "breaking crop" as wheat, and which can be sown somewhat later, is a reminder that the practice of "wheat mining" is subject to the competitive influence of other crops. As a sign of Canada's increasing demand for meat and dairy products, the considerable diminution of cheese¹ exports to the United Kingdom, and the complete cessation of meat and butter shipments, are unmistakable. Whereas, up to 1910 we received over 100,000 live cattle per annum, in 1912 Canadian shipments had fallen to 6,800, and a like falling off would appear to have taken place in the exports of hog products. Butter was 61 hundredweight in 1911, and but 27 hundredweight last year; since June, 1912, there have been no exports of butter from Canada, and what is more surprising New Zealand's supplies have been requisitioned to make up a deficiency, the net imports from all sources for the ten months ending January 31st being valued at £268,000.

While the demand for beef has increased, sup-

¹ U.K. receipts of Canadian cheese for 1911 show a decline of 134,000 cwt. compared to those of 1910, and likewise 1912 a decline of 121,000 cwt. compared to those of 1911.

plies have steadily diminished. A Commission known as the Dominion Ranch and Grazing Commission has recently been appointed to reconcile the demands of cattlemen for leases of Crown lands, sufficiently long to justify expenditure on fencing, with the interests of the farmers, who view the large areas occupied by ranchers as limiting the expansion of the cultivable area.

As in the case of the States, the increasing demands of the Canadian Home Market have been due to the expansion of industries, the development of the Western prairies itself making large calls for lumber, and the thousand and one articles required by a prosperous agricultural population. Though Canada's industrial progress is well appreciated in the United Kingdom, the census returns for 1911, showing an increase of urban population twice as great as that of the country districts since 1901, is somewhat of a surprise. Even in the Western provinces the urban population shows rapid growth. As an instance of the alternative to grain production open to the rural population, the increase of 110,000 in the population of British Columbia between 1901 and 1911 is significant, the province being mainly occupied in mining, lumber, fisheries and fruit-farming.

To summarise the immediate outlook as to Canada's place as an exporter of foodstuffs, a

balance has to be struck between probable exports of cereals on the one hand and imports of dairy products and meat. Undoubtedly the shortage of the latter has reached a point which seriously interferes with steady development. The West and the industrial population are making too great demands on the older established provinces. High prices for meat affect farmers by largely increasing the cost of breeding stock. A like rise in horses is another handicap.¹ Gasoline tractors² have been introduced as an alternative to horses. Will not the adoption of this means of cultivation tend to increase the practice of "wheat mining"? Will the Quebec and Ontario export trade in cheese be diverted to filling the urgent home demand for butter?

Cereal acreage will be continually extended. The stream of emigrants, "a thousand a day," and the extension of railways put this out of the region of doubt. To what extent will the higher cost of living check the working of the machine? Will emigration fall off? If it were not that Canada's capacity to export food-stuffs other

¹ Prices of horses in Canada :—

Heavy draft—1900, £30 ; 1911, £65.

General purposes—1900, £25 ; 1911, £50.

Drivers—1900, £32 ; 1911, £70 to £80.

² According to a recent estimate 6,500 motor tractors are in use in the Western Provinces.

than wheat were not called in question, the lower tariffs on agricultural produce likely to result from recent political changes in the United States would be important.¹ At the moment the demand for meat and dairy products is as urgent to the South as to the North of the 49th parallel.

The easiest way of escape from the vicious circle of high prices and an increasing demand in the North American Continent is to give the cattle industry a breathing space by imports on a large scale.

THE ARGENTINE REPUBLIC

The Argentine Republic is now the chief exporter of food-stuffs. The shipments of beef, totalled, for 1912, 4,096,048 quarters. Exports of mutton, though more irregular, amount to about 3,000,000 carcasses per annum. Nor does the frozen meat trade account for all meat exports, shipments of jerked beef and beef essence being still considerable. Cereal exports, unlike

¹ The new U.S.A. Tariff proposes the following alterations :—

Duty on wheat	reduced from	25 cents	bushel to	10 cents.
„ cattle	„ „	25%	ad val. to	10% ad val.
„ sheep	„ „	16%	„ „	10% „
„ hay	„ „	43%	„ „	26% „
„ fruit	„ „	27%	„ „	15% „
„ butter	„ „	6 cents	per lb. to	3 cents per lb.

On flour, meat, swine, potatoes and milk all duties are to be abolished.

those of meat, have shown very wide variations ; the records of 1907-8, when nearly seven million tons of wheat, linseed, maize and oats were exported, wheat that year amounting to 15,908,786 quarters, have been followed by very moderate seasons till the present season, 1912-13.¹

Excluding for the moment the jerked beef trade, the area contributing in the main these remarkable totals of agricultural and pastoral produce is small compared to the total area of the Republic. An open fan placed on a map of the Argentine with the handle at Buenos Ayres, the upper stick reaching to the northern boundary of the province of Santa Fé, pointing a little West of due North, and the lower stick reaching to a point about 100 miles South of Bahia Blanca, will practically cover the area in which these products are grown. A small portion of the Province of Buenos Ayres is not included. If we extend the lower stick in a line with the upper one, the area of sea covered will approximately make up for that omitted. The extreme points of the fan will be 950 miles apart, and the extreme breadth will reach out 475 miles towards the interior.

Though the Provinces of Buenos Ayres, Santa Fé and Cordoba, together with the Territory of the Pampa Central, account for only 75,484,000 acres

¹ Wheat harvest begins in December, maize harvest in March.

out of 729,000,000 acres, the total superficial area of the Republic, the returns for 1910 show over 36 $\frac{3}{4}$ million acres under wheat, linseed, maize, oats, and lucerne, out of 42 $\frac{3}{4}$ million acres reported under these crops for the whole Republic. The figures for cattle, sixteen out of twenty-nine million, especially if we take into account the much larger proportion of graded stock, are equally significant; sheep, 42,000,000, out of a total of 67,000,000.¹ A glance at the railway map will give a good idea of the extent to which the Republic has already been developed, and confirms the conclusion as to the relative importance of the four Provinces.² The total railway mileage is now over 19,000 miles, of which the Province of Buenos Ayres accounts for 7,000, the mileage given for the other three Provinces in the 1910 census being 5,608 miles.

Attention has already been drawn to the fact that the Argentine is the most purely agricultural country of all those engaged in exporting food-stuffs. In spite of this there are industries which make considerable demands on her food supplies. Such, for instance, as the Quebracho timber industry, of which railway sleepers and tanine ex-

¹ The latest stock census shows 80,401,000 sheep.

² The Territory of the Pampa Central is taken as a Province.

tract are the chief products.¹ Vineyards in 1910 occupied over 250,000 acres, and sugar cane some 180,000 acres. In both cases there is considerable room for expansion to supply the demands of the home market. The population of the Argentine at the moment is in dispute, the estimates varying from $6\frac{1}{2}$ million to $9\frac{3}{4}$ million. Without attempting to adjudicate between these figures, the capital, Buenos Ayres, on the census figures of 1910 accounts for some 1,250,000. A rough summary of that census for the other towns accounts for a further 1,120,000, showing nearly $2\frac{1}{2}$ million town dwellers out of a total of about 6,000,000.

With these preliminary remarks, let us summarise in the briefest possible manner the prospects of the pastoral and agricultural industries. Of recent years special districts have gradually come to be associated with certain crops. There have also been certain general tendencies. Wheat has been utilised as a breaking crop for establishing lucerne as a permanent fodder plant, the practice being to sow it with the third crop of wheat as we sow clover seeds with barley. An essential requirement of this plant is to get its roots down to the permanent water strata. It

¹ 1911—Exports of Quebracho .. 500,000 tons.
Extract 84,000 tons
Other industries are 400 flour mills, 40 breweries,

has been said that one of the advantages of the Argentine consists in plenty of water above and below ground. Water is not always accessible for lucerne, the presence of a hard strata between the surface and the natural water level rendering some portions of certain districts unsuitable. Such particularly occur in the southern portion of the Province of Buenos Ayres, which is now mainly devoted to cereals.¹ At the present time, of the 13,500,000 acres under lucerne, one-third are in the Province of Buenos Ayres and nearly a third in Cordoba, Santa Fé accounting for a large proportion of the balance. Bearing in mind that Buenos Ayres has an area of 76,250,000 acres against Cordoba's 43,250,000, the acreage of alfalfa in the latter Province is remarkable. The laying down of land to alfalfa was the primary cause of a considerable portion of the wheat acreage sown during the last decade. Maize is widely grown all over the Republic. Stated as a proportion of the total acreage under the four cereal crops, it is about 32 per cent. in Buenos Ayres, and also in Santa Fé. Certain districts of the latter Province are particularly successful with this crop, and Cordoba produces a large amount. Maize is sown later than wheat, thus enabling the farmer to cultivate a large area with one crop or the other. Cordoba is the largest

¹ Mixed farming is being gradually introduced.

linseed producer, a paying crop, though an uncertain one.

In gauging future expansion of cereal cultivation, it should be remembered that the absence of roads renders the cost of carting at a greater distance than twenty miles from a railway station prohibitive. The province of Buenos Aires is well served with railway communications; and while there is still room for branch lines the main arteries of traffic may be said to be complete. The extensions planned in Santa Fé and Cordoba are about 800 miles, and here, too, the limit of railway extension is in sight. The acreage under wheat for the current crop, as given in the Bulletin of the International Institute of Agriculture, only shows a small increase, the better yield accounting for an estimated increase in the crop of 19 per cent. over 1911-12. Maize shows an increase of 11 per cent. in acreage, and 22 per cent. in yield. The extension of cereal acreage in the Republic appears to be bound up with the future of the Pampa Central Territory. During recent years, there has been a marked increase in the Westward development within the boundaries of this Territory. The rainfall has generally been considered insufficient for wheat growing. With the exception of the present crop, returns have been surprisingly satisfactory. In 1911-12, 350,000 tons of cereals were exported from the

Territory. In the present year the return is likely to show a substantial fall, as 3,000,000 acres are reported to have been ruined by drought.

With regard to live stock, the most marked tendency was the serious diminution in sheep. The census of 1908 put the falling off at no less than 7,000,000 head since 1895. Without relying too much on this estimate, the advent of cultivation has diminished flocks and pushed a considerable proportion of the balance into the out districts, especially the south and west. Partial droughts during the two years, 1910-11, 1911-12, have also been a contributory cause of the lower numbers. During the last two years lamb exports have increased as shown in the table opposite, total shipments for the last five years remaining practically stationary. There are some indications that mixed farming is coming into vogue, and this should correct the decline in sheep stocks. The last official estimate of sheep puts the total on 31st December, 1911, at 80,401,000, as against 72,539,000 on 31st December, 1910. The other evidence, such as exports of wool, sheep skins, and sheep carried on the railways, given in the table opposite, does not appear to confirm this estimate.

The head of cattle at present in the Argentine is estimated at some 28 $\frac{3}{4}$ million. The latest Official Report on the consumption of cattle for

the home market, freezing, etc., is for 1909 from a Report made by the Veterinary Department to the Minister for Agriculture published in 1911. This gives :—

Home Consumption	..	..	4,500,000
Freezing	..	..	641,803
Jerked Beef and Beef Essence			154,600
Live Stock Exports	..	..	132,450
			<hr/>
Total	..	..	5,428,853
			<hr/>

The number slaughtered for freezing during 1912 shows an increase of 350,000 head over the figures of 1909; there is also the inevitable increased home consumption of meat to be taken into consideration. At the present time the annual slaughter and export on the hoof must be well over 6,000,000. An unofficial estimate, which has not been contradicted by the Agricultural Department, puts the total for 1912 at 7,200,000. The same writer estimates the annual increase at 4,600,000 head, showing that present exports and home consumption are trenching on breeding stock and reserves to the extent of 2,600,000 per annum. Allowing for the consumption of hides in the Argentine, the total number of hides exported seem to justify a high estimate of annual slaughterings for all purposes. It must be remembered that, though the vast expanses of

Argentine Agricultural Exports

AND

Numbers of Cattle and Sheep Carried by Rail.

	Wheat. Tons.	Flour. Tons.	Oats. Tons.	Maize. Tons.	Linseed. Tons.
1908	3,606,440	113,554	440,216	1,786,073	1,064,605
1909	2,576,009	111,573	435,540	2,336,534	918,413
1910	1,898,031	113,546	367,761	2,621,594	654,299
1911	2,292,806	109,471	525,079	129,743	442,982
1912	2,657,451	115,925	909,731	4,832,502	529,550

	Frozen and Chilled Beef Quarters.	Mutton and Lamb Carcases.		
		Mutton.	Lamb.	Totals.
1908	2,292,449	2,906,291	359,588	3,265,879
1909	2,584,301	2,323,953	399,917	2,723,870
1910	2,899,622	2,408,761	434,915	2,843,676
1911	3,755,452	2,488,158	991,102	3,479,260
1912	4,096,052	2,241,699	718,051	2,959,750

	Hides.	Wool. Bales.*	Sheepskins. Bales.	Butter. Kilos.
1908	4,251,487	385,365	76,371	3,546,800
1909	5,319,238	449,372	81,606	3,693,075
1910	5,108,293	356,402	80,699	2,759,025
1911	5,522,247	383,003	75,404	1,214,225
1912	5,947,571	355,438	66,882	3,514,300

Cattle and Sheep carried on Four Principal Railways:—

Year ending June 30th, 1911.	Year ending June 30th, 1912.	For the Half-year ending December 30th, 1912.
Cattle: 5,226,383	4,530,800	The two principal stock carrying lines show a decrease of 75,058 Cattle and 13,957 Sheep compared to the corresponding period of 1911.
Decrease for second period, 695,583		
Sheep: 13,311,870	12,305,876	
Decrease for second period, 905,994		

* The Exports of Wool are for the season ending Sept. 30th of each year.

Alfalfa are the best fattening area in the world, these pastures are not so satisfactory as grass lands for breeding purposes. The recent returns of a well-managed estancia with a stock of 30,000 cattle, showed an increase of only 50 per cent. from the heifer stock, and 83 per cent. from cows, the average increase being 75 per cent. of the breeding stock. The estancieros who annually rear their own calves are reaping the benefit of the high prices which now prevail, but those who have depended on their ability to buy steers for fattening are finding the scarcity of stock a serious handicap.¹ The latest advices from the Argentine report that the shortage of stock is reflected in the lower rents obtained for alfalfa pastures, considerable areas being unlet from this cause.

In view of the foregoing we are scarcely called

¹ The following shows the rise in prices of cattle and sheep during the last year :

	April, 1912.		April, 1913.
Special steers for freezing	£9 10s. ..		£14 16s.
	to		to
	£10 10s. ..		£15 14s.
Extra good	..		£17 10s.
Graded cows	£7 8s. ..		£11 7s.
	to		to
	£7 17s. ..		£13 2s.
Special calves, year old	£3 10s. ..		£5 13s.
	to		to
	£3 18s. ..		£6 2s.
Sheep for freezing ..	£1 1s. ..		£1 4s.
	to		to
	£1 2s. 6d. . .		£1 8s.

upon to enquire as to the areas suitable for an extension of the cattle-raising industry. It must be remembered that a considerable proportion of the total cattle stock returned for the Republic are not graded up sufficiently for the frozen meat business. Recent proposals have been made by the Government to establish acclimatisation farms for pure-bred stock in the North-Eastern, and therefore more tropical Provinces of Entre Rios and Corrientes, as the risk of losses when introducing pure-bred bulls has proved a bar to the improvement of the cattle stock by private owners.¹ The cattle in these Provinces has, up to now, been marketed to the jerked beef and beef essence factories, where high-grade stock is not essential.

The point of excellence to which the cattle and sheep stock has attained, is due to the interest shown in the development of the pastoral industry by wealthy Argentine landowners, and by the aptitude of the gaucho for handling cattle. Nor would any Argentine deny that the "Gringo"² has assisted. An estate, or more accurately a farm of 244 square miles, with 65 square miles under lucerne, carrying a stock of 100,000 head of cattle and the same number of sheep, besides a

¹ This must not be interpreted to mean that there has been no improvement by crossing in these Provinces.

² "Gringo"—foreigner.

large acreage under cultivation, is almost outside our comprehension, yet such there are. The success of cattle-raising has been due to the industry being conducted on a vast scale. Prices paid for bulls may seem extravagant. They are strict business when the benefits of a good sire can be spread through his descendants over a large herd.

Cereal cultivation is subject to very different conditions. It depends, to a considerable degree, on emigration from Europe, mostly consisting of Italians and Spaniards—a movement surely one of the most remarkable of modern times, some 100,000 labourers annually travelling to the Argentine and back, say 12,000 miles, for the crop season. Nor does the organisation of agriculture as opposed to stock-raising compare favourably with other countries. A system of grants of land to immigrants, such as that in force in Canada, or the Homestead Laws which did so much to help the westward development in the States, if not entirely absent, is certainly very ineffective, though the Argentine Law of Inheritance, entailing the equal division of property amongst heirs, to some extent makes up for this defect by bringing properties into the market. The cultivator is generally a share farmer or a renter. Over wide areas, when he has reaped a third cereal crop, with which lucerne

has been sown, he moves on. Nor does the handling of the grain or the facilities afforded to farmers for getting credit on wheat, compare with the conditions ruling in Canada or the U.S.A. Some amelioration of these conditions is probable in the near future.

To summarise the immediate future, two important factors, immigration and crop variations have already been mentioned. Argentina has a full share of crop vicissitudes. Railway extension is likely to be checked by the difficulty of raising capital at the present time in Europe. This will hardly affect the well-established railways, though it is likely to delay the completion of extensions by the smaller companies. The shortage of live stock, on the other hand, will tend to increase the area under cereals by restricting the acreage put under Alfalfa. Dairy produce should tend to show a gradual increase, and wine, fruit and sugar cultivation likewise.

To look further in the future is a speculative occupation. Undoubtedly the carrying capacity of the Republic would allow of a much larger head of live stock. In face of the annual demands for slaughter and export on the hoof, will the breeding stock be given an opportunity of increasing? Outside of the three Provinces, the extension of cereal acreage largely depends on the Pampa Central. To the South, and also in

the North, irrigation schemes have been started. To the North the tropical climate in some portions or the low rainfall in others, are both bars to any considerable extension. Developments there will be in both directions. They are not likely to materially affect the total production in the immediate future, or at any time to be considerable. Perhaps the most important exception will be a gradual increase of stock in the distant foot hills of the Andes towards the south-west, and also in selected portions of the Southern Pampa. As already pointed out, there is much to be done in supplying home demands. Wheat consumption now amounts to 1,000,000 tons per annum. With the closer settling of the country, the demand for cereal food-stuffs is likely to increase, resulting perhaps in a diminution of the present extravagant consumption of meat, a legacy of the times when the hide was worth as much as the carcase.

AUSTRALASIA

Australasia is the next source of supply to be examined. Owing to her position midway between America and Africa, and near India and the East, the export of meat and butter to some of these destinations is now an appreciable amount of her total output. At times, owing

to special causes, such as the South African or the Russo-Japanese war, the trade to destinations other than Europe reached large proportions. Almost two-thirds of mutton and lamb imports into the United Kingdom come from Australasia, New Zealand and Australia contributing two-thirds and one-third respectively of this total.

Of other meat imports, beef, mostly from Queensland, amounts to approximately one-seventh of our total supplies. Butter exports largely increased up to 1911, but the recent drought has caused a serious diminution in exports. For 1911 supplies from Australasia were not far short of one-half of all butter imports, Australia's contribution being as two to one of New Zealand's exports. British imports of Australian wheat have already been noticed.

The competition between Australasia and Argentina in meat exports makes a comparison between the conditions under which the industry is carried on in these two sources of supply instructive. The latter has a very considerable advantage by the concentration of the industry at Buenos Ayres. Not only does this facilitate the grading of the meat but it enables full boatloads to be shipped direct to Europe. Another advantage is due partly to the better organisation of the industry and partly to the continuous crop

of that invaluable plant lucerne. While Argentine pastoralists are able to keep up a steady stream of supplies, the New Zealand farmer, especially in the South Island, depends to a large degree on turnips for fattening sheep, with the result that during certain months of the year no shipments are made. It has been suggested that this difficulty might be overcome by increasing the storage facilities in New Zealand, so that an interruption in supplies would be avoided.

A comparison of railway facilities and organisation brings out another point in which the Argentine producer has the advantage. The Report of the Royal Commission on food supplies in New South Wales, recently published, clearly shows the defects of transportation.

The Commission recommends amongst other improvements that sheep trucks should be provided opening at the ends, that the cattle trucks should be better ventilated, and that stringent measures be taken to detect and punish carelessness in driving of stock trains. As "trucks opening at the end" may come somewhat as a surprise to English readers, it may be mentioned that the trucks on Argentine Railways are all fitted in this way, the sheep trucks being "two-deckers" and thus capable of carrying large numbers conveniently.

Overleaf will be found a table giving various

statistics of the States making up the Commonwealth of Australia. Queensland, it will be seen, is pre-eminently the cattle State. Of 11,744,000 cattle in Australia in 1910, Queensland accounted for 5,131,000, almost exactly double the number recorded on the break up of the drought in 1902. Though Queensland takes the third place in butter production amongst the states of the Commonwealth, 90 per cent. of the cattle are of the beef type. The number of sheep in Queensland in 1910 were 20,331,000 or 22 per cent. of the total in the Commonwealth. With the improvement of the pasture by cattle and the high price of wool, sheep have in some districts taken the place of cattle. In view of the preponderance of Queensland cattle it is not surprising to find that of some 590,000 quarters of frozen beef shipped in 1911, 547,000 were from Queensland. A considerable trade in frozen beef has been built up with the Far East, especially the Phillipines, and new markets in the Straits Settlements are hoped for. Artesian wells in Queensland have been sunk, the daily flow being 470,929,000 gallons from wells bored by private owners and 35,560,000 from State-bored wells.

The problems of Australia's agricultural development may be stated as centering in two main groups, first, the measures being taken to minimise

AUSTRALIA.

Statistics showing Agricultural Production.

	Butter Production, 1910.	Cheese Production, 1910.	Cattle.
New South Wales	76,600,000 lbs.	5,100,000 lbs.	3,140,000
Victoria	70,600,000 "	4,500,000 "	1,547,000
Queensland	31,200,000 "	4,100,000 "	5,131,000
South Australia	10,700,000 "	1,700,000 "	384,000
West Australia	800,000 "	—	825,000
Tasmania	3,300,000 "	800,000 "	201,000
Northern Territory	—	—	513,000

TOTAL ... 193,200,000 lbs. 16,200,000 lbs. 11,741,000

	Sheep per cent. in each State of Total in Commonwealth.	Sheep Slaughtered, 1910.	Wheat, 1909-10.
New South Wales	50 %	7,500,000	1,990,000 acres
Victoria	14 %	4,200,000	2,097,000 "
Queensland	22 %	1,751,000	117,000 "
South Australia	7 %	1,300,000	1,895,000 "
West Australia	5½ %	500,000	448,000 "
Tasmania	—	—	37,000 "

TOTAL ... 15,251,000 6,584,000 acres

Yield of Wheat per acre, 1901-02 to 1909-10, in bushels.

Season	New South Wales	Victoria	Queensland	South Australia	West Australia	Tasmania	Commonwealth
1901-02	10·6	6·9	19·4	4·6	10·1	21·8	7·5
1902-03	1·2	1·2	3·2	3·6	10·6	21·4	2·4
1903-04	17·5	14·4	17·6	7·7	13·6	15·5	13·3
1904-05	9·2	9·2	14·2	6·5	11·8	18·7	11·1
1905-06	10·6	11·3	9·5	11·4	11·8	18·7	11·1
1906-07	11·6	11·1	9·6	10·3	11·0	19·8	11·1
1907-08	6·5	6·5	8·4	10·9	10·4	20·9	8·2
1908-09	11·1	13·1	14·8	11·4	8·6	24·0	11·8
1909-10	14·3	13·7	13·4	13·2	12·4	21·4	13·7

and counteract climatic variations, and second, the development of those means which tend to increase production and give it an efficient means of outlet. Taking climatic conditions first, the practice of making ensilage against dry spells is a precaution which has come a little more into vogue. The boring of artesian wells is another. Irrigation schemes are being developed, Burrenjuk in New South Wales, Goulburn Valley in Victoria and Murray River in South Australia being the principal. These schemes are under Government control. There are considerable difficulties to be overcome in rendering them effective for production. The cost of construction is heavy, and interest and sinking fund have to be paid for by the tenant in the shape of rent. In some cases there has been considerable difficulty in finding tenants, and the majority of those obtained have come from abroad. The reluctance of experienced Australian farmers to undertake the rent of an irrigation plot is also an indication that it is easy to exaggerate the effect of dry spells in retarding Australian production. An examination of the fluctuations in production of wheat and butter, and the annual census of stock and sheep of each State over a series of years, brings out the different fortunes of each industry in each State. Taking Australia as a whole the wheat production shows greater variations than

the pastoral industries, dairy produce and meat. Further examination of the statistics of production will show that some districts, such as the Southern districts of Western Australia, have maintained a remarkably steady production of wheat. Of the factors affecting the outlet for produce the chief is the problem of railway communication. Some reference has already been made to this subject in dealing with the Australian meat industry. The importance of efficient and adequate transportation in the development of a new country necessitates some further consideration.

It must be remembered that Australia is hampered by the policy of railway construction dating prior to the Federation of the States into the Commonwealth of Australia, the railways of each colony being of different gauge. Though the State owned railways are an important asset against the capital liabilities of the various States, further extensions must necessarily depend to a large degree on the capacity of the investing public to absorb "gilt-edged" securities. It is significant of present conditions ruling in the money market that the Canadian Pacific Railway have recently made a large issue of their common stock for the purpose of paying off debentures, and that the issue, though made at a high premium, was welcomed by investors. Another

occurrence pointing to the same conclusion is that the Indian Government proposes to apply part of last year's surplus revenue to much needed capital expenditure on railways. Perhaps Australia will follow the same course, though the considerable rise in working expenses of the Commonwealth railways for the year ending June 30th, 1912, would seem to preclude this possibility.

Another all-important factor is the question of population, in which is included immigration. Canada is now attracting some 350,000 immigrants a year, Argentina about 300,000, Siberia at least as many. The returns for Australia are as follows :

	1909.	1910.	1911.	1912.
Arrivals ..	83,609	95,692	141,909	166,958
Departures	54,676	58,145	64,206	73,541
	<hr/>	<hr/>	<hr/>	<hr/>
Net Increase	28,933	37,547	77,703	93,417
	<hr/>	<hr/>	<hr/>	<hr/>

Though the greater distance from Europe places Australia at a disadvantage compared with Canada or Argentina, this cannot sufficiently account for the small number of immigrants. Nor is the number of departures a satisfactory feature. Better organization in the means of communication and improvements in other directions would undoubtedly bring with them increased immigration.

The increase in home consumption of all meat and agricultural produce is a feature in Australia as elsewhere, and the cultivation of fruit in Tasmania and in other States is now on a considerable scale. The large proportion of urban to rural population also repeats a feature which has been noticed in Argentina and Canada.

Undoubtedly, Australia could immensely increase the output of her wheat, meat and dairy produce. Transport and population are her most crying needs. Till there are some clearer indications than at present that these will be forthcoming British farmers need not anticipate any considerable competition from that quarter.

INDIA.

India's agriculture in the popular mind is connected chiefly with wheat, cotton and tea. We are at present concerned with wheat and cotton, in the shape of cotton seed cake and other oil seeds and feeding stuffs.

The variety of climate in the vast areas comprised in India is such that every stage in the growth of the wheat crop can be seen going on at the same time. In the principal wheat areas, the crop is sown from October till November and reaped in March and April.

The chief wheat areas are distributed as follows:—

	Percentage of cropped area under wheat.	Percentage of Indian area under wheat.
Punjaub	33 %	29 %
United Provinces	20 % ₁	27 %
Central Provinces and Berar	16 %	11 %

The proportion of the crop produced under irrigation of some kind or another is also an interesting point. In the Punjaub and the Central Provinces approximately half is grown by irrigation. It is noticeable that even irrigated areas are favourably affected by good seasons.

The conditions under which wheat is grown in India resemble those ruling in Russia on many points. In both, the peasant is poor. In Russia, rye is the staple breadstuff. Only in the Punjaub is wheat an important breadstuff. Wheat is grown largely for export. The area under this crop is only a small proportion of the total production of food grains. It acts as a reserve in case of a crop failure of the other food grains.

The wide variations in wheat exports unaccompanied by a corresponding increase or decline in production—a feature common to Indian and Russian exports—is thus explained. Another point should be borne in mind; though Indian wheat is a comparatively recent source of the

world's supplies, the system of cultivation practised is the outcome of long experience—crop rotation, including the use of leguminous crops, is practised.

The area under wheat, as a result partly of higher prices and the gradual increase in Canal colonies, has increased, that of 1909-10 showing 12 per cent. increase over the previous five-yearly average and that of 1910-11 an 8 per cent. increase on the previous year.

The most important other products coming within the scope of this book are feeding-stuffs. Like wheat the exports of seeds of all kinds have shown wide variations, thus for the year 1908-1909 the total value was £7,700,000 and in 1909-1910 £12,400,000, in 1910-1911 the value had risen to £16,748,000. The principal exports coming under this head are linseed, barley, rape and gram. The increased exports of gram and barley have been a very marked feature of recent years. Thus, exports of barley have increased from 81,000 tons in 1907-1908 to 600,000 tons in 1911-1912, and gram from 56,000 tons to 366,000 tons for last year. It is noticeable that a large proportion of these feeding stuffs have been consigned to European countries other than the United Kingdom.

Wheat supplies from India are likely to be variable. At present remunerative prices and

good crops have brought prosperity, of which there is no better indication than the increased profits of the railways. The expansion of manufactures is steadily progressing, and it would be, therefore, unwise to look for any considerable increase in wheat exports even with a continuance of the present good seasons.

RUSSIA

If Russia's enormous acreage under rye and wheat, the former almost entirely grown in European Russia, be added to the acreage of barley and oats, it will be realised how much her total cereal acreage overtops any other nation. Only in the case of maize does she take an inferior position. The returns of the last ten years show an increase in wheat acreage in the early years of the decade which has been sustained, a slight fall in rye, and an increase in barley and oats.

The production of wheat and rye, and the exports of these breadstuffs for the three years 1908-10, has been as follows, in quarters:

Production :

	1908.	1909.	1910.
Wheat	73,557,000	99,158,000	97,995,000
Rye	92,176,000	105,421,000	102,097,000
	<u>165,733,000</u>	<u>204,579,000</u>	<u>200,092,000</u>

Exports :

	1908.	1909.	1910.
Wheat	6,312,000	22,163,000	26,412,000
Rye	1,873,000	2,670,000	3,046,000
	<hr/>	<hr/>	<hr/>
	8,185,000	24,833,000	29,458,000
	<hr/>	<hr/>	<hr/>

Exports stated in percentages on total production of breadstuffs are :

1908.	1909.	1910.
4.95 %	11.75 %	14.5 %

These figures clearly show that the rye crop is almost entirely grown for home consumption. When a failure occurs more wheat is consumed. It should be remembered that the year 1908 was the second consecutive season of bad crops.

Russia's dairy products have of recent years made a marked advance. The railway returns of butter transported in 1910 show an increase of 48 per cent. since 1901. Butter exports from Russia have correspondingly increased by 75 per cent. in quantity and 94 per cent. in value during the same period. The chief centre of the butter industry is Western Siberia, which accounts for 60 per cent. of all the butter transported by rail. The profitable nature of the dairy industry has been the best safeguard against the diminution of Russia's cattle stock, though the higher prices for cereals of the last few years has not

been without its influence in diminishing the number of cattle.

There are several noticeable features in Russian agriculture. The poverty of the cultivator and the destitution resulting from bad harvests occurs only too frequently. Much has been and is being done to remedy this, for Russian agriculture is undergoing a transition. The agrarian riots of 1905-6 were caused by dissatisfaction with the communal land system. The custom by which the strips of common land cultivated by the peasants were periodically redistributed as population increased brought much hardship in its train. Nor did the system make for good cultivation. To paraphrase a well known saying, what might be anyone's property is nobody's property. By the law of November 22, 1906, the land was apportioned in each commune or "mir" to the peasants who became the owners of the freehold. Those who were too poor to make a living out of the land allotted to them sold their new possessions, became labourers, or emigrated, as we shall see, to Siberia. The new and better system has brought new needs into existence, capital and co-operation. The Zemstoos and other associations assist the farmer not only with capital, but also with expert advice. A marked increase in the number of these societies, as well as in imports of agricultural machinery have resulted.

The paternal assistance of the Russian Government to agriculture should be noted. The drought of 1911 brought cattle into the market. The Government allayed the peasants' natural anxiety and tided over the period by transporting fodder from the more favoured districts. The wheat crop of 1910 was an abundant one—the Government provided special credit facilities so that farmers should not be obliged to force their crops on the market. Another remarkable feature is the emigration to Siberia. Canada boasts its “1000 a day.” In one year, 1909, emigrants to the number of 700,000 went to Siberia. In 1910 and 1911 the figures were 352,000 and 230,000, the falling off being due to bad harvests in Western Siberia. Not all who go are successful in finding the land they require. In both years some 70,000 returned. In spite of this the figures are remarkable especially in view of the scanty transportation facilities.

A line drawn from St. Petersburg in the West right across to the boundary of European Russia in the East would roughly divide the cultivated and uncultivated portion of Russia's vast Empire in Europe. It is to the south of the line that the main area of production lies. Rye and wheat are widely distributed. Oats are grown more in the Provinces lying just south of the line ; barley near the Black Sea and maize in the

Caucasus. Perhaps the most noticeable change in Russian agriculture of recent years has been the increase in sugar-beet cultivation, especially in the South-Western and Central provinces. The introduction of a root crop is a distinct advance in Russian agriculture reducing the bare fallow, still extensively resorted to as a means of resting and cleaning the land. Other important crops are sunflower seeds, linseed, and rape, also cotton grown in Central Asia and trans-Caucasia.

A noticeable feature of transportation in Russia is the use made of rivers, lakes and canals as means of communication, the total water mileage, including Finland, amounting to 147,000 miles. The canal barges carry some 400 or 500 tons and the larger barges approximately three times as much. A portion of the wheat destined for shipment from Baltic ports is transhipped at Rybinsk from the large barges on the Volga and completes the journey, some five hundred miles to St. Petersburg by canal. Russia as a source of our wheat supplies, as we have seen, is a very variable factor. This is partly due for reasons already stated, and partly to the fact that Russian exports are sent more across her European frontiers than to us.—Further reference to this point is made later on in reference to butter exports.—We are not likely to receive increased supplies from this source on an average, as

Russia is at the moment probably one of the most promising fields for industrial development not only in mining, oil, etc., but also for those industries which are working up the raw materials provided from her agriculture into manufactured articles. The low purchasing power of large numbers of her population is but an index of the extent to which an increased consumption of foodstuffs, resulting from industrial development, would limit her exportable surplus.

DENMARK AND HOLLAND

Two old-world countries, Denmark and Holland, have by a specialisation in intensive culture marvellously developed their agriculture. Denmark is both an importer and exporter of agricultural products, imports consisting of breadstuffs and butter chiefly from Siberia which is subsequently re-exported. Also large quantities of feeding stuffs, such as wheat offal, oilcake, maize, oats, etc., which form the raw materials of her exports of butter and bacon. From Denmark the United Kingdom imports butter not far short of a third of her total Overseas supplies.

The complimentary product of Denmark's dairying industry, bacon, of which her exports amount to a total of 2,000,000 cwt., almost the whole total of which is sent to the United Kingdom, account for one half of our Overseas sup-

plies. Of the acreage under crops: wheat and rye account for, roughly, 1,100,000 acres, 1,500,000 acres are under barley, oats and mixed corn, and an even larger acreage under fodder and root crops.

Holland's agricultural production is also largely engaged with dairy products, in this case taking the form of cheese, which almost doubles the exports of butter. Here the United Kingdom's purchases are considerably less than a quarter of Holland's total exports. Of recent years they have amounted to some 250,000 cwt., with a tendency to decrease. Though only one-seventh of the amount received from Canada, the supplies reaching us from Holland rank third in our total cheese imports.

The story of Holland's agriculture is somewhat similar to that of Denmark. Considerable quantities of breadstuffs and feeding-stuffs are imported. Perhaps the most noticeable difference is the much larger acreage under sugar beet, resulting in an export of nearly 100,000 tons; also a considerable acreage under vegetables which are largely grown for export. Holland is the principal external source of Belgium's supplies of mutton, some 52,000 sheep and 37,000 lambs being consigned to that country in 1911. Holland's cattle exports have recently shown a very considerable falling off.

CHAPTER IV

THE WORLD'S WHEAT TRADE

UP to the present we have been engaged in reviewing the production of wheat in the principal sources from which importing countries draw their supplies. The knowledge thus acquired enables us to appreciate better the problems involved by the world's requirements of bread-stuffs.

During the five cereal years (1st August to 31st July), 1906-7 and 1910-11, international trade in wheat ranged from 76 million to 59 million quarters, the world's total production having varied during the same period from 460 million to 393 million, and the "reserves in sight" on 1st August from 25 million to 12 million. Stated in percentages, the world's wheat imports have varied in these five years from 13 per cent. to 18 per cent. of the world's production.¹

With some exceptions, the destinations of the world's surplus wheat has been remarkably steady. The United Kingdom takes roughly

¹ The figures which follow are taken from Broomhall's "Corn Trade News."

some 25 million quarters per annum. During the period under review our imports have varied from 38 per cent. to 44 per cent. of the world's exports. Approximately, the importing countries may be set forth as follows:—

Great Britain	...	...	25,000,000	quarters.
Germany	...	...	9,000,000	„
Belgium	...	...	6,000,000	„
Italy (variable), say	...	...	6,000,000	„
Holland	...	...	2,500,000	„
Switzerland	...	...	2,500,000	„
Sweden	...	...	900,000	„
Greece	...	...	900,000	„
Denmark	...	...	600,000	„
Norway	...	...	400,000	„
Portugal	...	...	250,000	„
Turkey and ex European countries	...	...	10,000,000	„
			<hr/>	
			64,550,000	„
			<hr/>	

The exports in quarters during the period 1906-7 to 1910-11 from the principal sources of supply show the following variations.

	Minimum.		Maximum.	
U.S.A.—				
	9,000,000	1910-11	19,900,000	1907-08
Canada—				
	5,100,000	1906-07	8,570,000	1909-10

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	Minimum.		Maximum.
Russia—	7,600,000	1907-08	28,800,000 1910-11
Balkan States—	2,900,000	1907-08	10,900,000 1910-11
India—	2,700,000	1907-08	6,900,000 1910-11
Argentine and Uruguay—	7,348,000	1909-10	16,300,000 1907-08

That these variations are in the main due to seasonal differences appears when the yield per acre, read in conjunction with the acreage under wheat, are examined.

The supremacy of the United States as an exporter of wheat up to 1903 has already been referred to. From 1886 to 1896 the exports in one year only fell below 11 million quarters, averaging for the period 1886-1896 nearly 18,000,000 quarters, and from 1897 to 1902 the average was as high as 26,660,000 quarters,—during the second period approximately 55 per cent. of the world's total annual exports. The gap in the world's supplies caused by America's smaller exports has principally been made up by the larger output of Canada and Argentina. A comparison of the variations in yield per acre in these countries with that of the United States, clearly shows that they are less reliable sources of supply, for, though the yield per acre in the United States is a low one, it has kept very steady

over a long period with a marked tendency to improve.

Some indication of the causes which bring about these vicissitudes may help us to understand them. The weather conditions prevailing when ploughing for the coming crop is in progress, or the seed sown may not only affect the yield, but restrict the acreage. There follows the growing season, necessarily more prolonged in winter than in spring wheat, and finally the harvest. It is immediately preceding and at harvest time that the Argentine, and to a lesser degree, the Canadian conditions compare unfavourably with America. In both countries frost often does considerable damage to the crop when wheat is in flower or "in the milk." In the Argentine no period of bright sunshine to ripen the crop, or fine weather to harvest it can be expected, let alone relied upon. The Argentine crop of 1911-12, which promised exceedingly well up to the harvest, was seriously damaged, if not destroyed by bad weather. With Canada a much larger proportion of spring wheat—nine-tenths spring to one-tenth fall—as against two-fifths spring and three-fifths winter wheat in the States¹—throws the work of harvesting into a shorter period and extends it, owing to the higher latitude of Canada's wheat belt, into

¹ The proportions of spring to fall wheat are those for 1911.

the season when frost may injure the grain before it is ripened, or bad weather make harvesting difficult, if not impossible. During the harvest of 1911 much wheat was spoilt by this cause. Thus, in addition to the risks of the growing period, both the Argentine and Canada have special harvesting risks.

In considering the World's total production of breadstuffs, the importance of cereals other than wheat is apparent. In Western and Central Europe the rye crop is all-important. The Bulletin of the International Institute of Agriculture shows that in Russia in Europe the annual acreage under rye for the period, 1901 to 1910, averaged 69,400,000 acres, and that of Germany 15,000,000 acres, the production averaging during the same period 88,000,000 and 42,750,000 quarters per annum respectively, compared to a wheat acreage in Russia in Europe of 55,000,000 acres, and in Germany of 4,550,000 acres, with an average production of 64,500,000 quarters and 15,600,000 quarters. The output of rye in Russia and Germany, it may be added, account for three-quarters of the world's production. It will be realised that any failure of the rye crop in Western or Central Europe must result in a large increase in wheat imports from other quarters. This was well seen in 1891, when the failure of the rye and wheat crops in Europe necessitated con-

siderable wheat shipments from the United States.

As attention has been drawn to the variability of the crops of the Argentine and Canada when compared with that of the United States, some detailed consideration of the yields over a series of years is necessary. Again making use of the returns issued by the International Institute of Agriculture during the period 1901-10, the highest yield per acre for wheat in the Argentine is that of 1907 returned at $12\frac{1}{2}$ bushels per acre. Once during the decade the yield has fallen to $6\frac{1}{2}$ bushels per acre, or 48 per cent. below the return of the best year. One year it was 33 per cent. below, and two years 28 per cent. With regard to Canada the best year was 1902, with a yield of about 23 bushels per acre. In one year the yield dropped to 38 per cent. below 1902; in 1910 it fell 34 per cent. below, and in 1904, 33 per cent. With regard to Australia, the best year was 1909, with a yield of nearly 13 bushels. Excluding 1902, when the crop was practically a total failure with a yield of only $2\frac{1}{4}$ bushels, in 1901 the yield was 44 per cent.; in 1907, 39 per cent.; and 1904, 36 per cent. below 1909. With regard to India and Russia, the returns do not show so great a variation. In India two years are 22 per cent. below the maximum of 12 bushels recorded in 1910, and

WHEAT.

Table showing the variations in yield per acre in the under-mentioned countries, calculated as a percentage reduction to one decimal point, on the year of the highest yield during the period 1901-10. In the year of the maximum yield, the actual yield is shown in bushels per acre.

	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Gt. Britain	9	4.3	12.5	22.8	4.3	1	32 bushels per acre max.	5.6	1	11.6
U.S.A. ...	3.4	6.8	17.0	19.7	7.5	14.6 bushels per acre max.	10.2	10.2	.6	10.2
Canada ...	9.6	23 bushels per acre max.	24.8	33.5	11.7	9.1	38	31	12.2	34
India ...	13.3	7.5	12 bushels equal max.	1.6	22.5	5.0	15.8	22.5	15.8	12 bushels equal max.
Argentina	48.5	15.8	9.5	7.1	28.6	17.4	12.6 bushels per acre max.	23	33.2	29.4
Australia ...	44.5	85.0	2.3	36.7	18.7	18.7	39.0	13.2	12.8 bushels per acre max.	5.5
Russia ...	—	—	—	—	—	13.5	2.0	9.6 bushels equal max.	9.6 bushels equal max.	4.1

Bushels taken at 64 lbs. bush

two years are 15 per cent. below. Taking Russia in Europe and Asia together, one year shows a falling off of 13 per cent. below the maximum, which is recorded as slightly over $9\frac{1}{2}$ bushels for 1908, and for 1909. An analysis of the United States returns shows a maximum of $14\frac{1}{2}$ bushels in 1906. In 1904 the yield was about $11\frac{3}{4}$ bushels or slightly under 20 per cent. below, in 1903, 17 per cent., and 1907, slightly over 10 per cent. below the maximum yield.

The significance of these figures is unmistakable. It is impossible to escape the conclusion that the world's wheat supplies are more liable to violent fluctuations than during the period in which reliance on the United States was the main feature of the world's wheat trade. A surprise either in the shape of a large diminution in the world's surplus crop, or a glut may result. It may perhaps be urged that a partial crop failure either in more than one of the principal exporting countries, or in that of one of the important consumers which rely to a large extent on home-grown supplies, is unlikely to occur at the same time. The objection may be answered by pointing out that as the world's imports, as we have already seen, are only from 13 per cent. to 18 per cent. of the world's total production, it requires but an inconsiderable diminution of the world's total supplies to bring about a sensible

stringency. In the cereal year from 1st August, 1907, to the 31st July, 1908, the world's total exports dropped some 8,000,000 quarters from those recorded in the previous cereal year. The following crop season exports were again considerably below those of 1906-7, on this occasion to the amount of 6,000,000 quarters. That the falling off in exports was due not to diminished demand, but to a shortage of supply is best shown by the considerable rise in price which occurred.

During these two years Canada's crops fell 38 per cent. and 31 per cent. successively from the yield recorded in 1902, which was the best year during the decade. In the States both 1907 and 1908 were 10 per cent. below the best year (1906). The Argentine, which may be said to have saved the situation in 1907 with the best crop of the period, only had a moderate crop in 1908. The reserves in sight while these changes were going on, are instructive. Estimated on 1st August, 1907, at 25,000,000 quarters, they are returned at 16,000,000 on the same date of the subsequent year, and 12,000,000 in 1909. It will be remembered that it was in 1909 that the average official price of wheat in the United Kingdom was returned at 36s. 11d. per quarter, the highest recorded since 1891, when the price was 37s. od.

So far we have been dealing with the variations in the crop returns of the exporting countries.

Equally important are the harvests of countries like France which have a large acreage under wheat. The year 1910 was marked by a reduction of the French crop equal to about 23 per cent. on the ten-yearly average, with the result that France entered the list of importing countries in 1911 to the tune of 10,000,000 quarters. As we have already seen, there have been crop failures in Europe before, which have been met, as in the late 'seventies and in 1890, by largely increased imports from the United States. Is the ability of the present surplus exporters of wheat equal to such an emergency if it were to arise? There are many differences in the situation at the present time as compared to those ruling in the 'seventies or in 1890. The earlier period was that, as we have already seen, when the States, partly from choice and partly from necessity, were throwing their whole impetus into the developement of agriculture. In 1890, the process was still going on in spite of low prices. The failure of the Russian crop coincided with the remarkably good American crop and the crisis was overcome. The low prices ruling at the time undoubtedly helped. Cheap wheat meant large farmers reserves, and the increased demand was met from invisible supplies. In fact, so confident were American farmers that the United States held the key of the market that a

considerable amount of wheat was held up by them during the winter of 1891 in the belief that still higher prices would be obtainable. High prices drew out invisible supplies all over the world and those American farmers who had held on to their stocks suffered.

The higher prices ruling for wheat at the present time is the most important difference between the situation now and that of 1891. It is unlikely that invisible stocks in the aggregate are so extensive. Another feature is the high values ruling for cereal feeding stuffs at the present time. A deficiency in wheat cannot be so cheaply met by the use of alternative cereals. Reviewing the position as a whole, it is impossible to avoid the conclusion that a serious wheat shortage would under present conditions be accompanied by a marked increase in prices.

That wheat is a pioneer crop is a matter of common knowledge, but it is doubtful whether the full significance of this is sufficiently realised. The passage from the U.S.A. Agricultural Year Book already quoted in reference to wheat growing when the Western prairies were being opened up cannot afford to be forgotten. "The wheat farmer is far less a farmer than a speculator." The observation cannot be held to be equally true wherever new lands are being developed. It applies probably with equal truth to Canada at

the present day. Essentially the value of land must depend on the remunerative nature of agriculture. It may be that profits lie in the future, as was the case when America's expansion was going on. So long as lands in a progressive community remain to be developed some one will be found to colonise them partly with the intention of making a livelihood, and partly with the hope as population increases, and transport facilities become available, to write up the value of his property. Though it would be too much to say that this movement will go on whether farming conditions ensure profits or not, undoubtedly the income-profit from land is only one factor. The provision of railway facilities is an important part of the development of new areas. The railway pioneer looks ahead to forestall competitors and joins hands with the speculator-farmer. In fact, the obstacles, whether physical or financial, affecting the exploitation of transportation are probably a much more important factor in the development of new countries than the economic conditions affecting the utilisation of the land. At the present time, Canada is the country in which a combination of these factors have been working together at full pressure towards the development of agriculture. Speculation in agricultural land is precluded by the Homestead Laws, which require occupation and

cultivation as a preliminary to a freehold title. The sale of "improved farms" is an indication of the way in which land dealing is now directed. At the present time, one of the railway companies has organised the sale to immigrants of its lands provided with the necessary buildings and stock.

With regard to the Argentine, the conditions are not generally so favourable, not through any lack of progressive policy on the part of the railway companies, but through the insufficient use made of colonisation laws. The large tracts of land held by individuals has, as we have already seen, assisted the development of the pastoral industry. With regard to wheat growing, the absence of well considered measures for assisting the colonist to become an owner of land must have retarded production. In addition, immigrants coming to the Argentine are not possessed of the means to purchase land and stock like many of the European and American immigrants entering Canada.¹ Land speculation does not conduce to the same extent to the development of the country.

The foregoing amply demonstrates that supply and demand are not the only or even the most

¹ See Appendix. It would appear that the emigration into Canada is checking agriculture in the States;

important factors in settling the world's wheat production. At present this regulator of production is more effective than in the period of low prices when wheat was extensively grown at a loss. To quote the United States Agricultural Year Book, "the farmer has become strong as a seller and able to hold his crop for fair prices." This will tend to steady prices in both directions.¹ Two factors should be mentioned which make for firmer prices. One is the better organisation of farmers' credit. In Canada, legislative action enabling banks to advance on wheat held in farmers' stores preventing the rush of wheat shipments before the close of navigation, in Argentina the building of elevators, which will enable advances on wheat deposited therein to be obtained. The other factor is the present credit famine in the financial world, which may seriously curtail the extension of railway construction. Yet another point to be remembered is the diminished output from the Balkan States as a result of the recent unfortunate war. The outstanding feature of the world's wheat supplies at the present time is the wide crop variations of the principal exporting countries. All other considerations are subject to this.

To sum up the present position of the world's

¹ If wheat prices go up farmers will grow more, and *vice versa*.

wheat supplies. Increased population has been accompanied by increased wheat acreage. The preface to the Agricultural Statistics of the Board of Agriculture for 1911, recently published, shows that comparing the aggregate of the returns of all wheat eating countries, where available, population has increased 13 per cent. since 1901 and the wheat area of the world 22.9 per cent. That these figures cannot themselves form the basis of a conclusion is fully realised by the Government statistician. Consumption of wheat per head and yield per acre, as we have seen, vary widely; an increase of population in a country where consumption of wheat *per capita* is high being of greater moment than where it is low, and equally, an increase of wheat acreage in, let us say, the United Kingdom with its average yield of thirty-one bushels per acre is of far greater importance than the same increase in one of the newer countries. The great variations in the acreage yield of the surplus-wheat-producing countries cannot fail to make the supply more unstable. In the development of American agriculture, the constant aim to make the farmer less dependent on the bulk products of agriculture and especially to find alternative crops for wheat, the sale of which depends on a limited market, has been noticed. Apart from the increased home demand for the concentrated food products in all the

producing countries which we have reviewed, there is a widespread tendency on the part of farmers to grow for export the more valuable products instead of wheat. Were it not that wheat is the most adaptable and the hardiest of cereals, the production would undoubtedly be considerably less, unless prices were to rise appreciably above the present level.

In summarising the history of wheat prices during the last thirty years, and assigning the causes of the variations, we are met with almost as great difficulties as in estimating the future. From the period '71-'74 there was a tumble of 10s. per quarter to the 45s. level of '75-'82. This may be called "the American prairie" fall; the second drop was one of 13s. from the last mentioned price to the 32s. level of '84-91. This may be called the "British-Indian" fall. The third, a fall of 9s., to the 23s. level of '94-'95; this may be characterised as the "Argentine" fall.¹ Without going further into the causes of the fall which were so much discussed at the time, we can point to two undoubted circumstances which affected the increased exports from India in the second, and those of the Argentine in the third "tumble." While in India the fall of the rupee stimulated the grain dealers to purchase corn in the country districts where the rupee still held its old purchas-

¹ Broomhall : The Corn Trade Year Book.

ing power, and sell the wheat for export on a gold basis, the spurt in Argentine exports was due to a similar cause, the financial crisis of 1890 causing an enormous depreciation in the paper currency of the Republic. All the expenses entailed in harvesting the crop were paid for in depreciated currency, the wheat being sold for gold. Both these causes for the fall in prices came at a time when, as we have already seen, the development of America's western prairies was in full swing. Though the exceptional nature of these influences on prices cannot be gainsaid, there is no guarantee that similar exceptional events might not again occur and have a similar effect. On the other hand, it does appear to be extremely improbable at this stage of the world's progress that the agricultural development of the United States will be paralleled elsewhere.

The wheat trade, like every market for primary products, is continually discounting the future. Acreage under crop and the crop prospects of the principal producing countries are followed from day to day. Stocks are known and invisible supplies estimated. To gauge the position at any time statistical information must be read in the light of the considerations already set forth and any particular circumstances of the moment. If a general conclusion may be hazarded, it would be that prices are not likely to fall below the

present level unless exceptionally good harvests occur simultaneously. Prices at the moment are not sufficiently high in themselves to stimulate production, except where high yields and low cost of production are possible. Where wheat is Hobson's choice it will be grown. When alternative uses for land become possible, it will tend to diminish till the more advanced stage of mixed farming and crop rotation obtains.

N.B.—No mention has been made of the difference in quality of wheat, as the subject is somewhat outside the scope of this book.

CHAPTER V

THE WORLD'S MEAT TRADE

The world's meat trade does not admit of so concise a summary as that of wheat and bread-stuffs. Canned products, jerked beef, hog products, live stock on the hoof, and lastly frozen and chilled beef are some of the headings under which the trade might be divided. We shall here give the greatest prominence to the frozen and chilled meat industry.

The domination of the British market in all branches with the sole exception of jerked beef, which is not shipped to the United Kingdom, is remarkable. It is doubtful whether the export of meat products and live cattle from Australasia and North and South America to all destinations other than Great Britain, and that across the political boundaries of Europe added together would aggregate Great Britain's gigantic total of £47,000,000, reached in 1911.

Before proceeding to summarise the present position it may not be unprofitable to point out some essential considerations. A shortage of meat supplies cannot be easily adjusted by increased

production. Meat, especially frozen or chilled meat, requires special transport facilities and a complex organisation to render supplies available. Natural reproduction cannot easily overtake an increasing demand. With horned stock an annual increase of 70 per cent. of the breeding stock is as high as can be relied upon in the countries from which we are at present drawing our supplies. Sheep cannot be regarded as much more prolific, the greater tendency to ailments of various kinds offsetting the higher natural increase. The enormous supplies both of beef and mutton imported into the United Kingdom have made consumers oblivious to these fundamental conditions. A shortage cannot fail to bring out the difficulty of regaining an equilibrium when once it has been disturbed.

Our brief review has shown diminished sheep flocks. Whether it be in such widely separated countries as Argentina, Russia, the United States or Canada, the cause for this decrease is the same : the plough is displacing them. New Zealand, with 24,000,000, and Uruguay with some 26,000,000 sheep are the principal exceptions. Australia's recent decline is mainly due to an unfavourable season, a reminder of the terrible drought period from which recovery has only recently been made. In spite of this latest set-back, the Commonwealth of Australia, with its 93,000,000 sheep,

easily heads the list, not only for numbers, but also for the perfection to which sheep management and wool production have attained. In Europe, during the last thirty years, there has been a very marked diminution; Germany from 19 million in 1883 to 7 $\frac{3}{4}$ million in 1907; France from 22 million in 1885 to 16 million in 1911. The same tendency is seen in Denmark and Belgium, France has supplemented her supplies by imports on the hoof from Algeria varying from 1 to 1 $\frac{1}{2}$ million sheep per annum.

Reverting to the Southern Hemisphere, New Zealand breeders have succeeded in producing a dual purpose type, resulting in a good fleece, and a good carcass. Her exports amount to no less than 25 per cent. of her total stock, some 6,000,000 carcasses a year, of which two-thirds are lamb. Though we may look for a continuance of exports on the same scale, recent advices from the Commonwealth seem to point to an extension of the dairying industry, rather than sheep farming. Australia's exports only amount to about 4 per cent. of her sheep stock; the high values ruling for merino wool at the present time encouraging the treatment of the meat industry as a by-product of wool-growing. Argentina's chief stock has been developed on the same lines as that of New Zealand—the dual purpose sheep. Though possessed of many advantages over her principal

rival, sheep management has not been brought to the same state of perfection. The exports represent approximately 7 per cent. of the total stock. In the sub-continent Uruguay and Patagonia are already making up for the deficiency of Argentine supplies. Though there are no figures showing even approximately, the number of sheep in Patagonia, the exports of wool indicate that they are steadily increasing.¹ Patagonia's exports in 1912 amounted to 294,306 carcasses, and Uruguay's 331,326, together 625,632 carcasses. Some explanation of the much greater proportion of exports to total stock in New Zealand as compared to Argentina and Australia may be given. Favourable climate together with a high level of good management and with a natural increase probably averaging about 90 per cent. are undoubtedly the principal factors. Accessibility to market is another factor, a considerable proportion of the total credited to the Argentine scarcely counting for the export demand. The rate of increase in the Republic cannot be taken as more than 70 per cent. In New South Wales in 1910, a dry season, it is not put higher than 20 per cent. These differences serve to emphasise the disadvantages where sheep breeders have their flocks distributed over wide areas.

¹ Bales of wool exported from Falkland Islands and Punta Arenas:—1909, 49,000; 1910, 58,000; 1911, 66,000.

The diminished beef supplies of Canada and the States was seen to have been caused, like that of the smaller sheep stock, by the advent of the plough. The passage already cited from the United States Year Book of Agriculture for 1909, cannot be too often quoted. "More profitable crops have made more valuable land and cheap beef is not the product of high priced land." While the competition of agriculture has diminished the cattle stock, the demands of increasing population have only been satisfied by trenching upon the breeding stock. "The Breeders' Gazette," published in Chicago, in reviewing the cattle trade during the year 1912, fully bears out this view of the position in the United States.—"The long-predicted cattle shortage passed from the theoretical into the actual stage."—"Every week's market run during 1912 was a draft on future supply."—"It so happened that during this period of scarcity, industrial conditions reflected prosperity creating heavy demands for beef in face of a limited supply." The same issue of this journal notes that thin cows had been sold for canning and that the high prices for veal had led to the slaughter of calves in thousands.

The shortage both of beef and mutton in Canada cannot be gainsaid. The position in Argentina has already been sufficiently sum-

marised, nor can large shipments from Uruguay with a cattle stock estimated at 9 million head, be looked for. The maintenance of supplies in the quantities which we have recently been receiving, even if the most optimistic view of the position be taken, appears to be precarious.

Complementary to the question of supplies is that of demand. Will the door to imports of frozen meat into Europe which up till recently has been "banged, bolted and barred" by hostile tariffs and veterinary regulations be opened sufficiently wide to admit appreciable quantities? Some progress has been made. The Italian tariff has been reduced to 12 frs.¹ and the Swiss tariff to 10 frs. per 100 kilos. Imports through France have been freed of the Inspection Tax of 1 fr. per 100 kilos. During 1912 the aggregate of all frozen meat to Europe, of which Italy and Switzerland took the largest amount, totalled 20,000 tons, showing an increase of 3,000 tons on the figures of 1911. Though Holland and Belgium are likely consumers, and both Italy and Switzerland will gradually increase their imports, undoubtedly the interest of the future lies with the attitude to be taken up by Germany. The relaxation of the duties in Germany has taken the form of allowing certain municipalities to import meat on a reduced scale of duty for a certain

¹ 100 Kilos = 220 lbs. 1 Franc = 10d.

period. The antagonism of the butchers has thus been aroused against the Municipal meat shops, adding another element of opposition to the policy supported by the agrarian party. By utilising every scrap of the less valuable parts of the carcase for sausages, meat supplies of a kind have been available. With the increasing population and the growth of luxury, it can scarcely be doubted that the policy of restricting meat imports has reached the breaking point. Though the veterinary regulations which require certain portions of the intestines to be kept for inspection on landing of an ox carcase have so far prevented beef imports, the regulations in respect of mutton are not prohibitive.

Two explanations of the small supplies both of beef and mutton on the Continent as compared to those grown in the United Kingdom may be given. The most important is the periodical outbreak of foot and mouth disease. An article by Professor Bang, of Copenhagen, which appeared in the Journal of the Board of Agriculture of November, 1912, enables us to appreciate the disastrous effects of this scourge. The losses suffered in Germany in 1892 when :

1,500,000 cattle,

2,000,000 sheep,

400,000 pigs,

were affected are estimated to have cost that coun-

try £5,000,000. An outbreak even more severe than that of 1892 occurred in Europe in 1911.

INFECTED CENTRES.

German Empire ...	37180	Sept. 15th, 1911.
Austria	111382	Oct. 11th, 1911.
Croatia and Slavonia	45562	Sept. 27th, 1911.
France	33966	Aug. — 1911.
Belgium	5225	1911.
Holland	18000	
Italy.	In the week of August 6th, 1911, 18,000 animals were attacked in addition to 107,000 animals over from previous weeks.	

Another cause is the general absence of fencing on the Continent. With increased cost of labour the tending of cattle and sheep by herdsmen becomes impracticable. Though the space occupied by fences in Great Britain is often the subject of comment by visitors, it has been the means of keeping up our stock of cattle and sheep, and of maintaining fertility. Another factor of Continental meat supplies is the striking diminution in American exports of preserved and canned meat of all kinds. An important source of supply is thereby withdrawn, making the importation of frozen meat into Europe, all the more probable.

We have already pointed out how wheat is

the pioneer crop. In the same way cattle is the pioneer animal crop. By stocking land with cattle the ground is consolidated and a firm seed bed for the better grasses is made. Districts formerly stocked by cattle are turned into sheep runs, which are often more profitable. Many stages have to be passed before the cultivation of forage plants such as lucerne which largely increases the carrying capacity of the land can be reached. We must therefore look to the waste spaces of the earth for an increase in our meat supplies. A territory sufficiently extensive to tempt development by those possessed of ample capital. No better barometer of the development of the cattle industry could be named than the increase in fencing as the Argentine imports of wire fencing sufficiently prove.¹ Capital is needed not only for this purpose, but also because losses, which would ruin the small man, must occur in the early stages. The capital locked up in breeding cows, and young stock, where steers are kept for three or four years before they are marketed, may easily amount to many thousands of pounds. Hence the tendency amongst farmers, seen in all countries to buy young cattle either to sell as "stores," or for

¹ Imports of wire fencing into the Argentine for the years:—1900, 36,567 tons; 1905, 66,876 tons; 1910, 91,309 tons.

finishing. Breeding is neglected. On the Continent the use of cattle for draught purposes is a way of getting some return on the capital invested, while the cattle are growing.

With the exception of Australia, which we have already dealt with, the most promising areas for the cattle industry are Rhodesia and the southern portion of Brazil.¹ Mexico also has possibilities, but this may be looked upon as a reserve supply for the United States. Neither of these countries can expect their first exports to be frozen beef. They must be content to begin with such products as tinned meat and beef extract. In both countries there are difficulties to be overcome, but in neither do they appear insurmountable.

It would appear that one of the first results of the demand for beef cattle is likely to be an increased call for bulls of the beef breeds from British live stock breeders. Each breed has its supporters—Shorthorns or Durhams as they are often called abroad, Herefords, Aberdeen Angus, and Devons. In the Argentine, Shorthorns are generally the favourites, though it may be mentioned that the highest price recorded for bullocks was paid for five Hereford steers at the Buenos Ayres Show in

¹ British East Africa should also be mentioned. Some Imports of beef have already reached us from Venezuela.

July, 1910; £1,004 per steer or 18d. per ounce! ¹ The relative advantages of Shorthorn v. Hereford are hotly contested in Queensland. The following quotation is from the Queensland Government's publication on cattle:—

“Herefords are a hardy healthy frugal type of cattle and are about the quickest recoverers of any breed after a spell of adverse conditions. It is because of this fact that they are becoming more popular with breeders and as a consequence their numbers show an appreciable increase every year.”

The recent considerable exports of Hereford bulls to the States after a lapse of twelve years, shows that attention is again being directed to the beef breeds.

The present position of our Overseas meat supplies must be one of considerable anxiety for the consumer. Even the supplies of meat received from the Argentine may be said to engender a feeling of security which the position by no means warrants. The price of beef in Buenos Ayres itself is at the moment higher than that ruling in London! ² With mutton the consumer's

¹ The purchase was made for one of the Freezing Companies.

² 5½d. per lb. for meat not so good as that exported. “La Prensa” a leading daily, recently discussed the Live Stock shortage, and notes the introduction into some of the rural markets in the Province of Buenos Ayres of horseflesh for local consumption.

outlook is not quite so gloomy, but both with beef and mutton the demands of Europe and the wants of Canada, and the United States, are unknown factors which must be kept in mind.¹ It should also be remembered that imports of frozen meat to Europe are more likely to take the form of mutton than of beef, and that the demands of America and Canada will probably be met by mutton imports from Australasia. In the United Kingdom and Ireland itself indications point to a marked shortage of sheep and cattle. Perhaps the stimulation of pig breeding, which present prices is bringing about, will, to some extent, make up for the diminished supplies of beef and mutton, but here again a reservation is necessary, for skim milk instead of being utilised as pig food is treated for shipment as casein for use in manufacture.²

Dealing with prices of meat, perhaps the most noticeable feature of recent years, has been the way in which home-bred beef and mutton have consistently averaged considerably higher prices than imported supplies. The recent rise in price of home-killed beef, in face of the ample supplies reaching us from the Argentine can partly be

¹ Since the above was written *The Times*, of May 17th, reported the landing of a large shipment of mutton and lamb from Australia at San Francisco and gave particulars of plans for further shipments.

² In Canada and New Zealand.

explained by the negligible amount of American chilled beef now exported. In view of the high point of excellence to which Argentine cattle have been graded up, it appears anomalous that North American chilled beef has commanded considerably higher prices than Argentine beef. The explanation is to be found partly in the more favourable conditions under which the comparatively short transportation is conducted, and partly to the fact that the American stockbreeder, with a twenty years' start has produced a more perfectly developed steer. The second explanation is the complete cessation of imports on the hoof from North America. "Port Killed" beef was the most formidable competitor of "Home grown." The possibility of this trade being reopened is so remote that the sale of the site occupied by Foreign Cattle Wharfs at Deptford, belonging to the City Corporation has been proposed.

Reverting to meat prices, it is doubtful whether the consumer, at home has felt the full effect of the increased wholesale price now ruling. A confirmation of this statement may be given. A company engaged in importing beef, and selling wholesale, is able to show increased profits while one exclusively engaged in distribution was unfavourably affected.

It may be objected that the present rise in the

price of meat is due to special and transitory causes. The drought of 1911 caused a falling off in the sheep and cattle stock of the United Kingdom, and the outbreak of foot and mouth disease in 1912 dislocated the meat trade. On the Continent the outbreak of foot and mouth disease in 1911 had disastrous effects. These unfortunate occurrences would not of themselves have been sufficient to cause a considerable rise in price, had they not come at a time when imports from the North American Continent had so largely fallen off.

Amongst much that is alarming to meat consumers, there appear one or two considerations which to some extent offset the tendency to higher prices. The present high price ruling for hides, included in what in England is known as the "fifth quarter," reduces the net cost of the carcass. In fact the high prices ruling for leather should give additional weight to any well-considered measures taken with a view to preventing the indiscriminate slaughter of young calves in the United Kingdom.¹ In much the same way the better price of wool should stimulate the breeding of sheep. Though Co-operation is somewhat

¹ See Board of Agriculture Journal, Nov., 1912. In the issue of August, 1911, a correspondent shows that over one million calves are wasted yearly, almost exactly the number required to produce the beef which we annually import.

outside our subject it may be stated without fear of contradiction that there is no agricultural industry in the United Kingdom more in need of re-organisation than the preparing and selling of wool. It is hard to see how this could be effected except by means of Co-operation amongst farmers.

Home-grown meat at any rate for the present has little to fear from foreign competition. An adjustment between the conflicting interests of dairying and meat production is the most urgent need of the moment. Early maturity of cattle and sheep can be practised to greater advantage at home than abroad, perhaps we may go so far as to say that with the exception of lamb-raising, it is not in vogue abroad.

The Times of June 9th, 1913, reports shipments to date for current year from the Argentine:—

Beef quarters.—1,621,000, January 1st to June 5th, 1912; 1,930,000, June 1st to June 5th, 1913. Increase this year to date 309,000 quarters.

Mutton and Lamb carcasses.—1,471,000, January 1st to June 5th, 1912; 1,225,000, January 1st to June 5th, 1913. Decrease this year to date 246,000 carcasses.

The increase of beef shipments is due to special causes.

Particulars relating to the Dairy Industry of Various Countries.

DENMARK.

Co-operative Dairies	-	1,188
Others, about	-	250

SIBERIA.

Tomsk—Butter Factories	-	2,294
Branches	-	1,950

CANADA.

	Cheese Factories.	Creameries.	Combined Factories.
Ontario	1083	112	39
Quebec	1094	548	523

Total in Dominion	2291	811	570
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NEW ZEALAND.

Creameries	-	172	Private ditto. 216
Cheese Factories	-	224	17

Some Creameries have as many as thirty Skimming Stations attached to them where the farmers' milk is separated.

AUSTRALIAN BUTTER FACTORIES.

New South Wales	-	-	181
Victoria	-	-	82
South Australia	-	-	52
West Australia	-	-	3
Tasmania	-	-	26

344

VICTORIA.

Cream Separators in use in 1905	-	-	15,710
" " " 1910	-	-	27,307

NEW SOUTH WALES, 1910.

Butter made on Farms	-	-	5,126,000 lbs.
" " in Factories	-	-	71,498,000 "
Milk Produced	-	-	235,577,000 galls.
" Separated on Farms	-	-	176,838,000 "
Cheese made on Farms	-	-	1,298,000 lbs.
" " in Factories	-	-	3,892,000 "
Bacon and Ham cured on Farms	-	-	2,400,000 "
" " " in Factories	-	-	10,183,000 "

CHAPTER VI

DAIRY PRODUCE, PIG-BREEDING AND FEEDING-STUFFS

DAIRYING may take the form either of milk, butter or cheese. Milk, owing to its bulk and perishability, is not to a large degree a matter of international trade. Indirectly it affects our present point of view. The growth of population is constantly increasing milk consumption and tending to diminish the export of dairy produce. The sale of milk precludes pig-breeding, that important complementary industry of butter and cheese-making.

Butter-making is the most highly specialised of any agricultural industry. Though the export of chilled or frozen meat involves an extensive organisation in which every part of the animal is made use of, the stock-breeder's share of the business ends with the sale of his stock. With dairying the producer is in constant touch with the creamery whose interest it is to assist the farmer to increase his output. As an educative influence in agriculture, butter-making is unapproached. Certain common features wherever

the industry is conducted are noticeable. Butter manufacture must be conducted on wholesale methods. Whether the farmer separates the cream and keeps the skim milk as in many districts in Australia and Canada, or sends the fresh milk to the creamery as in Denmark or Ireland, butter, the finished article, is produced on a wholesale scale. The increased output of butter brought about by co-operative dairies cannot be better illustrated than by quoting the case of Ireland, where the increased production during recent years under the stimulus of Sir Horace Plunkett's organisation is well known.

Though the cheese-making is not to the same extent dependent on a system of factory production, it is extensively organised on similar lines. The review of American agriculture showed that Canadian cheese successfully competed with the American product, as a result of better organisation under the supervision of the Canadian Government. Hog products, to adopt the American term, can be so conveniently combined with the production of butter and cheese that the subject has been deferred till this chapter, instead of being included under meat.

The fluctuations in the price of pigs is proverbial. A constant see-saw between plentiful supply and low prices, and a dearth accompanied by high prices occurs. Several causes account for

this. In Great Britain as elsewhere pigs are more liable to disease than any domestic animal. A cause of the constantly recurring over-production is the much quicker rate of natural increase in swine than with cattle and sheep. When feeding-stuffs are obtainable at prices which enable bacon to be produced at a profit increased pig-breeding results. On the other hand, a rise in feeding-stuffs unaccompanied by a corresponding rise in bacon instantly checks production.

Bacon and ham, like butter, must be prepared for market on a large scale. Uniform quality implies grading and uniform treatment in curing. Though "home cured" may be better, bulk supply can only be produced by a bacon factory.

The recent substantial increase in the price of butter is partly due to the drought experienced in Europe in 1911. The diminished supplies from Europe in that year were made up by increased receipts from Australia, the total imports from all sources falling off by only some 20,000 cwt. compared to 1910. Imports from Europe in 1912 recovered to the total received in 1910, but chiefly owing to the considerably diminished receipts from Australia the returns show a falling off of approximately 300,000 cwt. as compared to 1911. For the current year up to the end of April there is a falling off of 60,000 cwt. It

cannot be said that the shortage in a total of 4,300,000 cwt. imported has been substantial. The considerable rise in values recorded is an apt illustration of the economic principle that when demand overtakes supply, prices tend to register an increase, apparently out of all proportion to the actual shortage.

Though butter at home is still produced for local wants and made on the farm, it is clear that to compete with imported supplies it must be produced wholesale through the agency of a creamery. The movement for creameries is on the increase, and in districts which are not devoted to milk supply they would be of great value. One or two bacon factories have been erected thereby enabling dairy farmers to market their pigs, fed from the waste products of the dairy, to the best advantage. With regard to the future of dairy produce, the increased demands of Canada for butter from Australasia and that of the consuming centres of Europe for Siberian and Danish butter are likely to keep prices firm. Through the agency of a creamery the sale of Home made butter direct to the consumer becomes possible, as the considerable quantities sent through the post from the Irish creameries show. Under such conditions the best home butter is likely to command substantial prices. The extensive use of butter substitutes which

have now been brought to a high degree of perfection, and which has received an impetus by the high prices of butter, is likely to affect the price of farm-house butter coming irregularly to the market.

The particulars given on the opposite page showing the large extent to which the movement for creameries, often worked on co-operative lines, has developed in the principal countries exporting butter, will, it is hoped, not be lost on home producers.

So far an all important matter to the producer of dairy produce and meat, and indirectly to the wheat-consuming countries, has not been treated in an adequate manner. In the review of American agriculture, mention has been made of the exports of feeding-stuffs which it was complained, enabled the Dutch and Danish producers of butter, cheese, and bacon, to compete with the American grower of the same foodstuffs. In a brief notice of the dairy exports from Denmark and Holland mention has been made of the large quantities of feeding-stuffs which provide these industries with raw material for their finished products. Perhaps one of the most remarkable novelties of the world's agricultural exports of recent years has been the shipment of Soya beans from Manchuria and the large increase of grain exports from India. The sunflower-seed cake

sent from Russia to Denmark and Holland is another instance of the same kind.

The demand for dairy and meat products in Europe and the falling off of American maize shipments have stimulated the production of feeding-stuffs in other countries. Exports of maize, oats, barley, beans, linseed, peas, cake, cotton and rape seed from Argentina, India and Russia have been on a large scale. We have already noticed that the production of feeding-stuffs is one of the alternatives open to agriculturists in most countries. With higher prices ruling for meat and dairy produce it must be expected that the growing demand for feeding-stuffs will tend to curtail wheat growing abroad.

The official statistics relating to brewing and distilling show the large quantities of malt and corn employed. Though the malt and corn used in breweries has diminished some seven million bushels since 1899, the returns for 1911 show that fifty-one million bushels were employed in addition to some fourteen million bushels used for distilling. Brewers' grains are largely used as a feeding-stuff for dairy cows. The practice of drying grains by a new process has made these bi-products of the breweries more easy of conveyance, thus opening out a wider market. The imports of feeding-stuffs should not make us lose sight of the serious disadvantage to which the

home producer has been subjected by the decline of the old grist-mills which formed so important an adjunct of our cereal cultivation prior to the fall in wheat prices. The changes brought about in milling by the introduction of the roller mill, together with the increased imports of wheat, have resulted in a concentration of the milling industry at the ports. The Danish and the Dutch dairymen, assisted by cheap sea transport, have been able to successfully compete for corn offals from our mills. The absence of cheap bran and sharps is severely felt by the cottager and small farmer. It is the feeding-stuff with which he habitually feeds his pig and his poultry.¹

Throughout this book reference has been made to the urgent necessity of bringing up more calves on dairy farms. The waste of our meat supplies entailed by sending them to market when less than a week old cannot be excused on the ground that the bringing up of calves would entail a large consumption of milk. Of recent years carefully prepared calf meals have been put on the market making it possible to bring up calves with a minimum of milk. It is to be hoped that dairy farmers will avail themselves of these milk substitutes. Reverting to meat production, the possibilities of early maturity and rapid fattening

¹ Exports of bran, pollard, and other offals amount annually to about five million cwt.

which the present prices for beef render profitable should largely increase the demand for feeding-stuffs of all kinds. The table on the opposite page shows the large quantities of feeding-stuffs annually imported.

Imports of Oil Cakes, Seeds, etc., into United Kingdom, }
 and }
 Quantities of Malt and Corn used in Breweries and Distilleries, }
 1908—1911.

Year.	Oil Cake.				Linseed.	Cotton Seed.	Rape Seed.	Other Cattle Foods.	Barley.	Oats.	Maize.	Beans.	Peas.	Distilleries U.K.		
	Linseed Cake.	Cotton-seed Cake.	Other Kinds.	Total of Cakes.										Malt and Corn used in Breweries United Kingdom.	Malt used.	Unmalted Grain.
	Tons.	Tons.	Tons.	Tons.	Qrs.	Tons.	Qrs.	Tons.	Cwts.	Cwts.	Cwts.	Cwts.	Cwts.	Qrs.	Qrs.	
1908	123,168	165,050	44,267	332,485	2,067,195	616,923	147,490	34,888	18,137,200	14,269,250	33,841,030	1,043,997	1,060,999	51,076,000	1,019,982	1,091,143
1909	113,187	164,642	50,934	328,763	1,697,428	600,377	139,703	57,747	21,556,470	17,835,998	39,362,605	2,171,230	1,314,149	49,688,000	1,120,946	1,145,355
1910	104,210	157,277	55,579	317,066	1,478,259	690,171	251,324	52,081	18,231,500	17,495,014	37,021,192	849,082	1,591,111	51,076,000	853,589	971,582
1911	52,819	198,027	86,360	338,226	1,393,874	596,959	232,199	53,236	24,545,420	18,273,037	38,602,330	1,029,101	2,196,094	51,759,000	871,112	1,004,557

CHAPTER VII

BRITISH AGRICULTURE

THE shortage both of meat supplies and, to a lesser degree, of dairy produce abroad brings British Agriculture into prominence. For thirty years we have become accustomed to look upon our Oversea supplies of staple foodstuffs as a foundation of our industrial system. The writer remembers reading a speech,¹ made some years ago by Mr. Arthur Balfour, in which, while expressing regret at the unequal competition enforced upon our agriculturists by imports of foreign foodstuffs, expressed the opinion that agricultural prosperity and industrial development were alternatives. We had chosen the latter. The re-establishment of agriculture, however much to be desired, could only be obtained by a reversal of the whole trend of our economic organisation. At the time Mr. Balfour's summary of the position seemed incontrovertible. In view of the changed circumstances of to-day,

¹ The author has been unable to find the speech in question. The impression made is so distinct that he has felt justified in referring to it.

it would not be too much to say that the increased production of home-grown foodstuffs is a matter of the first importance to our industrial population. Perhaps the greater prominence given to imported products, partly due to the fact that statistics relating to them are constantly before the public, have obscured the importance of our own agricultural produce. True, in breadstuffs the proportion is small: with meat, though the exact figures cannot be ascertained, home-grown supplies account for at least 60 per cent. of our total consumption. During the hard times through which agriculture has passed, the industry has followed the line of the least resistance: Milk production, the only rural industry free from foreign competition, has enormously increased. The necessity of curtailing the labour bill, together with the unremunerative nature of cereal cultivation, have resulted in a large increase of land under grass.

The urgent demand for the increased production of foodstuffs from our own agriculture can only be considered with the present position as the starting point. As at present conducted, the milk trade is often in direct antagonism to the production of meat: many calves are slaughtered practically as soon as they are born. Cows in their prime are sent to the butcher by the suburban cowkeeper when they have been milked dry.

It would be unjust to blame our agriculture for these and other defects. The industry has got along by the efforts of individuals, unassisted by the use of new capital or by the State in such matters as education, which has been directed from the standpoint of the town dweller. The criticism of British agricultural methods have often been unwarranted. In spite of the losses of capital, suffered both by landlords and tenants, many proofs of the high excellence of our agriculture can be brought forward. A comparison is frequently made with the specialised industries of such countries as Denmark and Holland, forgetting that though the results obtained are indeed remarkable, the small area of these countries only serves to emphasise the high level of British agriculture when compared to farming practice in the Temperate Belt as a whole. In fact, the total agricultural output obtained from the limited area of the United Kingdom and Ireland is often a matter of admiration to Overseas producers.

The absence of extreme climatic variations is one advantage of our home producers: the droughts occurring from time to time are inconsiderable compared to those frequently experienced in the interior of America and Europe, remote from the equalising and rain-bringing influence of the sea. Frost in such widely

separated countries as India, the Argentine, and Canada is a frequent cause of damage to wheat. Locusts, though recently brought under some measure of control, have often devastated extensive areas in the Argentine. Hail is so frequently a cause of disaster abroad that crops in the Argentine and also in Europe are generally insured. The higher yield of cereal crops in Great Britain compared to foreign countries is thus partly due to climatic advantages and immunity from insect plagues. It is also the result of the better working of the soil and the liberal use of manures. Intensive culture, using the term in the broad sense, is a matter of necessity where the charges on land, whether taking the form of local or State taxes, are high. The growing of cereals is part of a system of crop rotation, each crop being partially or wholly utilised for stock. The joint effect of a favourable climate and careful husbandry results in the high percentage of natural increase obtained from both cattle and sheep. The estimated percentage of increase from breeding ewes and cows in the countries from which we draw our Oversea supplies of mutton and beef have already been mentioned. At home it has been estimated as averaging 112 per cent. for sheep and 90 per cent. for cattle. These figures as to natural increase show that our pastoral industry is better capable of meeting the

shortage of supplies than that of the countries on which we are at present relying for our beef and mutton.

The same is also true of our cereal production. The statistics of foreign countries show that there are only some three or four wheat-producing countries which exceed the moderate average of 20 bushels of wheat to the acre. As we have already seen, with the exception of Canada, the yield is considerably less in the chief sources of supply. The conclusion with regard to sheep and cattle, therefore, applies with equal force to that of cereal production. Undoubtedly an extension of cereal production at home is the key to an increased output of meat and dairy produce—given the incentive for the former, the two latter must necessarily follow as a matter of course. Crop rotation assures the growing of at least one crop of wheat in the series, thus an increased acreage under the plough means an increase in wheat production, not grown only for the profit of the one crop, but as part of the system. The growing of sugar beet has been urged as a means of bringing more land under the plough, and has much to recommend it from this standpoint.

For the consumer, home-grown foodstuffs, if forthcoming in adequate quantities, are more desirable than imported supplies. They are

produced throughout the country. Practically no cost for transportation is entailed in reaching the market. The tendency of all imported products to get into the hands of a few large dealers is avoided. With meat, there is a constant succession of cattle and sheep coming into the markets. The first grass-fed beef from the earliest pastures is succeeded by other supplies when grass becomes generally plentiful. In the late autumn, winter and spring stall-fed cattle supply the markets until the first grass-fed beef again comes in. In the same way the early lamb crop from certain districts is followed by supplies from all parts, and during the winter the sheep and lambs fed on the root crop come into the market. The increased output of home killed meat would also tend to assure a cheap supply throughout the country of the less costly cuts for those classes whose means do not allow them to purchase the more expensive joints.¹ Industries which use leather would also be certain of a plentiful supply of their raw material.

It would be outside the scope of this book to suggest the means by which a larger production of home-grown foodstuffs could be brought about. Undoubtedly the higher prices of meat should tend to increase production, though looked

¹ Also the etceteras, heart, liver, etc., etc.

at from another point of view the higher values tempt the farmer to slaughter breeding stock and young cattle before they are ripe. Nor will the higher prices for wheat received in recent years act as a sufficient inducement to increased arable cultivation. Unless agricultural production is directly stimulated by the action of the State in some form, we cannot expect an immediate increase in the production of home-grown food-stuffs, or one adequate to the urgent needs of the present situation.

The two outstanding features of British agriculture in recent years have been the large areas of land coming into the market, a large proportion of which has passed into the hands of occupying owners. The other feature being the Small Holdings movement.

The Small Holdings Act, under which 154,977 acres have been acquired, may be summarised as having created two classes of tenants. The first class are those who have availed themselves of the Act to become tenants of accommodation plots of land, and the other class those who have become tenants with the definite object of making a livelihood out of their holdings. The farming community as a whole welcomes the advent of new producers in spite of the disturbance of many sitting tenants which the Act has entailed. Though some of the small holders have begun

by growing the same crops as the larger farmers, it is clear that success does not lie along that road. The reports of the Small Holdings Commissioners bear witness to the economic truth that it is impossible to make an adequate profit out of a small turnover. "The Reports on Successful Small Holdings," in the Commissioners' latest publication, shows that fruit, bulbs, market garden produce, and with respect to the maximum holdings under the Act, dairy produce, run in conjunction with market garden produce, are the first to succeed. It is obvious that the output of the small holdings will not compete with the larger farms. The economic unit of production of the staple products of agriculture is the farm, varying in size, according to the district. In estimating the home output of staple food-stuffs we must consider the land taken for smallholdings, small though it may be, as to some extent curtailing production. It may be added that in France which is frequently quoted as an instance of successful smallholdings, by far the larger proportion are situated in the wine growing or other suitable districts, and not in the areas mainly devoted to the production of staple food products.

If it is not too great a presumption to imagine a national agricultural policy perhaps a few suggestions as to its objective may not be out of place.

The danger of disturbing the particular industry suited to each district should be guarded against. No one line of development can apply to the country as a whole. To be successful the measures taken to stimulate production must carry the concurrence of well-informed local opinion. It should not be impossible to organise our production of home grown food-stuffs by methods which should ensure to all classes of rural workers a better outlook, and at the same time to increase the supplies of those food products of which our consumers are so much in need. With a policy of development suited to each district fairly on the way agriculture may be left to adjust itself to the new order of things.

CHAPTER VIII

CONCLUSION

GOLD AND PRICES

PERHAPS the most serious criticism to which the previous chapters may be subjected is that of economists who hold that the rise in prices of commodities is due to the increased production of gold. Suppose, they say, that a mountain of gold were discovered, mined and turned into currency, goods of all kinds would go up in price. In other words, the purchasing power of gold would diminish. These economists point out that during the last twenty years gold in enormous quantities has been taken from the earth, and trace the rise in prices to this cause, rather than supply and demand, increased cost of production, etc., etc.¹

It would lead us too far from our subject to adequately discuss this theory. It is generally admitted that gold production has some influence on prices, and at the same time the champions

¹ "Gold and Prices," by Professor Ashley, *is. net*, sets forth the gold theory. An article by Mr. T. A. Hobson in the "Contemporary" of October, 1912, states the case against it.

of the theory agree that supply and demand are concurrent factors. We will not attempt to determine whether increased gold production has contributed to the rise in wheat, meat or dairy produce. If the extensive change taking place in the markets and production of these staple food stuffs, which these pages have shown, is accepted as a sufficient explanation, we have scarcely any need of going beyond them.

FREIGHTS AND PRICES

Another omission is the effect of freights on prices. Undoubtedly, during the seventies and eighties cheap freights were the primary cause of lower prices. The "natural protection" assured to our home producers by the cost of transportation on imported food supplies was one of the arguments employed for the repeal of the Corn Laws. Mr. J. Caird, writing as recently as 1880, expressed the opinion that the cost of wheat carriage from abroad would not fall below 30s. per ton! As an instance of the contrary view an attempt to attribute to cheaper freights the main portion of the fall in wheat from 1870 to 1890 was conclusively proved to have been without foundation.¹

¹ The Corn Trade Year Book, 1901-2, Geo. S. Broomhall, p. xiii.

Dealing with the cost of wheat transportation the falling off in American exports, and, consequently, the larger proportion of our wheat supplies reaching us from more distant sources of supply, is a factor which may, at any time, have an important effect on prices. An article appearing in the United States Agricultural Year Book of 1906 discussed this question. The mean annual freights from different wheat exporters to the United Kingdom was given as follows :

	Price per Bushel.
From Canada	2d.
„ U.S.A., Atlantic and other Ports	2½d.
„ Russia and Black Sea Ports	3½d.
„ Roumania	3½d.
„ India	4½d.
„ Argentina	5½d.
„ Australia	7d.
„ U.S.A. Pacific Ports ..	8½d.

It is obvious that the total cost of sea freight of Europe's wheat imports, at the moment the previous inland freight is not under consideration, must have considerably increased as a result of the larger quantities coming from Argentina and other distant sources of supply. The point to determine is to what degree the price

in European markets is affected by the costs incurred by the shipper. Two views of the effects of higher average freight costs may be stated as a dilemma. If the cost of freight is deducted from the price paid to the producer, the smaller net return received for his crop tends to deter him from growing wheat and other bulk products. If, on the other hand, the freight is added to the price, the average cost of imported wheat supplies is increased. During the last eighteen months freights have ruled high, in many cases quite 50 per cent. above the normal. Without hazarding an opinion whether these high rates will be maintained, it may not be out of place to point to higher wages and increased cost of fuel, which, on the one hand, tend to keep up freights, and on the other to the economies of transportation brought about by the larger ships now employed, which tend to reduce them. It should be remembered that shipowners can always lay up tonnage when freights are unremunerative, and for this reason it would appear that the tendency towards higher freights is likely to be of a permanent nature. With meat and dairy products the freight-factor is not likely to be important.

FOOD IMPORTS OF OTHER COUNTRIES

Great Britain depends more than any other country on imported food supplies ; during the last thirty years every exporting country has looked to us for their market. Contrasting the sea-borne imports of food supplies with those that reach us from the interior of Europe, we cannot fail to be struck with the difference in the proportion of the total production which is marketed here. Whereas up to a year ago practically the entire exports of Australia and New Zealand butter have been sent to Great Britain, the supplies reaching us from Russia, most of which comes from Siberia, account for only about a quarter of Russia's exports.

In looking to the future it must be expected that the surplus food supplies of the exporting countries will be diverted to other markets to a greater degree than in the past. Advantageous as the concentration of food supplies from all over the world has been to our consumers in the past, it should not be forgotten that it has been the constant object of the producing countries to create other markets for their products. Thus, New Zealand and Australia have built up a considerable trade in frozen meat with the Philippines, and it is significant that the shortage of beef in Queensland, due to the recent drought, has

resulted in a proportionately much larger decrease in exports to Great Britain than to the Phillipines. Once a special trade is created, exporters have naturally preferred to keep that trade well supplied instead of shipping their available produce to Great Britain, where they would have to compete with meat from every part of the world. We must expect to see a considerable trade built up between Australasia and the west coast of Canada, certainly in dairy products, and probably also in mutton and lamb. Though the effects of the Panama Canal, when completed, on the world's trade routes cannot be foretold, it has been suggested that the new route will enable the food products of Australasia to be shipped to Eastern Canada. Mr. Foster, the Canadian Minister for Commerce, who was the author of the successful trade arrangement arrived at between Canada and the West Indies, is at present in New Zealand. His visit will, no doubt, lead to an increase of foodstuffs imports into Canada and a corresponding increase of Canadian manufactured goods into New Zealand. Home producers should keep themselves well informed of the Canadian and American demand for Australasian meat and dairy produce, as it is likely to have an important effect on home markets.

EXTENSIVE & INTENSIVE FARMING

It may be objected that in forecasting the future of Overseas' supplies no consideration has been given to increased production likely to result from *extensive* cultivation giving place to *intensive* methods, nor to the effects of irrigation, drainage, and reclamation. The factors making for extensive cultivation abroad as well as the results of farming under such conditions are not generally understood. We often read that "the exhaustion of virgin soils" is the primary cause of the increase in the price of wheat. This explanation contains an element of truth, but one which has been much exaggerated. The poor crops grown on land which has been continuously employed for wheat are due more to insufficient cultivation than to soil exhaustion. The results obtained at Rothamstead, where wheat has been grown on one plot continuously for nearly fifty years without manure, and the annual results carefully tabulated show an average yield almost equal to that obtained in the United States. So far from virgin soil being of advantage, the difficulty of getting a good tilth, an even seed distribution and a firm seed bed in the freshly broken prairie is a distinct handicap, and not till land has been under the plough for two

years or more is the advantage of virgin soil apparent.

Extensive and intensive farming may both be economic. Where land is cheap the cost of equipping a farm with machinery for ploughing, reaping, etc., looms larger than the cost of the land. The farmer's object is to take as much land as he can equip. Where the charges on land are high, on the other hand, careful cultivation and manuring are of the first importance. The foregoing especially applies to the production of the lower priced agricultural products, such as wheat. Where a specialised agricultural industry, such as fruit, butter or cheese, is carried on, the necessity of producing the best quality restricts extensive farming.

While land which can easily be brought under the plough is available and can be made to produce fair crops it is improbable that there will be a demand for higher priced irrigated or reclaimed land except for special purposes. With a settled agricultural policy at home considerable sums would no doubt be spent on land improvements as in the middle of last century, and these would result in increased home production of foodstuffs. It is not probable that there will be any considerable increased production abroad from irrigation, reclamation or intensive cultivation in the immediate future. It should also be remem-

bered that mixed farming, the first stage of intensive cultivation, means the output of a mixed product, and hence the diminished production of the crop formerly grown.

CONTRAST OF FARM AND FACTORY

Though the foregoing chapters have shown a shortage of meat and to a lesser degree of dairy produce, the author does not suppose that if this book falls into the hands of a town dweller, he would be in the slightest degree perturbed. His experience is limited to town life and factory output. Over-production is met by short time, till surplus stocks have been absorbed or trade has revived. Shortage is made good by increased supplies of raw material and overtime. Nature does not work overtime. The advice given to the exuberant financier "to think slowly in millions" might be paralleled by that "to think slowly in agriculture." We are reminded of the story told of the American visitor to Oxford, who admiring the well-kept turf of the College quadrangles, and intending on his return home to make his own lawn as good or better, asked the gardener how it was done. "You mows it and you rolls it for three hundred years and then you gets it like this 'ere," was the crushing reply.

Perhaps some of the causes underlying the

slow rate at which an adjustment between the supply and demand of agricultural products can be looked for is necessary.

First, the training of the agricultural labourer. The essential difference between a good factory hand and a good farm hand is the comparative absence in agriculture of specialised labour. A good farm hand must be a good all-round man. The yearly cycle of the seasons involve a variety of knowledge and a wide experience. He is working hand in hand with nature. A skilled agricultural population cannot be hastily improvised. From this point of view the emigration of skilled agricultural labourers is doubly to be regretted. Not only is their skilled labour lost to us at a time when a proportion at any rate of agricultural products can be profitably grown at home, but the knowledge which enables them to get employment at home is a handicap in the new countries to which they emigrate, where the conditions of agriculture are so different to those with which they have been accustomed. It has been the boast of our nation that we have peopled wide areas beyond the seas. The successful colonist has been he who has emigrated, as a young man and found it easy to adapt himself to the new conditions. The movement to set up training schools in this country for the emigrant, which has been welcomed by the representatives of the

principal Colonies, shows the need of some preliminary training. The stream of emigration now taking place to countries where the cost of living is considerably higher than at home, and where the main agricultural exports are bulk products, is somewhat hard to explain unless it be that popular movements are often "a day behind the fair."

In discussing the question of emigration we have wandered somewhat from the causes which account for the want of adaptability in agricultural production. One set of causes may be traced to the conditions under which agriculture is carried on. As we have seen in the case of the United States, over-production could not be easily controlled. The unit of production in agriculture is the farm, a small unit compared to the factory. Each farmer is trying to work out his own salvation. A shop can be locked up and machinery stopped when prices are unprofitable, while in agriculture adjustment to new conditions must be slow. To cease cultivation entails greater loss than to continue it, even though prices of produce do not allow of a profit. When times change for the better the farmer's knowledge of the forces at the back of market prices is not sufficiently wide-reaching to enable him to estimate the extent of the change. Given the will to increase production by intensive farming the uncertainty

of seasons makes him hesitate to incur extra expense in labour or manures. In brief, unlike the factory, the factors are not to the same degree under control. With all the improvements of modern machinery and modern science, agricultural production has not and cannot make the same progress as factory output. This accounts for the lower money wages paid to agricultural labourers,¹ though the compensations of healthy surroundings, cheaper housing accommodation, full work and supplies of garden and other produce at nominal cost must be borne in mind. As an instance of the means by which larger production may be brought about, the increased yield of wheat which has been recorded in the United States, due to the introduction of improved varieties, is the outcome of the botanists' work rather than to better methods of cultivation. In forecasting the future we can at most only rely on a very gradual increased production from a given area. The grading up of agricultural production will naturally vary in different countries, but taking the world as a whole it is by no means likely to be rapid.

¹ The Census of Production, which classifies employment according to the net output per head of employees, should afford an interesting basis of comparison between the output of the factory hand and the agricultural labourer.

CONCLUSION

IN conclusion the demand for home-grown food-stuffs makes "The Farmer's Outlook" a more promising one than for many years past. The Agricultural Industry should bring home to the industrial population that their interests as well as the well-being of all rural workers lies in the Development of British Agriculture. If Public Opinion in the United States,¹ which is still able to send us foodstuffs in considerable quantities, is seriously concerned as to the future of food supplies, surely it is time that we were up and doing. Our countryside can still boast sturdy rural workers of all classes. Once convinced that the period of apathy and neglect has passed away a new feeling of confidence and security will arise, resulting in a largely increased supply of food-stuffs for the Nation.

¹ "The Rural Life Problem of the United States," by Sir Horace Plunkett, should be widely read. The book covers a far wider field than the title suggests.

APPENDIX I

Extracts from two Articles published in *The Times* of March 21 and 22, 1913. Reprinted by permission.

AGRICULTURE IN THE UNITED STATES.

A COMMISSION TO VISIT EUROPE.

Great interest is felt in the announcement reported in a recent telegram that a large American country life Commission will next summer visit Europe and Ireland. The terms of reference under which the Commission will work are as follows :—

To inquire into the business organisations of agriculture in Europe. To examine the methods employed by progressive agricultural communities in production and marketing, and in the financing of both operations, noting—(a) the parts played respectively in the promotion of agriculture by Governments and by voluntary organisations of the agricultural classes ; (b) the application of the co-operative system to agricultural production, distribution, and finance ; (c) the effect of co-operative action upon social conditions in rural communities ; (d) the relation of the cost of living to the organisation of the food-producing classes.

After showing the change in public opinion of which this Commission is the outcome, the article continues :

From the broad national point of view the need for rural reform is perhaps even more urgent than the need for all that commonly goes by the name of social and industrial reform. It is, at any rate, the reform in which, for obvious reasons, the outside world, and especially the English-speaking races, is most closely interested. The total increase in population was during the last decade 21 per cent. ; but while the urban population grew by 34·8 per cent., the rural community grew by only 11·2 per cent. The showing of the countryside would be even worse were it not for the Far West, where the era of colonisation has not yet closed. In Iowa, Missouri, and some of the States of the Middle West, the agricultural stronghold of the country, the rural population has actually dwindled. In New England and the middle Atlantic States there has been practically no growth of rural communities to compensate for an urban industrial growth that has been mainly due to an influx of socially undesirable aliens. Had the average of agricultural productivity increased these statistics would lose some of their point ; but it has not increased. In 1899, 1900, and 1901 the average yield of an acre of corn was 25·3, 28·1, and 25·3 bushels ; in 1909, 1910 and 1911 the figures were 25·9, 27·7, and 23·9, in spite of exceptionally good seasons. That the production of corn has not fallen is due to the fact that there has been a 20 per cent. increase in the acreage devoted to it. In regard to the more important wheat crop the stagnation has been absolute. Productivity has not increased, averaging for the decade 14 bushels per acre, as compared with 29 bushels for Germany, 20·3 for France, and 33·0 for England. The area of cultivation remains stable, varying from year to year between 45 and 49 million acres.

DIMINISHED SUPPLIES AND EXPORTS.

Much the same story is told by the live stock returns. In 1910 there were roughly 62,000,000 cattle, 58,000,000

swine, and 52,000,000 sheep on the farms, whereas ten years earlier there had been 68,000,000 cattle, 62,500,000 swine, and 61,500,000 sheep. The direct result of all this is that the United States, while still but half inhabited according to old world standards, are in danger of having to go abroad for their food. They have, as the following official report shows, already forfeited their claim to be one of the great granaries and food stores of the world :—

“The rapid disappearance of meats and breadstuffs from exports of the United States is sharply illustrated by the figures of the calendar of 1912. They show, for example, an exportation of but 33,000 cattle in the calendar year 1912, against 164,000 in 1911, 277,000 in 1908, 494,000 in 1906, and 599,000 in 1904.

“The value of the cattle exports of 1912 was but \$3,000,000 (£600,000), speaking in round terms, against \$14,000,000 (£2,800,000) in 1911, and \$24,000,000 in 1908, \$38,000,000 in 1906, and \$41,000,000 in 1904, the 1912 exports being thus about 8 per cent. of the value of those exported in 1904, eight years earlier. The diminution in the cattle supply of the United States is also apparent in the fact that the importations of cattle in the year just ended amounted to over 300,000 in number, and their value to over \$5,000,000, against but 16,000 in 1904, valued at \$310,000. The figures of the Department of Agriculture showing the number of cattle on farms on January 1 of each year place the number on January 1, 1912, at 58,000,000, against 72,500,000 in 1907.

“The exports of meat show a marked falling off, especially those of fresh beef, of which the exports of the year were but a 9,000,000 lb., against 29,000,000 in 1911, 156,000,000 in 1908, 270,000,000 in 1906, and 354,000,000 in 1901, the fresh beef exports of 1912 being less than 3 per cent. of those of 1901. In other meats there is a marked decline, though less proportionately than that in fresh beef. The total value of meat and dairy pro-

ducts exported in the year approximated \$145,000,000 (£29,000,000) against \$181,000,000 (£36,200,000) in 1908 and \$209,000,000 (£41,800,000) in 1906.

" Breadstuffs exported in 1912, while showing a larger total than in 1911, are far below those of earlier years, the total for the calendar year 1912 approximating \$165,000,000 (£33,000,000), against \$215,000,000 (£43,000,000) in 1907 and \$277,000,000 (£55,400,000) in 1901."

In 1900, to put the comparison on the basis of the Census figures, breadstuffs and foodstuffs constituted 40 per cent. and 10·8 per cent. of total exports, and in 1910 21·5 per cent. and 7·6 per cent.

But enough has been said to establish the importance of the rural reform movement. If American civilisation is not to become onesided, if commercial and social development is to be orderly, the tendency towards excessive urbanism must be checked, and the productivity of the soil must be enhanced. It is illogical that the United States should already be confronted with the problems of an overcrowded industrial State; that their towns should be filled with an indigested, underpaid, and restless proletariat, while their farms are short of labour and the acreage of unimproved land runs into hundreds of thousands. Nor is the public any longer unaware of the dangers and inconveniences of the situation. There has been a widespread tendency during the past year to shift the blame for high prices from the tariff to the farm, and contemporary industrial unrest has made of "excessive urbanism" a national bogey. Unfortunately, as will be shown in another article, the movement has yet to crystallise into a definite and accepted plan.

II—THE FARMER'S POSITION

The proofs given in the previous article of the stagnancy of American agriculture must, to many people, appear

paradoxical ; so much has been heard lately of the prosperity of the American farmer. . . . What with the splendid educational work of the Department of Agriculture, of State Governments, and State and private Universities, there is no normal reason why the increase of acreage should not have been accompanied by increased productivity. . . . The best in the countryside turns to the towns for advancement, while the adventurous who wish to remain farmers sell their holdings, pack their chattels, and go to Canada. . . .

LACK OF ORGANISATION.

It is thus pretty clear that something is radically wrong with the rural economy of the country. According to the promoters of the Commission that is going to Europe, and to foreign observers so expert as Sir Horace Plunkett, the trouble is that there is no business system at all. It is argued that the farmer has no traditions. . . . Naturally in a community where enterprise is mainly selfish the amenities of social life are lacking. There are few of the social traditions that characterise, or used to characterise, the yeomanry at home.

The article concludes by showing the need of co-operation.

APPENDIX II

PRICES OF MEAT IN THE ARGENTINE, NEW YORK AND SOME EUROPEAN CITIES.

EXTRACTED FROM VARIOUS SOURCES.

In the Argentine the price of meat, which was 2·1d. per lb. at the beginning of 1912 reached 3·4d. per lb. at the close of the same year.¹ As a comparison the writer gives the prices of meat in other countries, mostly obtained from official publications. A typical case is provided by Great Britain, which consumes the best quality Argentine cattle at a lower price than the non-exportable offals in the producing country.

The Argentine municipalities oblige butchers to sell meat by weight and to exhibit a list of prices; but as a matter of fact the meat is sold by the joint and not by weight and the consumer pays 30 to 40 per cent. more than the nominal price. The following is the municipal tariff at Buenos Ayres (in pence per lb.):

Surloin	7·7	Chop	2·9
Chuck Steak	3·8	Brisket	2·4
Round	3·8	Shoulder	2·4
Bones	1·4		

PRICE OF MEAT IN NEW YORK.

In 1912 the prices of meat were the highest ever known in the United States. In September beef was at 30·3d. the pound, and it was predicted that before the end of the year it would reach 31·7d. Cattle are sold at 15d. to 17d. per lb. of live-weight.

¹ Now 5½ l. per lb., April, 1913:

PRICE OF MEAT IN FRANCE.

The following tables show the prices at some of the important markets in France :—

PRICES OF MEAT ON THE MARKET OF LA VILLELITE,
PARIS.

Average price in				Bullocks.	Sheep.
				1st Quality.	1st Quality.
				Pence	Pence
				per lb.	per lb.
June, 1912	..	..	..	7·8	10·0
Year 1911	..	..	..	8·5	11·3
.. 1910	..	..	..	7·6	9·5
.. 1907	..	..	..	7·1	10·1
.. 1903	..	..	..	7·0	10·0

MEAN RETAIL PRICES IN PARIS, 1912.

BULLOCKS AND COWS.

Chuck Steak	..	1/- to 1/3 per lb.
Rib	..	9d. to 1/1½d. per lb.
Loin	..	1/1½d. to 1/6d.
Round	..	1/4d.
Brisket	..	10½d.

Sheep.	per lb.	Calves.	per lb.
Breast	.. 6d. to 7d.	Breast	.. 10½d. to 1/-
Shoulder	.. 9d. to 10½d.	Loin	.. 11¼d. to 1/0¾
Leg	.. 11¼d. to 1/0½d.		

. PRICES OF LIVE STOCK AT BAYONNE.

Butcher's bullocks	..	..	3½d. per lb. live weight.
Draught Oxen	..	..	£24 to £32 the pair.
Cows	..	..	£18 to £26 " "
Milk-fed Calves	..	..	5½d. per lb. live-weight.
Sheep	..	..	4½d. " "
Pigs	..	..	6½d. " "

PRICE OF MEAT IN SWEDEN.

Bullocks and Cows	..	..	3d. to 4 $\frac{1}{4}$ d. per lb.
Sheep for Slaughter	..	..	4 $\frac{1}{2}$ d. to 5 $\frac{1}{4}$ d. ..
Suet	..	..	3 $\frac{1}{8}$ d. ..

PRICE OF MEAT IN BELGIUM.

Year.	1880	1890	1895	1900	1905	1910	1911
Bullocks and Cows :							
Pence per lb.	6·9	6·7	6·75	6·7	7·25	7·8	8·7
Pig	7·8	6·25	4·4	4·8	6·1	7·1	7·4

AVERAGE PRICES IN THE FIRST HALF OF 1912.

			Live cattle.	Meat wholesale.
			Pence per lb.	Pence per lb.
Natives Bullocks	..	..	4·3 .. 5·4	7·4 .. 9·75
Bullocks from U.S.A.	..	..	3·9 .. 4·8	6·5 .. 8·2
Dutch Bullocks	..	..	4·8 .. 5·4	7·6 .. 9·5
French Bullocks	..	..	4·8 .. 5·2	7·4 .. 9·5
Calves	..	..	4·8 .. 6·3	8·7 .. 13·0
Pigs	..	..	4·8 .. 6·1	7·4 .. 9·5

PRICE OF MEAT IN SPAIN.

The exportation of live beasts from the Argentine to Malaga and Barcelona has given good results. At Barcelona the bullocks sold at 6 $\frac{1}{2}$ d. to 6 $\frac{3}{4}$ d. per lb. of meat and the sheep at 6 $\frac{1}{2}$ d.

SALE PRICES OF MEAT IN SPAIN.

Pence per lb.						
Bullocks.	Calves.	Sheep.	Grass Lambs.	Milk Lambs.	Sheep.	Pigs.
6·4/7·5	8·75	6·9/7·6	6·5	8·75	6·5	5·6/7·8

RETAIL PRICES OF MEAT.

Bullocks.		per lb.
1st quality : under cut	..	1 6d.
1st quality : without bones	..	11 $\frac{1}{2}$ d.

PRICE OF ARGENTINE MEAT IN AUSTRIA.

	Pence per lb.
Price of frozen meat in the Argentine ..	2·3
Shipping from Buenos Ayres to London ..	0·36
Shipping from London to Trieste	0·23
Austria Customs Duty	1·4
Carriage from Trieste to Vienna	0·14
Expenses of Unloading, etc.	0·05
Cost of 1 lb. of frozen meat delivered in Vienna	4·5

PRICE OF MEAT IN ITALY.

RETAIL PRICES.

Bullocks or Cows :	Fore Quarter, Hind Quarter,	
	with bones.	with bones.
	Pence per lb.	Pence per lb.
Rome	7·8/8·2	8·7/9·8
Genoa	7·8	7·8
Bologna	7·8	10·0
Florence	6·5/7·2	9·8
Venice	8·2	10·0

PRICE OF ARGENTINE CATTLE IN SWITZERLAND.

COST OF IMPORTING A BULLOCK TO BERNE OR LAUSANNE.

	£	s.	d.
Shipping from Buenos Ayres to Genoa ..	5	7	0
Feeding	2	0	0
Expenses of Unloading.. .. .	0	5	6
Carriage from Genoa to Lausanne or Berne	1	5	6
Customs Duties	1	5	6
Various Expenses	0	7	0
Total	£10	10	6

The above figures refer to beasts which gave 715 lbs. of meat on slaughtering; this was sold at nearly 8½d.

per lb., *i.e.*, £25 2s.; deducting the expenses, there remains £14 11s. 6d. for the price of the beast at Buenos Ayres.

IMPORTATION OF CATTLE AND MEAT FROM THE ARGENTINE TO ITALY.

1. Italy holds the first place among European countries as an importer of Argentine cattle, and is second only to Belgium as an importer of sheep.

2. In 1911 the importation from the Argentine to the port of Genoa was 33,846 steers, 12,428 wethers and 4,750 tons of frozen meat. The mortality on board in the early part of the year was 6 to 10 per cent., but later it fell to 2 per cent., owing to improvement in the conditions.

PRICES OF GREEN HIDES.

	Pence per lb.			
Bullock Hide	6·3
Calfskin	7·4
Sheepskin	6·7
Lambskin	9·6

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