

## AGRICULTURAL DEVELOPMENT IN ARGENTINA.

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### ARGENTINA AS AN AGRICULTURAL COUNTRY.

The Argentine Republic is one of our strongest competitors in the food markets of the world. In many respects it resembles the United States, being in nearly the same zone, on the other side of the equator, and having a large, fertile, level country, admirably adapted to agriculture and stock raising. Almost everything that can be raised in the United States can be raised more cheaply and equally well in Argentina. The country has a total area of 1,135,840 English square miles, equal to all the United States east of the Mississippi, with both the Dakotas, Minnesota, and Iowa added. About 25,000,000 acres are under cultivation, nearly half of which is in wheat. With the wheat she raises, Argentina can supply bread for her own 5,000,000 people and for 16,000,000 to 22,000,000 persons in other countries, calculated on the United States basis of 4½ bushels per capita. The mild climate of the country gives farmers and stock raisers many advantages, for in the farming country the temperature rarely falls much below the freezing point, and grass grows the year round. The country extends through 34 degrees of latitude, or about 2,300 miles, from north to south, while the limits of the United States cover only about 24 degrees, or 700 miles less. The northern boundary of Argentina is 200 miles nearer the equator than the most southerly point of Florida, and the southern boundary of continental Argentina is 400 miles nearer the south pole than the United States (excepting Alaska) is to the north pole. The country is 800 miles wide at the widest point and tapers at the south to the narrow point of Patagonia, as it used to be called.

It is worth while for the farmers of North America to know something of the farmers of South America; what they produce and how they do it; what their natural advantages and disadvantages are; how their produce is marketed; how it is received and what the returns are to the producers; what the possibilities and probabilities of these new food producers are, and what, if any, are the opportunities to be found there by outsiders. In a residence of about eighteen months in

Argentina, while engaged in making investigations for the Department of Agriculture, the writer had an opportunity to see how agriculture and stock raising are carried on in nearly every part of that country.<sup>a</sup>

#### AGRICULTURAL CONDITIONS IMPROVING.

Nearly everything that has been done in Argentina thus far has been experimental. The tendency of the average Argentine farmer has not been favorable to progress. Years ago most of the valuable land of the country was parceled out in enormous tracts and either given away or sold for a trifle, without any obligation on the part of the owners to improve the land or open it for settlement. The small farmer was not encouraged, and large owners of land, as a rule, did not want it settled; they preferred to hold it, and were satisfied with a small revenue per acre, because they had so much. Immigration came chiefly from southern Europe—much the larger part of it from Italy. These immigrants were almost wholly ignorant of agriculture, and lacked the capacity or ambition to learn. Most of them did not want to own land, but were merely renters, getting all they could from one piece and going on to another, living for the most part wretched lives, getting small profits, and suffering many losses, owing to their ignorance and unwillingness to adopt improved methods. The influence of English and North American ideas has nevertheless been felt in the country, and most of the leading estancieros, or ranchmen, interested in cattle breeding especially, are now very ambitious to make the best use of their great opportunities. (Pl. XXIV, fig. 1.) They are not only improving the grade of their stock, but they are studying, with a view to making better use of their land, and we may expect them very soon to be practicing diversified farming more or less as it is done in the United States. One of their greatest mistakes has been that each man has gone in for but one thing—either the raising of sheep, cattle, or grain.

The climatic advantages of Argentina are so great that farmers there will probably always be able to produce live stock and grain cheaper than these can be produced in the United States. The farming land is rich and widely extended. There is no winter to contend with. Stock never requires shelter, and seldom dry feed for winter,

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<sup>a</sup>Those desiring more detailed information about agriculture and stock raising in Argentina should consult the bulletins prepared by the writer of this article, and published by the Department of Agriculture, as follows:

The Animal Industry of Argentina, Bulletin No. 48, Bureau of Animal Industry; Indian Corn in Argentina, Production and Export, Report No. 75; Alfalfa and Beef Production in Argentina, Report No. 77; Wheat Production and Farm Life in Argentina, Bulletin No. 27, Bureau of Statistics.

except for fattening steers, and sometimes in dry seasons a little hay is used. Some advantage lies in the fact that the seasons are just the opposite of those in the United States.

While primitive, wasteful, and vicious methods (or lack of methods) prevail in all parts of the country to some extent, and scientific progress seems to have missed some sections altogether, the signs of progress, ambition, and improvement are everywhere to be seen in the better parts of the country. Argentina naturally began to improve first in the direction of her greatest interest—cattle and sheep raising. More than fifty years ago Leonardo Pereyra began to import Short-horns from England for his ranch, near the city of Buenos Aires, and now it is estimated that three-fourths of the 25,000,000 to 28,000,000 of cattle in the country have more or less Shorthorn blood, which is the predominating breed there. The demand for the best breeding stock is one of the plainest indications of the desire to excel and of the realization that a well-bred animal pays a larger percentage of profit on the investment than a "scrub."

#### THE LIVE-STOCK BUSINESS.

There is no probability that Argentine cattle or sheep will be admitted to the English ports alive for a good many years, because of the existence of foot-and-mouth disease in Argentina. A fine business had been established in sending both sheep and cattle from the port of Buenos Aires when the disease made its appearance in the country in its severest form, causing the death of many thousand cattle. The English ports were closed to Argentine live animals and remained so until February, 1903, when the Argentine Government succeeded in persuading the British Board of Agriculture that the disease had entirely disappeared. On the promise of the enforcement of the most rigid sanitary laws to prevent the importation of the disease, and especially to prevent the sending of it to England if it should appear, the shipment of live animals to English ports was resumed. The requirements upon arrival in England were about the same as those imposed upon cattle from the United States. The business took on a great boom. The country was drained of cattle and sheep, and buyers do not seem to have made judicious selections, for some of them realized very poor prices. The facilities for shipping were wholly inadequate, and losses on the voyage were as high as 10, 15, and even 20 per cent, the latter in a few cases. Coming in competition with the corn-fed steers of the United States, the Argentine steers, bought at prices very high for that country, brought the shippers very disappointing returns, more often losses than profits. In this period of extreme stimulation steers sold in Argentina for \$37 to \$54, the latter and a few dollars less

being the price for the best three to three-and-a-half year old animals suitable for export. Many were bought at lower prices and sent to England, but these turned out worse than the higher priced animals; all of them, without exception, were either grass or alfalfa fed exclusively. None had been taught to eat grain, and so they lost weight on shipboard. The ocean freights varied from \$17 to \$22, and the sales were from \$58 to \$111, the latter a very exceptional figure.

But the business did not last long. In May, 1903, when the Argentinians were just learning what they must do to succeed in the English live-stock market, the foot-and-mouth disease broke out again in a milder form, and in a few months it spread generally over the country. The Argentine Government closed its own ports to the exportation of live stock and set about trying to control the disease. The best information obtainable is that it went pretty generally over the country, especially in the central and northern parts, but did not cause the damage that the previous outbreak did. Recently the Argentine Government has been trying again to secure the reopening of the English ports to Argentine live stock, but without success. It is even said that if England continues to refuse admittance to the steers and wethers of Argentina, the latter will admit the breeding stock of France, Belgium, Germany, and other countries of Continental Europe, which has been excluded for several years because of the existence of disease in those countries and to satisfy English demands. As long as Argentina admitted cattle or sheep from Europe, England would not listen to her request for admission of live stock. There does not seem to be, however, any probability that England will reopen her ports to Argentine live stock, on account of the fear of bringing foot-and-mouth disease into England.

#### HIGH PRICES FOR BREEDING STOCK.

Argentina is the best market English breeders have for the sale of their pure-bred stock, and they will make every effort to hold it. Argentine breeders and beef producers have learned one lesson thoroughly, and are now learning another. The first is that it pays to produce a well-bred steer (Pl. XXIV, fig. 1) rather than a scrub; the other is that corn-finished beef is better than grass or alfalfa fed beef, and that such animals will travel better and bring a better price in any market. The first lesson has been accepted by all the leading cattlemen in the country, and is only disputed by the old-timers in the remote districts, who continue, from lack of ambition or knowledge, to breed the old, thin, small "criolla" or native cattle. The number and importance of cattlemen who are content with this kind of animals is very rapidly decreasing. The extraordinary demand for pure-bred stock is shown by the enormous prices paid in the sales. In spite of the fact that



FIG. 1.—SHORTHORNS AT THE ESTANCIA SAN JUAN, ARGENTINA.

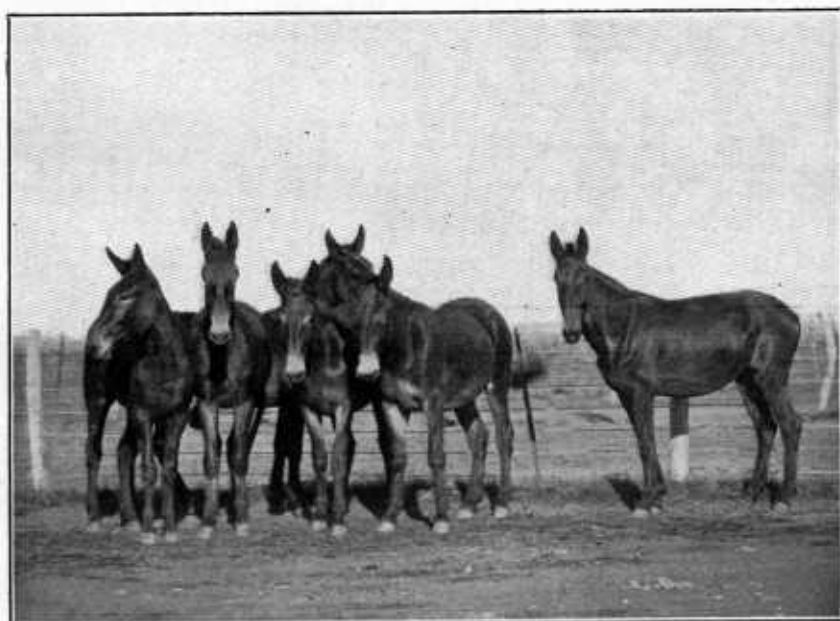


FIG. 2.—SOME BIG MULES, SOLD FOR \$66 EACH.

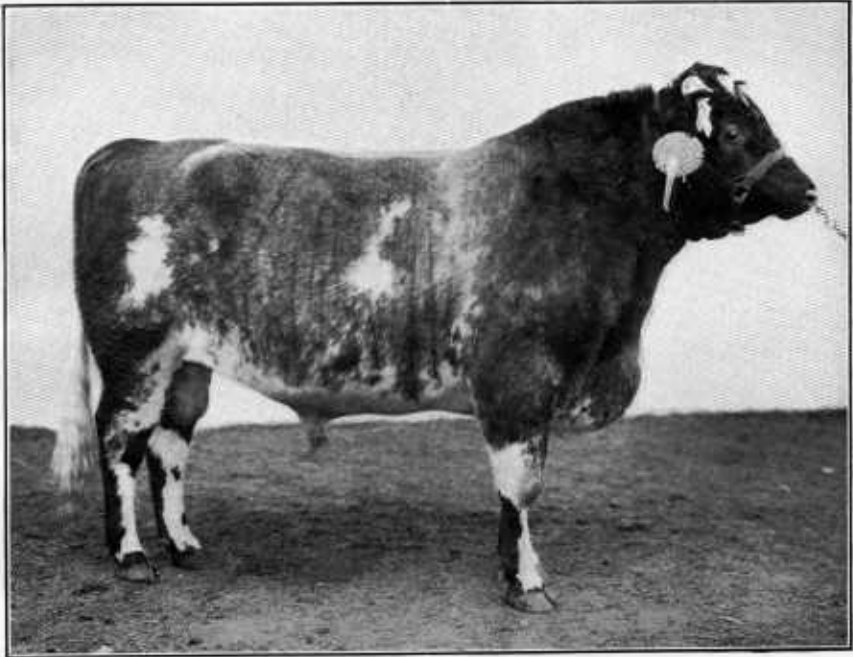


FIG. 1.—DURHAM BULL OXFORD BARON.

[No. 0150 (H. B. A. 6443); age, 1 year 11 months and 25 days; weight, 1,991 pounds; sold for \$21,000 Argentine.]

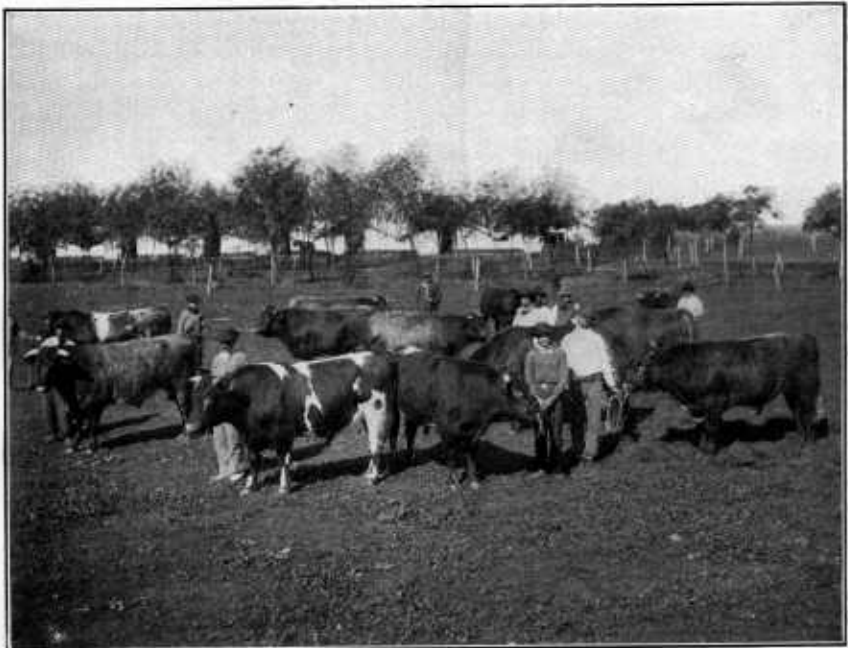


FIG. 2.—YOUNG DURHAM BULLS.

Argentine beef producers must sell their product to the freezing or chilling plants almost exclusively, the prices paid for breeding stock in the annual national exposition auction sales in September, 1904, were higher than ever before, and more animals were sold. Two Shorthorn bulls bred in the country were sold for \$9,240 each, and one imported from England brought \$13,640, the highest price yet paid in Argentina for a bull. During the past year many bulls, both imported and of domestic breeding, have been sold in Buenos Aires at prices ranging from \$2,000 to \$13,000, and probably at least 50 for prices above \$5,000. Hundreds have brought more than \$2,000. In the annual sales referred to 160 grade bulls were sold at prices averaging better than \$500 each. All of these were Shorthorns. (Pl. XXV.) These high prices indicate fairly the intense desire of Argentine stockmen to improve their cattle. The Herefords and Polled Angus are not yet so popular in Argentina, as was evidenced by the lower prices. The top price paid for a Hereford was only \$1,200.

The total value of live stock imported into Argentina in 1903 was \$693,120, an increase of about one-third over the previous year. The increase the first six months of 1904 has been much greater.

#### LEARNING THE VALUE OF CORN FEEDING.

The Argentine cattlemen, as already stated, have begun to learn that it pays to feed cattle corn before sending them to market. For a long time they have been reluctant to admit that their grass and alfalfa fed cattle did not make beef as good in every way as the corn-fed steers of the United States. All those who shipped cattle from Buenos Aires to the English market during the few months of 1903 when it was permitted found unmistakable proof that the corn finish of three to six months was an absolute requisite for the production of the best beef. More attention is now being paid to the raising of Indian corn in Argentina. Conditions are very favorable for the crop, and it is sure to be used more for feeding. One of the leading English ranchmen of the Province of Buenos Aires, Mr. Glynne Williams, spent some time in the United States during the summer and fall of 1904, studying the best methods of corn production, with the intention of raising corn for his cattle and sending them to market in condition to produce chilled beef equal to any that is offered in the English market. Others are also planning to feed corn as a finishing touch to their best steers, believing that, with the low cost of producing the corn, it will bring enough more for the steers to make it pay. This will come about slowly, however.

During the first eight months of 1904, 3,333 cattle and 12,073 sheep were shipped alive from Argentina. The cattle nearly all went to Brazil, with a few to South Africa and Spain. The sheep all went to

Belgium, except a few to Brazil and Spain. Sanitary objections have been made against Argentine meat products in Austria, where a good trade was being developed. The South African trade has fallen off so that it amounts to very little, except in horses and mules—3,867 horses, 5,335 mules, and 2,003 donkeys being exported in eight months, most of them going to South Africa. (Pl. XXIV, fig. 2.)

#### THE FROZEN-MEAT TRADE.

Argentine ranchmen have settled down to the conclusion that they must rely upon the frozen and chilled meat concerns, selling almost exclusively in the English market, as the outlet for their beef and mutton. Exporting chilled meat and even frozen meat at the good prices of 1903-4 is more profitable than shipping the live animals. The price of Argentine frozen beef of the best quality in the Smithfield market the past year has been  $3\frac{1}{4}$  pence ( $6\frac{1}{2}$  cents) per pound, and frozen mutton  $3\frac{1}{2}$  pence ( $7\frac{1}{2}$  cents) for frozen mutton carcasses under 50 pounds; heavier carcasses brought 2 cents a pound less. Chilled beef brought still better prices. So it is unlikely that Argentine steers would be exported in large quantities even in the improbable event of the reopening of the English ports.

During the year 1903, 3,381,600 frozen wethers were exported, all to England except 250,860, which went to South Africa. In the same year the exports of frozen and chilled beef, mostly frozen, were 996,023 quarters, all to England except 224,999 to South Africa. For the nine months January to September, 1904, the exports were 2,894,369 mutton carcasses and 862,938 quarters of beef, a considerable increase over the same period in 1903. For four years previous to 1903 the exports of mutton and beef were as follows:

*Exports of beef and mutton from Argentina, 1899-1902.*

Year.	Quarters of beef.	Carcasses of mutton.
1899.....	113, 481	2, 485, 949
1900.....	265, 965	2, 385, 214
1901.....	498, 375	2, 722, 727
1902.....	830, 213	3, 429, 222

At present five freezing plants are at work near the city of Buenos Aires, making the shipments referred to in these statistics. These properties are given a valuation of \$5,600,000 by the Government statistics, and their capitalization is over \$53,000,000. There is one other, at Bahia Blanca, the principal seaport in the southern part of the Province of Buenos Aires, not included in the statistics of 1904. It



is less than a year old. Several other freezing and chilling plants are in the course of construction, though the business has not paid the past two years as it did at first, when there were only two plants and dividends of 40 per cent were declared. In October, 1904, the best prices paid by these "frigorificos," as the freezing plants are called, were \$35 to \$40 for the best young steers on the ranch. Lincoln wethers brought \$4 to \$5.50, Rambouillets \$4.20 to \$4.90, and lambs \$2.60 to \$3.50. These were for the best fat animals, fit for freezing. The ordinary ones sold for much less. These prices are above the average for the year, because the time for shearing was approaching.

Only one establishment is sending chilled beef to England, and very good success is reported. We may expect that more chilled beef will be sent in the future in the place of so much frozen meat. The latter has not always met with the demand that was anticipated when the additional "frigorificos" were built. Frozen meat appeals only to a cheaper class of trade, and the English market, it is said, has often been oversupplied with it. The Argentines, therefore, intend to send to England chilled corn-fed beef. It will be several years before the volume of such shipments will be great enough to be seriously felt, but the time is surely coming when Argentine chilled beef will be an important factor in the English market, and there is no reason to doubt its being first-class. The disadvantage of the longer voyage will be more than overcome by the saving in cost of production in Argentina. Labor, land, and feed are all cheaper than in those parts of the United States where cattle are fattened for export.

#### NUMBER OF ANIMALS IN ARGENTINA.

No census of the live stock of Argentina has been attempted since 1895, and it is admitted that the census then taken is wholly unreliable. The best estimates claim from 25,000,000 to 28,000,000 head of cattle in the country. The first figure is probably more nearly correct. The number of sheep is estimated at from 85,000,000 to 120,000,000. It is still more difficult to arrive at a definite idea in regard to the number of sheep, because they are more scattered and less care is taken in enumerating them. Probably the number is between 90,000,000 and 100,000,000. The wool shipments of Argentina have not varied much in the past nine years, but last year (1903-4) was the lowest of any in that period. The exports were about 181,000 tons. In 1895-96 the exports were 231,000 tons. The tendency in sheep raising is now to raise more of the Merino type, instead of the long-wooled, big-car-cassed Lincolns, which have been the dominating breed for twenty years. (Pl. XXVI.) Rambouillets are bringing a much higher price

now, as the English market calls for the small, fine-grained carcass, not over 50 pounds, and the finer wool is in much better demand.

#### THE DAIRY INDUSTRY.

The dairy industry is developing into one of the chief interests of Argentina. A few years ago little or no attention was paid to it. During the year 1903, 6,875 tons of butter were exported from Argentina, at an average price of  $17\frac{1}{2}$  cents per pound. The exportation of 1904 will show a very large increase over this amount. In 1898 only 1,021 tons were exported. Argentine butter is of an excellent quality and is successfully competing in English markets with the best butter of other countries, bringing almost as good a price as Danish butter. It is shipped in 1 and 2 pound packages, packed in boxes holding 56 pounds. The system now in vogue is the shipment of cream from small gathering stations all over the country to a few large creameries, chiefly the one in Buenos Aires. This is a cooperative concern on a very large scale, and it has been successful and profitable.

#### BENEFITS FROM ALFALFA.

Following the improvement in breeding came the betterment of the pastures. The introduction of alfalfa has redeemed hundreds of thousands of acres of land hitherto of no use; the carrying capacity of thinly grassed rough land has been increased five, ten, and even fifteen fold by seeding the land to alfalfa. The foundation of the Argentine animal industry is built upon the wonderful capacity of this plant to reach deep down into the semi-arid land and bring the moisture to the surface. It has caused the development of a vast area of waste land in the western and northern parts of the country without irrigation. Cattle are sent from the breeding ranches to these outlying alfalfa pastures to be fattened. The carrying capacity of Argentine alfalfa is, in round numbers, from three-fifths to one animal per acre, while the usual average carrying capacity of the native grasses is one animal to  $8\frac{1}{3}$  acres. Some of the rich native pastures of the Province of Buenos Aires will carry one animal for every 2 acres; and, as there are both winter and summer grasses, this makes very good feed, except in dry seasons. Nothing resists the drought so well as alfalfa. The favorite method for securing alfalfa pasture is to plant the land with wheat. The ranchman rents his land to farmers, who raise two crops of wheat, paying him a good rental, and the third year sow alfalfa with the wheat, the owner paying only for the seed. In this way he gets his land into alfalfa at very small cost, and the results, while perhaps not quite so good as may be secured by sowing alfalfa alone, are generally satisfactory, because the ranchman of limited capital is thus enabled to secure a large amount of alfalfa pasture in a short time.

The life of Argentine alfalfa varies according to the use that is made of it and the location. The best success has been had in the western part of the Province of Buenos Aires, in San Luis, Cordoba, and Sante Fe, where the soil is light. The strong native grasses overcome alfalfa in the rich land of the Province of Buenos Aires. In the more favorable localities alfalfa, with ordinary care, lasts about fifteen years, although if it is fed short and not cut it may be run out in five years. In less favorable localities five to ten years is its average life, and it must be carefully treated, alternately fed and cut.

Alfalfa hay is very extensively used and is exported in increasing quantity, amounting now to over 100,000 tons per year. Four to eight cuttings per year are made, varying from four in the least productive regions to eight in the richest alfalfa fields of the north and northwest used exclusively for hay. Five to six cuttings is the average in good seasons in the best localities; about a ton per acre is the average for each cutting. The producers get from \$8 to \$10 per ton, and in the city of Buenos Aires the price is often much higher. The export price during the past twelve years has averaged from \$8 to \$12 per ton. The principal foreign consumers of Argentine alfalfa are Brazil, England, and South Africa.

The chief value of alfalfa in Argentina is that it brings steers to market a year sooner than could be done with the native grasses. This fact, with its drought-resisting strength, makes alfalfa absolutely necessary to Argentine ranchmen, and they are putting in as much of it as they can.

#### WHEAT PRODUCTION.

Aside from the production of cattle, by which Argentina first attracted the attention of the world, the country is known as a wheat grower, and will continue to increase in importance in this direction. The extraordinary gain made during the year 1903-4 in crop raising as against animal production was not due to any unnatural or phenomenal causes. Exports of farm products during the first six months of 1904 increased more than a third over the same period in 1903, which was considered a very good year. At the same time the exports of animal products fell off about 8 per cent. The total wheat export of Argentina up to the 1st of October, 1904, was 100,000,000 bushels, while the total for the year 1903 was only 75,000,000, and for the preceding year only 23,690,070 bushels. The wheat area is rapidly extending to the west and southwest. The acreage estimated by the Argentine Department of Agriculture for the past season was 9,275,178, and the estimated production 124,160,636 bushels. This is chiefly in the Provinces of Buenos Aires, Santa Fe, and Cordoba, with smaller amounts in Entre Rios and in the Territory of the Pampa.

The extension of wheat growing in Argentina depends largely upon immigration. Men to till the soil is the greatest need the country has. The wheat area at present includes the southern third of the Provinces of Entre Rios, Santa Fe, and Cordoba; all the Province of Buenos Aires, except the eastern part, which is subject to overflow; the northwestern part of the Neuquen and the Pampa Territories, and the river valleys in the southern and colder regions of Chubut and Rio Negro. Sufficient experimenting has been done to make it reasonably well known where wheat will succeed and where it will not pay. It has been driven from the northern and warmer part of the country to the central and southerly part, where the temperature is lower. Only a small part of the available wheat area is used for that cereal. As fast as farmers can be found to do the work it will be extended.

Nothing but winter wheat is grown, and that largely of an Italian variety called Barletta. This variety is a semi-hard wheat, resembling our hard red, but not so hard. It has shown greater adaptability than any other variety, resisting drought and rust, giving better yields, and standing more abuse. It does not readily shell out, but stays in the head until the farmer gets ready to cut it. It is very heavy, weighing from 60 to 64 pounds per Winchester bushel, and often more. It contains a very high percentage of gluten; analysis has shown 17 per cent of gluten in Barletta wheat.

#### INCREASING IMPORTANCE OF FARMING.

Farming is making great gains in Argentina. It used to be rather looked down upon, and little was done to encourage it. The rich men who controlled the Government were nearly all engaged in the stock business. Their animals lived on grass and roamed over vast areas. The small farmer was not wanted. Now the land is more valuable and is being cut up more. Farming has become more profitable to land owners. The gain in crop raising is shown by the Argentine export statistics of the first six months of 1904, compared with the same period of 1903:

#### *Exports of Argentine animal and plant products compared.*

#### EXPORTS FOR THE FIRST SIX MONTHS OF 1903 AND 1904.

First six months of 1903:		First six months of 1904:	
Animal products .....	\$65,584,432	Animal products .....	\$60,188,501
Plant products .....	59,933,020	Plant products .....	80,644,366

#### EXPORTS FOR 1903.

Animal products:		Plant products:	
Per cent of whole.....	49.4	Per cent of whole ....	47.6
Value .....	\$103,181,342	Value .....	\$105,251,309
Increase over 1902....	4,642,203	Increase over 1902....	37,059,977

The total increase in exports of farm products in 1904 was much greater than in 1903.

## FARMERS MOSTLY RENTERS.

The latest statistics show that only about one-third of the farmers are owners of lands they farm in Argentina, while in the United States the proportion is almost two-thirds. Especially in wheat raising the farmers are renters, raising wheat continuously as long as it will hold out, or as long as they are permitted to stay, when they move on to other land. They are mostly poor, living without comforts and working without intelligence. Having no interest in the country, they seek only to get all they can from the land, regardless of the effect of their ruinous operations. They are being employed profitably by many large ranchmen to convert their pastures into alfalfa, by raising wheat for two or three years prior to sowing the alfalfa. They generally do very poor work and their losses at harvest time are frequently heavy, because the grain is improperly stacked or is not sheltered after it is thrashed.

The roads are very poor and the expense of getting to market—both the hauling to the railway station and the freight from there to the seaboard—is very high. Freight rates in Argentina are more than twice as high as in the United States. Wheat is raised as far as 35 to 60 miles from the railway station. Thirty miles is considered about the limit for profitable production. The cost of hauling is from 4 to 12 cents per bushel, depending on the distance. The grain is all put in bags, holding not more than 70 kilos (154 pounds); the bags add further to the cost about 3.87 cents per bushel. The freight to the seaboard varies from 5 to 6 cents for distances less than 100 miles up to 10 and 13 cents for distances ranging from 200 to 350 miles. The average Argentine freight rate in 1901, according to Government statistics, was 1.6 cents per ton per mile, or more than double the freight rate in the United States, according to the report of the Interstate Commerce Commission. On most of the products in which the farmer is interested the rates in Argentina are much higher. The railways, of which there are about 11,000 miles, are nearly all owned by English capitalists, with Englishmen holding the important positions in the management and operation.

## COST OF PRODUCING WHEAT.

It is impossible to state exactly the average cost of producing a bushel of wheat in Argentina, because so much of it is produced by family labor, and it is claimed that this is the only way the Argentine small farmer can make a profit. Producers on a large scale who have kept careful records have estimated the cost of production at from 40 to 56 cents per bushel. Estimates on producing an acre of wheat, furnished by three good authorities, ranged from \$4.93 to \$8.29, the latter being the estimate for producing by hired help on a large scale.

Prices of wheat in Argentina vary according to the distance from the market, and are of course subject to the influence of the supply from other quarters. In the past thirteen years the prices have varied from 47 to 91 cents per bushel. The price in Buenos Aires the past year has been from 75 to 88 cents.

#### YIELD OF WHEAT.

The wheat yield of Argentina varies greatly, because of the different climatic conditions and methods of cultivation. The southern part of the Province of Buenos Aires gives the best results, except a small area in the far south, in the valleys of the Chubut and Negro rivers. The statistics of the Argentine Department of Agriculture give this region an average yield of 38.84 bushels per acre for ten years ending 1901. In these statistics southern Buenos Aires is given 20.26 bushels per acre, the yield decreasing to the northward, until in the north and center of the Province of Santa Fe it is 10.63 bushels per acre, and often much less. The past two or three years have given better returns than this in the south, a yield of 18 to 20 bushels per acre having been secured by most of the farmers in the Province of Buenos Aires.

Facilities for marketing grain are poor, but are improving. Railway companies have been required to provide shelter in the stations for grain offered for shipment, because they are unable to handle it as fast as it is offered during the busy season. Some immense elevators have been constructed in the ports of Buenos Aires, Rosario, and Bahia Blanca. Most of these are owned by railway companies and operated in their interest at high charges.

#### MILLING.

Milling is not in the most prosperous condition in Argentina, but it is improving. It has been a failure in the interior, except for local trade. In the export cities of Buenos Aires and Rosario, reached by ocean-going ships via the Plate and Parana rivers, it is quite prosperous, and in the former city are some large modern mills. In 1903, 849,918 barrels of flour were exported, chiefly to Brazil, where Argentina is the chief competitor of the United States. The capacity of the mills has been increased, and the exportation of 1904 was larger than for preceding years. The flour produced by these mills is of excellent quality and the bread of Buenos Aires is very superior.



FIG. 1.—LINCOLN RAMS.



FIG. 2.—OXFORDSHIRE DOWNS.

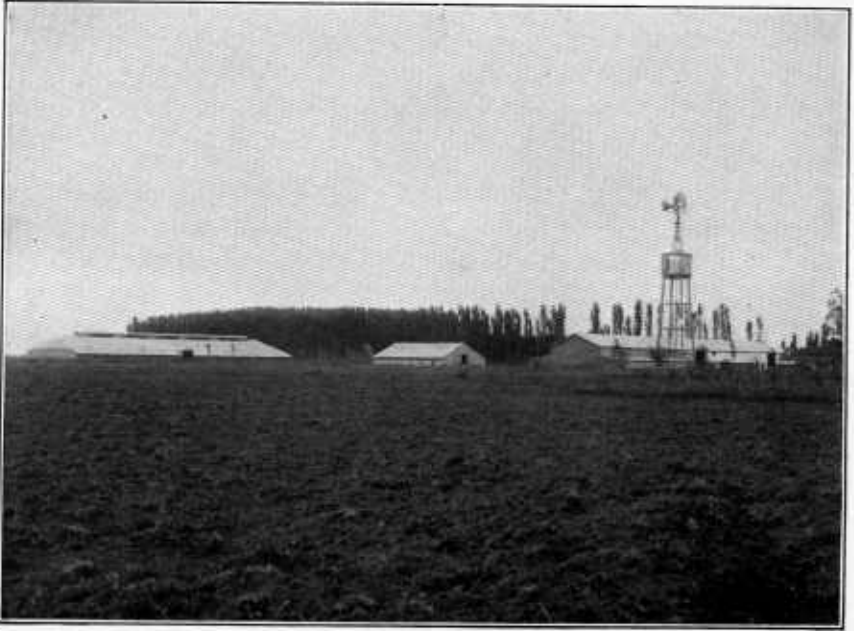


FIG. 1.—CATTLE SHEDS.

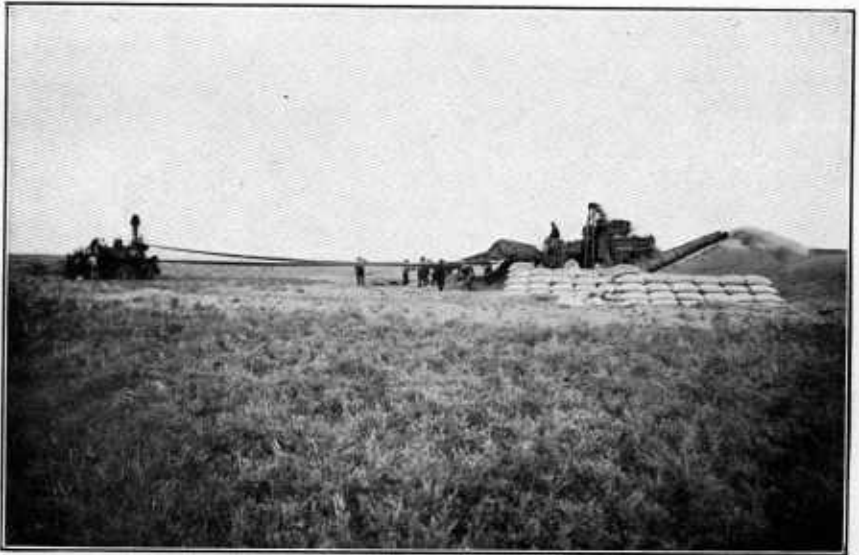


FIG. 2.—AN AMERICAN THRASHER AT WORK NEAR TRES ARROYAS, PROVINCE OF BUENOS AIRES, ARGENTINA.



## INCREASING PRODUCTION OF CORN FOR FEED.

The next important forward step of the Argentine farmer will be that he will raise more corn in connection with his live stock and will finish his steers somewhat as they are finished in the United States—with a few months of corn feeding. (Plate XXVII, fig. 1.) The country is admirably suited to the production of Indian corn, which is now grown in enormous quantities in a large territory, but is chiefly exported. In 1903 Argentina exported 81,000,000 bushels. More than half the corn produced in the country is exported, while in the best corn States of the United States all but about 12 to 15 per cent remains in the county of its production. In years favorable to the production of corn two-thirds or more of the Argentine crop is exported. Farmers there are now beginning to learn that the most profitable way to sell their corn is to send it to market in the condensed form of beef or pork. They have done little or nothing in the direction of raising hogs, but interest in this profitable animal, which may be raised without trouble in Argentina, is awakened, and it will be only a matter of a few years until the country will produce a considerable amount of pork.

Argentine farmers never fear frosts for their corn. It may be planted any time from August to January, but is usually planted in October or November. Early planted corn is better, because it ripens and dries sooner. Harvest begins at the end of February. The greatest disadvantage suffered by the Argentine corn raiser is the fact that the gathering season is likely to be wet. There is no cold, dry weather to ripen and cure the corn. This adds greatly to the difficulties of marketing, and is one reason for the choice of variety. The most successful kind is the hard, slender-eared flint corn, known as "cuarenton" and "cincuentino," which takes its name from the fact that it takes from forty to fifty days to form ears. Ninety to 95 per cent of the corn in the country is of this yellow variety. It is too hard for animals to masticate without its being partly crushed, but it yields a high percentage of alcohol and brings a good price in the European market, besides resisting the dampness of the ocean voyage better than soft corn, because it does not so readily absorb moisture.

Notwithstanding the inferior methods of agriculture followed by the corn-raising farmers of Argentina, they have secured astonishing yields. These vary greatly in different localities and are the result of better or worse cultivation. The average crop in the corn district is better than 40 bushels per acre, but this is not considered a satisfactory crop by a good farmer. In the rich alluvial lands of Buenos Aires and southern Santa Fe the yields run from 60 to 110 bushels per acre, and good farmers expect 70 to 80 bushels. Very little corn in the

country is properly planted or cultivated; the rows are too close—generally not more than 22 to 24 inches—and the seed is drilled in, hardly ever planted on “the checker-board plan of North America,” as they call it there. Better farmers, however, are learning that the method of the United States is the right one, and several hundred North American corn planters and cultivators have been sold and are in profitable use. It is hard to convince the Argentine farmers that by planting half as much seed they will get twice as much crop, but those who have tried it know that such will be the result.

Experiments have been made with the North American dent corn, and while they have not always been satisfactory the most intelligent experimenters believe that some of our varieties more suitable for feeding will be adaptable to their use.

Many of the progressive ranchmen are already planning to combine the raising of cattle, corn, and hogs, as in the United States. With cheap land, cheap labor, and favorable climate they expect to be able to duplicate the food products of the United States at a much lower cost, except for transportation.

At present the corn area of Argentina extends from the city of Buenos Aires about 250 miles to the south, 300 to 400 miles to the southwest, 300 miles west, 350 to 400 miles northwest, and 350 to 400 miles north. Less than 5,000,000 acres were cultivated last season. This area is sure to be extended in every direction except to the west. Corn is now grown outside these districts, but not to any great extent. The warmer regions do not give good results and the cooler regions at the south have not been exploited. Corn raising in Argentina is mostly done in a much warmer climate than in the United States. Most of the crop is raised north of latitude  $36^{\circ}$  south, chiefly from  $35^{\circ}$  to  $33^{\circ}$  south, while the corn belt of the United States is in latitudes  $38^{\circ}$  to  $42^{\circ}$  north. In short, the Argentine corn district ends at a point 100 miles nearer the equator than that at which the United States corn region begins.

The price of corn in the Buenos Aires and Rosario markets has been from 35 to 40 cents a bushel the past year. This means that the farmer does not get over 20 to 30 cents. Yet, the crop has been profitable, especially near the seaboard, where the yield is best and the cost of getting to market lowest.

#### FLAX, FRUIT, COTTON, AND TOBACCO.

Other important Argentine products of which we are sure to hear more in the future are flax, fruit, cotton, and tobacco. The exports of flaxseed in 1903 were 23,118,773 bushels. Delicious fruits are

produced, including peaches, pears, grapes, figs, oranges, strawberries, cherries, apricots, etc., and, in the southwestern and colder regions, apples.

#### USE OF AGRICULTURAL IMPLEMENTS FROM THE UNITED STATES.

Agricultural implements from the United States are getting to be generally used in Argentina. Binders, headers, mowers, rakes, plows, harrows, thrashers, and engines (Pl. XXVII, fig. 2) are the principal items. In the year ending June 30, 1904, the United States sold to Argentina implements to the value of \$3,996,476, an increase of more than \$1,000,000 over the previous year.

#### DIFFICULTIES OF THE SMALL FARMER.

Land for agriculture has rapidly risen in value during the past three or four years, but may still be had for from \$5 to \$15 per acre, depending largely upon the distance from the railway station and from the seaboard. Good land within 4 to 8 miles of a railway station and 100 to 300 miles from the seaboard may be had for \$10 to \$15 per acre. It will be disappointing, however, to any North American small farmer who goes there alone. The country is no place for a poor man. The writer has had many inquiries from young men in the United States who thought Argentina was a good place to go to get a start. The conditions of labor are such that the start should be made under more democratic conditions. The line is drawn very sharply between the rich and the poor and the gap is very wide. The opportunities of the Western United States do not exist there. A North American farm hand would not submit to the treatment or the associations he would find in Argentina. Agriculture and stock raising, especially the latter, are conducted on a very large scale. The man of small capital has comparatively little chance. If an organization of farmers from the United States should go to Argentina and introduce improved methods, success would doubtless follow, if local conditions were studied and understood before investments were made. Great opportunities exist for profitable investment in the development of the resources of the country, but the greatest prudence must be exercised and care taken to know in advance how to avoid the difficulties that beset the stranger in a strange land.

Lands for agriculture rent for from 70 cents to \$4 an acre, depending more upon accessibility to market than any other one item. Fertility is the next consideration, and improvements cut no figure, except that new land is preferred. The poor Italian or other immigrant from Europe comes to the country with nothing. He works a year or two as a laborer for small pay and very poor shelter and board,

until he has paid his debt to the man who advanced him money to come. He spends almost nothing. In two or three years after his arrival some landowner will give him land, seed, implements, and animals, even guaranteeing his little grocery account, to get him to work land for half the profits. His condition now improves, and in another two years he will be found paying cash rent. All members of the family, young and old, of both sexes, work very hard during the busy seasons; and they have no comforts, only bare necessities, and these far below the standard of the poorest North American farmer. An increasing number of them are buying land, and very slowly they are learning diversified farming, so that they may have something to do all the year round.