Large beef herds are seen which are practically pure bred.

Beef making is a pasture proposition. Alfalfa grows luxuriantly, and to anyone unacquainted with the possibilities of the country, the degree of fineness which cattle acquire without grain is a marvel.
SUMMARY

1. INTRODUCTION.—The Argentine Republic recently has superseded the United States of America in the amount of surplus beef produced and sold abroad. Recognizing the important bearing of the Argentine cattle industry upon foreign and domestic markets for beef cattle produced in the United States, the author, on behalf of this experiment station, made a thorough investigation and personal inspection of beef production in Argentina.

2. NATURAL ADVANTAGES FOR CATTLE RAISING.—Climatic conditions are such that cattle can be raised and fattened out of doors without shelter and generally without shade. Abundance of alfalfa and other nutritious legumes and grasses, together with cheap land and labor, makes it possible to produce beef cattle cheaply. They fatten readily without grain. Should corn-fed beef become profitable, an ample supply of corn can be produced.

3. QUALITY OF CATTLE.—Great improvement in the common stock of the country has been effected by importations of high-class pedigreed cattle from Great Britain during the last 25 years and particularly during more recent years. Several large beef herds were seen which were practically pure bred.

4. DISTRIBUTION OF CATTLE.—Five provinces, Buenos Aires, Corrientes, Entre Rios, Santa Fe and Cordoba, known as the pampa grass region, contain over 80 percent of the cattle in Argentina. 222,000 establishments occupying 288 million acres were engaged in the cattle business in 1908. Many individual land holders and land companies own very large tracts.

5. SLAUGHTERING FACILITIES.—A municipally controlled market and slaughtering establishment in Buenos Aires is creditable. Efficient government veterinary inspection is conducted. Convenient locations and sanitary conditions have been provided, with reference to both local and export beef trade.

6. CONSUMPTION AND EXPORT.—Approximately 3 million cattle were slaughtered in 1911, of which approximately one million were shipped abroad as dressed beef and a considerable proportion of the remainder were prepared for export in other forms. The per capita consumption of beef is about equal to that in the United States. Exports of beef have increased from 94 million pounds in 1895 to 193 million pounds in 1900 and 580 million pounds in 1910. Argentine grass-fed beef sells in the English market with in two to five cents per pound of corn-fed beef, so long as the supply lasts, doubtless will continue to command a premium over domestic and export beef trade.

7. DIFFICULTIES SURROUNDING THE INDUSTRY.—British ports have been closed against Argentine live cattle since 1900 (except a short time in 1903) owing to an outbreak of foot-and-mouth disease, altho there is little, if any, of this disease in Argentina at the present time. Texas fever ticks, anthrax or "carbuncle", and tuberculosis are prevalent. Droughts and locusts are plagues which are more or less localized. Nevertheless, cattle raising is a favored and favorite industry in the Republic.

8. THE OUTLOOK.—Argentina's natural advantages enable her profitably to compete with the grass cattle and lower grades of native beef produced in the United States. North American corn-fed beef, so long as the supply lasts, doubtless will continue to command a premium over Argentine grass beef in the markets of the world, but domestic demand in the United States will soon absorb practically the entire amount of beef produced here, thus rendering foreign competition abroad an unimportant factor in the industry. The chief concern of beef producers in this country, so far as Argentine competition is concerned, should be the effect of possible importation of South American beef to the United States upon the production of beef cattle here. That corn and likewise corn-fed cattle can be produced in Argentina, Uruguay and some other South American countries is an assured fact. The extent to which it will be fed to cattle, however, is limited by the relatively small production of corn and further by the fact that it is a new industry and will not gain favor rapidly because it involves more cropping and labor and considerably more expense.

Expansion of the cattle-raising industry in Argentina has ceased, largely because grain growing is proving more profitable than cattle raising. The beef product will be much improved but the available supply for export doubtless will not increase more rapidly than the combined factors of increased population there and among nations consuming her surplus and the relative decrease of beef production elsewhere. Again, the cost of beef production will increase with increased cost of labor and land. On the whole it is not anticipated that the business of raising beef cattle in the United States will be permanently menaced by Argentine competition.

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NOTE: This is the second of a series of circulars dealing with economic factors in cattle feeding. Following publications will treat of beef production in the United States, cattle feeding conditions in the corn belt, and cattle feeding in its relation to farm management and soil fertility.
ARGENTINA AS A FACTOR IN INTERNATIONAL BEEF TRADE

BY HERBERT W. MUMFORD, Chief in Animal Husbandry

Notice has been taken in a preceding discussion (Circular 163) of the fact that Argentina now outranks the United States with respect to the surplus of beef produced and that the change in relative positions of the two countries as beef-exporting nations has occurred since 1905. So marked has been the development of this trade that the attention of the entire world has been called to Argentina as a rapidly growing and exceedingly important factor in the world's supply of beef. For many years the United States of North America was the chief factor in the export trade of this commodity, and an especially important factor because supplying beef of high quality. Today the Argentine Republic must be looked upon as the most important factor in the world's market as regards the amount of surplus beef sold; and, furthermore, the quality of her beef product is fast improving.

Notwithstanding the embargo against importation of live cattle from Argentina into Great Britain which, on account of foot-and-mouth disease, has been in force since 1900, aggregate exports of cattle and beef from Argentina have risen from $8,000,000 in 1900 to $24,000,000 in 1905 and $29,000,000 in 1910; while corresponding figures for the United States were $68,000,000 in 1900, $72,000,000 in 1905, and $24,000,000 in 1910. (See Circular 163.)

With only twenty-nine million cattle, as compared with seventy-one million in the United States, Argentina is in a position to maintain her export trade in beef by reason of the small population (seven million) and consequently limited domestic consumption of beef in that country. Whether or not expansion of beef production in Argentina takes place in the fu-

1. In confining this discussion largely to the production of cattle in Argentina, the writer does not overlook other possible sources of beef in South America, such as Uruguay, Brazil, Bolivia, Paraguay, Venezuela, and possible others which, with the exception of Uruguay and parts of Brazil, are only partially exploited. Operations in Argentina may be taken as a type and indicative in a general way of the development which is likely to follow in other countries. Argentina is and will remain for some time to come the largest producer and most important single factor in the export trade in beef from South America.
2. Except a short period in 1903.
3. The U. S. Census Bureau estimates the number of cattle in the United States in round numbers at 64 million, April 15, 1910, and 67 to 69 million, June 1, 1910. The U. S. Dept. of Agriculture estimates 71 million, Jan. 1, 1910, and 60 million, Jan. 1, 1912.
ture will depend largely upon market conditions. In the United States, on the other hand, a rapidly growing population of 92 million renders it doubtful whether our production of beef will equal our demand unless a rapid expansion of the cattle-raising industry occurs in the near future, which is improbable.

It is evident, therefore, not only that the condition and possibilities of beef production in Argentina have a vital bearing upon our beef trade in foreign markets, but also that the Republic even may become a competing factor in the beef supply of our own country. Recognizing the importance of this factor, the author, on behalf of this experiment station, made a thorough investigation and personal inspection of the beef-cattle industry in Argentina, upon which the following statements are based.

**NATURAL ADVANTAGES FOR CATTLE RAISING**

Cattle raising for beef in Argentina, especially in the temperate zone, is a much more favored industry than in the United States. The climate makes it possible for the entire life of cattle to be spent out of doors without shelter and generally without shade of any kind. Alfalfa grows most luxuriantly, and the suitability of a very large acreage for the growth of that crop and of other nutritious indigenous and introduced legumes and grasses, together with cheap land and labor, makes it possible to

![Baled Alfalfa in the Stack](image_url)
produce beef cheaply. To any one unacquainted with the possibilities of the country, the degree of fatness which the cattle acquire on grass or alfalfa alone is a marvel. Corn feeding as a supplement to pasture for beef production is extremely rare. Beef-making in Argentina at present therefore is practically a strict pasture proposition.

There is quite an extensive area well suited to, and at present partially used for, the growing of corn, but as yet, and probably for some years to come, this product will be either exported or used for horse, dairy cow, and pig feeding. Only the flint varieties are grown generally. If the time ever comes when slaughterers will pay a sufficiently high premium for corn-fed beef, it is believed the country can produce ample for this purpose.

**QUALITY OF CATTLE**

One of the most striking features of the recent development of beef production in Argentina is the great improvement in quality or breeding of the cattle. Many Argentine estancieros have spared no trouble nor expense in effecting improvement of the common stock of the country. This has been accomplished

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**FIG. 2. AN ARGENTINE-BRED SHORTHORN BULL THAT WOULD FIND FAVOR IN THE SHOW RINGS OF ANY COUNTRY**
chiefly by importations of high class pedigreed beef and dairy cattle from Great Britain. It is an historical fact that the cattle breeders of Argentina, and more especially the breeders of registered beef cattle, have bought the best that Great Britain has produced, without much reference to their cost.

In the herdbook of the Argentine Rural Society in 1909 there had been registered about 50,000 pedigreed cattle of beef breeds, some 4,000 of which were imported; and not all pedigreed cattle are registered in the Rural Society's book. During the period from 1880 to 1907, 16,156 pedigreed cattle were imported into Argentina, 14,624 of which were brought from the United Kingdom; and in the two years 1907 to 1909 over 9000 head were imported from England alone.1

The extension of fencing has been an important factor in making systematic, selective cattle raising possible. At present, in place of the old native cattle, estancias are stocked with mestizo (half breeds), and in many cases more highly improved stock. In several instances large beef herds were seen which were practically pure bred. Shorthorns (more frequent-

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ly called "Durhams" in the Republic) are by far the most numer­
erous and popular, altho some fine herds of Herefords and
Aberdeen Angus exist. Of the 50,000 registered cattle mentioned
above, about 37,000 were Shorthorns, 10,000 Herefords, and 2500
Aberdeen-Angus. A still larger proportion of the grade cattle
of the country than of registered animals are Shorthorns. There
is considerable rivalry among the leading breeders of pedigreed
beef cattle in their attempts to bring out prize winners at the
live-stock shows, the chief one of which is an annual exposition
at Palermo, Buenos Aires.

Of the cattle produced for slaughter the best are sold to the
\textit{frigorificos}, where they are either chilled or frozen for export.
There is no absolute standard set by these establishments as to
the quality and condition necessary for their trade, as consider­
able variation in the quality and degree of fatness occurs, de­
pending upon available supplies and foreign demand.

Demands in the way of breeding and finish in cattle for
consumption in the Argentine Republic are not exacting, and a

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{fig4.jpg}
\caption{Good Herds of Herefords are Occasionally Seen}
\end{figure}

cheaper, less improved, half-fat class of cattle is slaughtered to
supply local butchers. Discarded cows, young stock, and work
oxen in many instances are important factors in this trade.
THE ARGENTINE REPUBLIC

Fig. 5. Map of Argentine Republic, Showing Distribution of Cattle
DISTRIBUTION OF CATTLE

A statement of the distribution of cattle throughout the various provinces of the Republic will serve to show what parts are considered best adapted for cattle raising. In some instances these statistics might be misleading; for example, in the province of Buenos Aires and other favored sections of the country still more cattle might be kept, but agriculture is more profitable.

Table 1.—Number of Cattle by Provinces and Territories, According to the Last Live-Stock Census in Argentina (1908)1

<table>
<thead>
<tr>
<th>Province</th>
<th>Number of Cattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buenos Aires</td>
<td>10,351,000</td>
</tr>
<tr>
<td>Corrientes</td>
<td>4,276,000</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>3,413,000</td>
</tr>
<tr>
<td>Entre Ríos</td>
<td>3,146,000</td>
</tr>
<tr>
<td>Córdoba</td>
<td>2,639,000</td>
</tr>
<tr>
<td>S. del Estero</td>
<td>629,000</td>
</tr>
<tr>
<td>San Luis</td>
<td>579,000</td>
</tr>
<tr>
<td>Salta</td>
<td>560,000</td>
</tr>
<tr>
<td>La Pampa</td>
<td>465,000</td>
</tr>
<tr>
<td>La Rioja</td>
<td>417,000</td>
</tr>
<tr>
<td>Tucumán</td>
<td>404,000</td>
</tr>
<tr>
<td>Chubut</td>
<td>335,000</td>
</tr>
<tr>
<td>Mendoza</td>
<td>330,000</td>
</tr>
<tr>
<td>Río Negro</td>
<td>279,000</td>
</tr>
<tr>
<td>Catamarca</td>
<td>268,000</td>
</tr>
<tr>
<td>Chaco</td>
<td>265,000</td>
</tr>
<tr>
<td>Formosa</td>
<td>234,000</td>
</tr>
<tr>
<td>Neuquén</td>
<td>194,000</td>
</tr>
<tr>
<td>Jujuy</td>
<td>113,000</td>
</tr>
<tr>
<td>Misiones</td>
<td>94,000</td>
</tr>
<tr>
<td>San Juan</td>
<td>82,000</td>
</tr>
<tr>
<td>Santa Cruz</td>
<td>25,000</td>
</tr>
<tr>
<td>Tierra del Fuego</td>
<td>12,000</td>
</tr>
<tr>
<td>Los Andes</td>
<td>1,000</td>
</tr>
<tr>
<td>Total</td>
<td>29,111,000</td>
</tr>
</tbody>
</table>


From the above statement and the accompanying map (Fig. 5) it will be seen that the five provinces of Buenos Aires, Corrientes, Entre Ríos, Santa Fe and Córdoba were the leading cattle sections, containing upward of 80 percent of the cattle in the Argentine Republic. This portion of the country, known as the pampa grass region, is naturally the most favored section for grazing, and with the introduction of improved beef cattle and of foreign grasses and legumes, chief among which is alfalfa, the industry has advanced rapidly. Cattle growing has radiated from the pampa grass region with the more extensive cultivation of alfalfa.

The number of establishments engaged in the cattle business in 1908 was estimated at about 222,000, and these occupied more than 288 million acres, or an average of about 1,300 acres. Many individual landholders and companies own very large tracts, a number of which range in size from 10 to 50 square leagues (about 75,000 to 385,000 acres). Some of the smaller estancias are set largely to alfalfa. These extensive areas are stocked with literally thousands of cattle. Besides 29 million cattle in Argen-
Fig. 6. Some Prominent Breeders Maintain Good Herds of Aberdeen-Angus Cattle

tina, there were in 1908 about 67 million sheep, 7 million horses 1 1/2 million hogs, 4 million goats, a half million mules and 285 donkeys. The total length of wire on grazing lands amounted to 1,015,500 kilometers (631,000 miles). It has been estimated that the inclosing of rural properties in Argentina during the last 25 years has cost 100 million dollars for wire alone.

Slaughtering Facilities

The municipally controlled mataderos or market and slaughtering establishment in Buenos Aires is creditable. The government veterinary inspection at this plant, as well as that at the frigorificos and fabricas, is to be commended as contrasted with the slovenly methods in common use in isolated sections where competent government inspection is unknown. Ample provision has been made for slaughtering cattle for domestic consumption and for export, and these establishments are located conveniently both to care for the bulk of the city and export trade and to provide sanitary conditions. The number of packing houses owned and operated by North American companies is on the increase.

2. U. S. Consular and Trade Report, Nov. 16, 1910, p. 621.
CONSUMPTION AND EXPORT

With its relatively large production of beef and its small population, Argentina has a very considerable beef product for export. It is estimated\(^1\) that in 1911 five million head of cattle were slaughtered, of which approximately one million were shipped as dressed beef to markets abroad, and a considerable proportion of the remainder were prepared for export in the form of canned meat, jerked beef, beef extract, and other products. Statisticians differ as to the per capita consumption of meat in the Argentine Republic. The amount annually consumed per capita is estimated at about 140 pounds.\(^2\) The per capita consumption in the United States is estimated at 185 pounds. One would think from casual observation that the per capita consumption of meat in the Argentine Republic is much larger than in the States, and it is quite possible that the available statistics on the subject are not very reliable. At any rate, of the total meat consumed in Argentina a much larger percentage consists of beef than in the United States. The same statement would be true if for no other reason than the scarcity of swine products. Relatively speaking, but a very

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small percentage of the meat consumed by the better classes is pork or bacon. Mutton is used extensively.

As seen from some points of view, it would seem that the Argentine Republic is not favorably located for developing an extensive and profitable export trade in beef. Closer study shows that their slaughtering establishments can be and are located within easy access to the most favored cattle-producing sections, and also at or near seaports having direct and frequent communication with British and European ports. That exports of beef have increased rapidly is shown by Table 2 and the accompanying graphic illustration (Fig. 8). The decrease shown in exports of live cattle is due, as already stated, chiefly to the closing of English ports against them.

### Table 2.—Exports of Beef and of Live Cattle

<table>
<thead>
<tr>
<th>Year</th>
<th>Beef, lb.</th>
<th>Cattle, No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>64,280,000</td>
<td>312,150³</td>
</tr>
<tr>
<td>1890</td>
<td>88,280,000</td>
<td>408,126</td>
</tr>
<tr>
<td>1895</td>
<td>143,352,000</td>
<td>150,550</td>
</tr>
<tr>
<td>1900</td>
<td>193,492,000</td>
<td>262,681</td>
</tr>
<tr>
<td>1905</td>
<td>398,223,000</td>
<td>90,000</td>
</tr>
<tr>
<td>1910</td>
<td>580,142,000</td>
<td></td>
</tr>
</tbody>
</table>

2. Including chilled, frozen, jerked, and canned beef.  
3. 1889.

Great Britain being by far the leading buyer of dressed beef, the amounts shipped to that country from Argentina and from this country during recent years are significant of the trend of trade conditions. The following table includes chilled and frozen beef:

### Table 3.—Dressed Beef Imported into Great Britain from Argentina and United States

<table>
<thead>
<tr>
<th>Year</th>
<th>From United States, cwt.</th>
<th>From Argentina, cwt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>2,232,000</td>
<td>2,582,000</td>
</tr>
<tr>
<td>1906</td>
<td>2,427,000</td>
<td>2,796,000</td>
</tr>
<tr>
<td>1907</td>
<td>2,418,000</td>
<td>2,692,000</td>
</tr>
<tr>
<td>1908</td>
<td>1,432,000</td>
<td>3,571,000</td>
</tr>
<tr>
<td>1909</td>
<td>857,000</td>
<td>4,208,000</td>
</tr>
<tr>
<td>1910</td>
<td>477,000</td>
<td>4,899,000</td>
</tr>
<tr>
<td>1911</td>
<td>174,000</td>
<td>6,111,000</td>
</tr>
</tbody>
</table>

4. Annual Statement of Trade of the United Kingdom with Foreign Countries.  
5. 112 lb.
These figures show how rapidly Argentina has practically monopolized the British beef market. Of the total dressed beef imported by Great Britain in 1911, 84 percent was shipped by Argentina and but 2 percent by the United States.

![Graph showing exports of beef and live cattle from Argentina, 1855 to 1910.]

It should not be expected that the beef produced in the Argentine Republic on grass alone will grade in the market as high as English, Scotch or corn-fed beef from the United States of North America. Notwithstanding this, beef is being produced, and in the manner spoken of, that sells in the English market within two cents per pound of the corn-fed beef from the United States. The bulk of the Argentine product sells at three to five cents per pound below North American dressed beef.

**Difficulties Surrounding the Industry**

Some discouragements confront the Argentine beef producer, altho they may be of quite a different character from those elsewhere experienced. For example, since 1900, owing to an outbreak of foot-and-mouth disease and the consequent supposed prevalence of this disease in the Argentine Republic, the ports of Great Britain have been closed against the importation of Argentine live cattle, except a few months in 1903. There is very little, if any, of this disease in Argentina at the present
time. In fact, it does not seem to be a serious handicap to cattle raising there, except as mentioned. Argentine cattle raisers have even gone so far as to suggest the possibility of its being prevalent in a herd without its presence or effect being especially manifest. Other discouragements are found in the way of Texas fever ticks, a form of anthrax commonly spoken of as carbuncle, and tuberculosis. Added to these diseases, other obstacles to be reckoned with are droughts and locusts, which seem to be more

![Fig. 9. Not infrequently, two-year-old steers that have been largely developed on alfalfa pasture make acceptable killers for export chilled beef](image)

or less localized. But notwithstanding all that may be said with reference to the difficulties encountered in cattle raising, it is still a favored and favorite industry in the Argentine Republic, as indicated by the number of men engaged in it and their prosperous condition.

**The Outlook**

On the whole, it appears evident that the natural advantages of Argentina enable her cattle products profitably to compete, as they are already doing, with the grass cattle and lower grades of native beef produced in this country. North American corn-fed beef, so long as the supply lasts, doubtless will continue to command a premium over Argentine grass cattle in the markets of the world. Altho Argentina eventually may develop the pro-
duction of corn-fed cattle, which her soil and climate render quite possible, it is probable that the domestic demand in the United States by that time will absorb, and indeed already absorbs, practically the entire amount of beef produced here, thus rendering our export trade, and consequently foreign competition abroad, an unimportant factor in the industry.

The chief concern of beef producers in this country should be, not what effect will South American competition have upon our export trade, but what effect will the possible importation of South American beef to the United States have upon the production of beef cattle here.

That corn, and likewise corn-fed cattle, can be produced in Argentina, Uruguay, and some other South American countries is an assured fact. The extent to which it will be fed to cattle, however, is limited by the relatively small production of corn and further by the fact that it is a new industry and will not gain favor rapidly because it involves more cropping and labor and considerably more expense.

It is significant that the expansion of cattle raising in Argentina has ceased, and largely because grain growing is proving more profitable than cattle raising. The beef product will be much improved but the supply available for export doubtless

Fig. 10. A FORMER CALIFORNIAN'S ATTRACTIVE HOME IN THE ARGENTINE
will not increase more rapidly than the combined factors of increased population there and among nations consuming her surplus, and the relative decrease of beef production elsewhere. South American beef surplus will be in strong demand; obviously countries willing to pay the highest premium for it will secure it. Again, the cost of production is sure to increase with increased cost of labor and land. Under such conditions it is not anticipated that the business of raising beef cattle in the United States will be menaced permanently by Argentine competition.


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