

LIVE STOCK AND RECONSTRUCTION.

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SITUATION CREATED BY THE WAR.

THE Great War's effect on live-stock production has been profound the world over. Excepting only wool in Australia and horses in America, all kinds of animal products and all kinds of domestic animals have shared in the advance in prices. The price advance which began almost immediately with the Kaiser's defiance of civilization in 1914 culminated in 1918. Record prices, both for market stock and for pure-bred animals, were broken right and left. For example, on the Chicago market, native beef steers reached a price of \$20.50 per 100 pounds live weight on December 11, 1918, with an average price for the year of \$14.65. A car-load of hogs sold at \$20.95 per 100 pounds in September, 1918, and the average for the year on the Chicago market was \$17.45, excluding pigs. Lambs had an up-and-down time of it, but broke records also, Colorado lambs bringing \$22.10 in April, and outselling spring lambs for the first time.

Prices for pure-bred animals have been the highest known, all breeding nations sharing in the general prosperity. A Shorthorn bull in Argentina at \$39,600, a Hereford in the United States at \$31,000, an American Berkshire boar at \$10,000, and a Holstein bull calf in the United States at \$100,000 are reported sales indicative of the confidence breeders have in the future of the breeding business. A sale average of \$1,865 from one of our leading Shorthorn herds marks a record for this breed second only to the New York Mills sale.

One of the most remarkable developments of the year was the Hereford "boom" in England. The dispersal of the well-known Hayter herd brought an average of \$2,556.12, the top being the bull Ringer at \$43,200. About the same time, a former owner of Ringer sold one of that bull's sons for \$35,400. No better indication of confidence in the future

outlook of live-stock breeding can be found than in Great Britain, the home of most of our improved breeds of live stock, and it is a significant fact that nearly all the animals sold during the year at the 1918 British sales were bought by British breeders for British herds and flocks. The export trade has had little to do with these prices. British breeders are laying the foundation for the work of the reconstruction period.

The insatiable demands for meat directly or indirectly due to the war have been wonderfully well met by American live-stock farmers. Europe's home supply of meat and milk has declined sharply, owing in part to the actual loss of animals but more to the shortage of the concentrates needed for meat and milk production. During the last year of the war shipping space was at a high premium. Every ship the Allies could spare was thrown into the trans-Atlantic service in order to rush American soldiers to the battle front. Bulky freight could not be shipped unless it was of a military character. Food for human beings therefore had precedence over feed for animals. It takes less shipping space to send to Europe a ton of bacon, beef, or condensed milk than it does the feed required to produce this amount of food. Europe in consequence had to get along as well as she might without feedstuffs from America. America, therefore, sent meats and other animal products in enormous quantities.

It was a feat of which the American farmer has every reason to be proud. For more than 10 years every agency in the United States which is in touch with agricultural progress has urged an increase in beef production. The peak in cattle production in the United States in proportion to population was reached in the census year 1900. In that year there were 89 head of cattle of all kinds per 100 of the human population, in 1910 there were 67, and the number was 64 on January 1, 1919. The number of cattle other than dairy cows was 67 per 100 people in 1900, as many as the number of all cattle 10 years later. Other cattle decreased to 45 per 100 people in 1910 and stood at 42 on January 1, 1919. There has, therefore, been a marked disparity between our increasing population and our beef supply since the year 1900. In fact, at the opening of the war we had actually

ceased to play an important part in the export fresh-beef trade. For the fiscal year which ended June 30, 1914, we exported less than 7,000,000 pounds of fresh beef. However, our beef-cattle stocks were slowly increasing and we were therefore in a better position to furnish a considerable quota of beef for European needs than if the decline of 1890 to 1910 had not been checked. Dairy cows have held quite steady during the last 30 years; we had 26 for each 100 of the population in 1890, 23 in 1900, 22 in 1910, and 22 on January 1, 1919. The pork supplies sent abroad in such staggering volumes have been partly made up by the usual surplus, which, however, had been declining before the war, and also by an increase in production, especially in 1918. Lamb, mutton, and poultry products have not been exported in any important quantity, but these products played a vital rôle in releasing for export other foods, such as beef and pork products.

An important source of meat and dairy products for Europe was obtained by actual sacrifices on the part of the American people. The moral effect of these sacrifices on the people of England and France was of the utmost importance. Next to the military service, nothing America has done is so much appreciated among the allied nations as the Nation-wide movement in the United States to reduce meat and wheat consumption by voluntary effort. In the United States the sentiment against any one who refused to live up to the rules of the Food Administration was such that people were branded as "slackers" if they did not observe the published rules. England used meat and sugar cards and France bread and sugar cards. Each person's allowance was definitely fixed and beyond his allotment he could not go. If he wanted to eat a week's allowance in a single day he could do so, but he could get no more until the next week.¹

WHAT HAS EUROPE DONE?

As a member of the American Agricultural Commission to Europe, the writer was charged specifically with the study of live-stock conditions. He was instructed to ascertain

¹The writer was in England on the first gasoline-saving Sunday in the United States. The success of that effort made a great impression on the minds of British people.

(1) how well farmers and breeders in the allied countries were meeting the war's demands and keeping up their herds, (2) what more American live-stock producers could do than they were already doing in order to hasten the successful termination of the war, and (3) what assistance, if any, America could render in the work of live-stock reconstruction.

THE MAINTENANCE OF HERDS.

The fear has been freely expressed that the war has caused a slaughter of live stock which is almost irreparable. It is true that in some regions the damage done both directly by invasion and indirectly by shortened feed supplies, especially high-protein cakes, has been considerable. The invader wielded a two-edged sword, and he wielded it with one eye cast on the greatest possible damage to the enemy and the other on the greatest possible amount of benefit to Germany in the economic reconstruction after the war. The iron and coal fields of Belgium meant raw material to German factories; the Germans seized them. The French sugar-beet industry meant competition in the world's markets with German sugar; the German armies destroyed three-fourths of the beet-sugar factories in France. The German farmers of the Rhine provinces had envied for years the fine draft horses of Belgium; the Germans compelled the sale at public auction of all but a few which were quickly rushed across the Dutch border, and to-day there is scarcely a horse left in Belgium except those used for military purposes. The invaded territory of France is regarded by the French as swept clean of domestic animals, and probably rightly so. Serbia and other invaded countries doubtless suffered in a similar manner. What has occurred in the great unknown—Russia—and what will happen there before conditions become settled can only be conjectured. If people starve to death in Russia, which travelers just out of Russia say will happen, many animals will starve also, but the starvation of human beings will be most acute in the cities and there may be rough forage enough in the country districts to pull the animals through. However, the almost complete demoralization of Russia has extended to the farms, and production of farm products fell off pitifully in 1918.

How many animals have been lost in Europe as a whole is therefore largely guesswork. An estimate of 100 million head has been made in the United States, and a Canadian authority has been recently quoted with a larger estimate. I venture the opinion that the total figure does not exceed 75 million and probably is nearer 50 million. By far the largest part of this total is sheep and hogs, both of which come back quickly.

LOSSES IN THE UNITED KINGDOM.

The commission was somewhat prepared to learn that the decline of animals in the United Kingdom and France had been less than at first reported. The official figures available before we left Washington indicated as much. On our arrival in England the 1918 agricultural statistics had just been published, and from official British sources the following figures are compiled showing live stock in the United Kingdom and its component parts for 1909, 1914, 1917, and 1918.¹ The figures are for June 4 of each year.

Live stock in the United Kingdom.

MEAT ANIMALS.

Division and class.	1909	1914	1917	1918 ²
United Kingdom:				
Cows and heifers.....	4,360,982	4,595,128	4,514,803	.....
All cattle.....	11,761,830	12,184,505	12,382,236	.....
Sheep.....	31,839,799	27,963,977	27,867,244	.....
Pigs.....	3,543,331	3,952,615	3,007,916	.....
England and Wales:				
Cows and heifers.....	2,359,066	2,484,220	2,464,794	2,577,970
All cattle.....	5,844,817	5,877,944	6,227,148	6,200,490
Sheep.....	20,290,154	17,259,694	17,169,857	16,475,180
Pigs.....	2,251,068	2,481,481	1,918,541	1,697,070
Scotland:				
Cows and heifers.....	435,110	453,703	441,802	451,949
All cattle.....	1,176,165	1,214,974	1,209,859	1,208,696
Sheep.....	7,328,265	7,025,820	6,873,234	6,863,168
Pigs.....	129,819	152,768	132,945	127,615
Ireland:				
Cows and heifers.....	1,566,806	1,657,205	1,608,207	.....
All cattle.....	4,740,848	5,091,587	4,945,229	.....
Sheep.....	4,221,380	3,678,463	3,824,153	.....
Pigs.....	1,162,444	1,318,366	956,430	.....

¹ The writer is indebted to Mr. E. B. Shine, head of the live-stock branch of the English Board of Agriculture, for their figures.

² Figures for Ireland not available.

Live stock in the United Kingdom—Continued.

HORSES ON FARMS.

Division and class.	1909	1914	1917	1918
United Kingdom.....	2,091,743	2,237,783	2,190,318	.....
England and Wales.....	1,348,503	1,399,547	1,372,822	1,375,830
Scotland.....	204,490	209,360	210,048	209,883
Ireland.....	528,806	619,028	597,692	.....

Without going into extensive detail, the reader's attention is called to the following facts: There are practically the same number of cows and heifers and more cattle of all kinds in the United Kingdom than at the outbreak of the war and considerably more than in 1909. In England and Wales this is especially marked. Sheep have declined considerably, especially in England and Wales, but are apparently more numerous in Ireland than at the outbreak of the war, although fewer than in 1909. Pigs have fallen off sharply. Horses have held their own very well during the war and are more numerous than in 1909.

The most serious problem the live-stock farmers confront in Britain at present is the supply of concentrates. The country went into the winter with a fraction of the amount of cake usually on hand and very little in sight. When we left for home, the war was still in progress and the ministry of food had announced that no concentrates would be available for fattening pigs. Preference was given to dairy cows, work horses next, and then breeding animals and young stock (dairy heifers, etc.). There was very little prospect for cattle fattening during the winter, both because of the cake shortage and because of a short and poor root crop. Word coming from England during Christmas week indicates that the situation has improved somewhat, as concentrates are being allowed to pigs.

BRITISH BREEDERS CONFIDENT.

A visitor to Great Britain is impressed with two outstanding facts in her live-stock industry: (1) The breeders have managed to get along very well in the face of a prolonged

war and have maintained the number of their herds remarkably well, and (2) they have the utmost confidence in the future.

Only pigs and sheep have declined in numbers in the United Kingdom. The reason for the decline in pigs is easy to determine. British farmers do not raise pigs on grass. They use kitchen waste and dairy by-products, but, above all, grain offals and other concentrates. Of course, the pinch in the supply of grain caught the pig raisers. The total number raised is small, however, and the industry is of less importance to British farming than the sheep industry. So England depended on American pork products and let her own production lag for the period of the war. There is no indication, however, that the supply of choice breeding pigs was not kept going. Many herds did not have feed enough and the sows were in pretty thin condition. A college herd which the writer saw did not have feed enough to grow out the pigs.

The sheep industry is in a more serious situation all over Europe than any other animal industry. England has been rather hard hit and her flocks have shown quite a decline, especially where they were run on a succession of forage crops, "pastured," as the English say. These sheep require a considerable amount of skilled labor, and the difficulty of getting it caused the sale of some flocks. High prices in 1917 tempted many farmers to sell, as fat ewes brought as much as live wethers of equal weight. In Scotland and northern England a severe storm in April, 1917, in the midst of the lambing season, caused heavy losses. So far as the writer could ascertain the flocks which have been sold in Britain are those producing market stock. Pure-bred flocks are too valuable to sacrifice, and though there were many threats of sales for various reasons there are few if any actually recorded cases of pure-bred flocks being sold to the butcher.

British breeders universally have confidence in the future outlook for the live-stock business. This is the reason why one does not see any evidence of slaughter of breeding stock. As a class British breeders are preparing for an active demand for breeding animals after the war.

FRENCH LOSSES.

Crossing the channel to France, we find that actual invasion has caused losses of a serious character. The number of sheep is about 6,000,000 less (40 per cent), horses 1,000,000 less, pigs 3,000,000 less, and cattle 2,000,000 less than before the war. Perhaps half the loss in meat animals is represented by the number in the invaded districts, which the French assume to be entirely lost and which no doubt are mainly destroyed. The loss in horses represents about the net destruction of Army horses. No one in France is worrying about the pig situation. There are sufficient supplies of breeding animals to come back quickly to normal production.

Neither does the cattle situation seem to give every one the concern that the sheep situation causes. The cattle population has not suffered since the first shock of the invasion. That caused a decline of 2,000,000 head in the first year of the war. Since 1914 the number of cattle in France has declined less than 2 per cent and there are now more young cattle than before the war. In some parts of the country the cattle have actually increased in numbers since the beginning of the war. If, therefore, the country can prevent the slaughter of the young stock now growing up, some authorities believe that in 10 years France will have more cattle than ever before in her history.

We found all authorities in France deeply concerned about the sheep situation. A drop from 16,000,000 to 10,000,000 head during the four years is indeed serious, especially when wool and mutton are in great demand. The extremely high prices have had much to do with it, but the labor shortage is probably the principal reason, and the invasion itself accounts for about one-sixth of the total loss. The majority of French farms are unfenced. Cattle are tethered out and sheep herded. Shepherds went into the army, and it has been found very difficult to replace the skilled shepherds with the labor material available.

Numbers in French herds before and during the war.¹

Class.	Dec. 31, 1913.	Dec. 31, 1914.	June 30, 1915.	June 30, 1916.	June 30, 1917.
Cattle:					
Bulls.....	284, 190	231, 653	211, 343	221, 300	214, 764
Steers.....	1, 843, 160	1, 394, 384	1, 262, 315	1, 321, 887	1, 295, 120
Cows.....	7, 794, 270	6, 663, 355	6, 346, 496	6, 337, 799	6, 238, 690
“Breeders” (over 1 year)...	2, 853, 650	2, 549, 417	2, 581, 870	2, 678, 837	2, 677, 870
“Breeders” (under 1 year)...	2, 012, 440	1, 829, 434	1, 884, 825	2, 032, 102	2, 016, 860
Total cattle.....	14, 787, 710	12, 668, 243	12, 286, 849	12, 723, 946	12, 443, 304
Sheep:					
Rams over 1 year.....	293, 640	258, 447	239, 832	209, 760	188, 204
Ewes over 1 year.....	9, 288, 460	8, 390, 863	8, 033, 886	7, 143, 685	6, 463, 720
Wethers over 1 year.....	2, 580, 810	1, 881, 295	1, 572, 236	1, 411, 211	1, 139, 320
Lambs.....	3, 968, 480	3, 507, 756	3, 637, 235	3, 314, 555	2, 795, 350
Total sheep.....	16, 131, 390	14, 038, 361	13, 483, 189	12, 079, 211	10, 586, 594
Pigs:					
Boars.....	38, 560	36, 179	31, 501	27, 631	26, 090
Sows.....	906, 790	802, 858	785, 989	660, 631	628, 040
Pigs for fattening.....	2, 800, 760	2, 226, 456	1, 632, 252	1, 317, 432	1, 300, 840
Pigs under 6 months.....	3, 289, 740	2, 859, 994	3, 041, 054	2, 442, 404	2, 245, 310
Total pigs.....	7, 035, 850	5, 925, 487	5, 490, 796	4, 448, 366	4, 200, 280
Horses.....	3, 231, 000	2, 105, 000	² 2, 156, 000	² 2, 246, 000	2, 283, 000

¹ From *Le Troupeau Français après trois ans de Guerre*, Paris, Ministère de l'Agriculture, 1918, and reports on file with U. S. Bureau of Crop Estimates.

² For Dec. 31.

Obviously considerable liquidation resulted. No one is sure where French farmers will get the stocks to recuperate rapidly the French sheep-breeding industry. The United States has no sheep to spare, and the French may turn to Argentina or Australia.

Although the nation has suffered much greater actual losses in animals than has Great Britain, the big live-stock problem in France this winter (1918-19) is the feed supply. French farmers are not quite so dependent on oil cakes as their neighbors across the channel, because they grow more legumes, alfalfa, clover, etc. However, the armies are calling for great supplies of forage, and the prices for all kinds of feed are so high that the providing of winter maintenance is a difficult problem. They see the future much as do the British farmers, namely, that there is bound to be a good

demand for all kinds of breeding animals for some time to come and that if they can prevent the slaughter of young animals now maturing they will somehow manage to find the feed to support them.

French farmers were sending beef cattle to market in excessively large numbers in October. During the week of October 14 nearly 10,000 beef cattle were received at the Villette market in Paris, a greater number than during pre-war times. In one day during that week 15,000 sheep were received, which is about the same as before the war. The pasture season was about over and there was no feed in sight to carry fat stock into the winter or to do more than supply rough feed through the winter until grass comes again. England's problem is similar, and a shortage of native beef was regarded as certain from January to June in both France and England. The temptation to slaughter young cattle and cows will therefore be stronger in France than in England, for France has not used refrigerated beef to any great extent, except for the Army. The agricultural authorities hope that supplies of refrigerated beef will be adequate to keep prices down and that civilians will eat it rather than insist on having native beef. Good supplies of meat from America will therefore help French farmers materially to prevent further loss in their herds.

Taken as a whole, therefore, French herds will be in a fairly good position to do their share in restocking decimated herds after the war.

BREEDING HERDS IN CENTRAL EMPIRES.

What the condition of the herds in the central empires is no one could tell us. However, the loud complaints of food shortage for human beings in Germany were not found to have much foundation in fact when our armies got into German territory, and it is a reasonably safe assumption that there has also been enough rough feed available for the actual maintenance of breeding stock. It is hardly likely that a people with such an eye to the main chance as the Germans would overlook the demand after the war for breeding animals, especially when the demand would come from adjacent territory.

POSSIBLE OUTLET FOR AMERICAN DAIRY COWS.

The milk supply has been acutely deficient somewhere in Europe almost from the beginning of hostilities, because there has not been concentrated feed enough to keep up the milk flow of the cows. Breeding cattle can get along pretty well on coarse fodder, but milk cows must have concentrates, especially when good pasture is not available. The loss of dairy cows in invaded areas must be made good as quickly as possible, and America may be drawn on for such animals. This can be considered a possibility of future trade developments but not by any means a certainty.

WHAT AMERICA CAN DO.

As a matter of fact, European farmers are not going to buy meat animals or dairy cows in the United States or anywhere else beyond the seas if it can be avoided. It is not natural that they should. They will first draw on the nearby supplies with which they are familiar and which are already acclimated. However, America has a direct and very great interest in the rebuilding of the live-stock industry of Europe, both for humanitarian and for strictly business reasons. Our greatest service now and our best business policy is to furnish Europe with meat and dairy products, enabling European farmers to concentrate their entire efforts on the conservation of breeding herds and avoid all unnecessary slaughter. The more Europe can draw on us for these products, the more rapidly she can restock and resume normal operations.

In this connection the shipping situation must not be overlooked. It will be some time yet before the world has restored the damage done by the German U-boats. Therefore, shipping space will be at a premium for some time to come. Live animals require a great deal of room on shipboard, and freights are, of course, very expensive. It is much better from every standpoint to ship animal products, such as meat, condensed milk, butter, and cheese, than to ship live animals.

THE HORSE SUPPLY.

The horse industry presents an entirely different aspect. While British horses are quite as numerous on farms as before the war, there has been such a large increase in the

amount of cultivated land in the Kingdom that actually the horse supply is short. Tractors were resorted to, and some of the obsolete English steam plows were brought back into service. In the cities the shortage of horses is most evident and one sees a large number of small donkeys and ponies used for light hauling. In France oxen have always been used much more extensively for farm work than in England, and the army demand on French farmers for horses was met by replacing them with oxen. While the French farms are a million horses below the prewar normal, there is no means of telling just how much effect the replacement has had on the horse situation. It has had some effect, because the price of horses in France is possibly a little less than in England. There is no doubt that breeders of Percheron horses in France have avoided sacrificing mares. The Government has assisted them in their efforts to conserve their stocks and has requisitioned only barren mares. While 1917 and earlier years may have seen some falling off in breeding, all authorities agreed that farmers bred more mares in 1918 than usual. So far as "seed stock" is concerned, French Percheron studs have not been injured seriously. Belgium, of course, was cleared of horses by the invaders, and from the reports current in military circles the Germans were not well supplied with horses during the fall campaigns.

Horses in France and England are from twice to four times as high in price as in America. Ordinary farm work horses sell from \$500 to \$800, and choice geldings suitable for heavy city trucking bring \$1,250 to \$1,650 in Great Britain. The disparity between these prices and those common in the United States will become adjusted in time. How soon that time will come is uncertain. In fact, the opening up of the horse trade from America to Europe depends (1) on the number of horses demobilized from the armies, (2) on available shipping space, and (3) on feed supplies. If the writer were a prophet he would venture on a date somewhere between April 15 and September 1, 1919, with the odds favoring July 1 or thereabouts.

Horses again present a possible exception, in the writer's opinion, to the demand for American breeding stock. Already representatives of the Belgian Government have visited

the United States to determine what, if any, supplies of Belgian horses can be spared from the United States to restock that unfortunate country. It is unknown whether any orders have actually been placed.

The inquiries for Belgian horses are not unexpected. A novel situation is developing in England, however, in the growing interest in Percheron horses in that country. Growing out of the remarkable record of grade Percheron horses from the United States with the British Army, an interest in our most popular breed of draft horse has developed in England which is of unusual historical importance, if, indeed, it does not become important to our breeders financially. Since the beginning of the war a few Percheron horses have been taken from France to England and a British Percheron Society was formed. Now interest is being directed across the Atlantic, and in October a shipment of 26 Percheron mares and 1 stallion from the United States were landed at Glasgow and the animals were sent to Norwich, England, where they now are. There are rumors that the members of the British Percheron Society will look into the supply of available Percherons in the United States before another winter comes.

AMERICAN BREEDERS AND THE FUTURE.

The war in effect is over. American breeders have loyally done their best to support their sons and brothers in khaki and their comrades in the armies of the Allies. What shall be the future course for American live-stock producers? Shall they enter a period of broad expansion or shall they adopt a more conservative policy? The possibilities of America in agricultural production have not been approached. When there is an incentive, especially a double incentive such as we have had in 1918 with wheat and hogs, no one knows what American farmers can do even in the short space of a single season. There were, according to the Bureau of Crop Estimates, 65,000,000 pigs in the United States on September 1, 1918. If there were an average increase of only two brood sows bred on each farm the number of hogs in the United States would be doubled in a year's time. This country is the world's great pork-surplus territory; yet even hungry Europe would find difficulty in con-

suming what we could actually produce in pork if we really extended ourselves to the utmost. Broadly speaking, the corn crop is the limiting factor in American pork production. So long as the crop stays around three billion bushels, the pork surplus will remain somewhat constant, with a rather slow but steady growth of production for local consumption outside that area.

Good advice, therefore, in the hog industry seems to counsel holding steady at present production. In beef cattle we may expect to feel next year the effects of the western and southwestern drought. The slaughter of cows and calves in 1917 and 1918 on account of the drought, which, happily, is now broken, means slaughter of less than the normal number of females in 1919 and 1920. Sheep may be affected by the falling off of the military demand for woolen goods, but fibers will recover more slowly than meats, and meats more slowly than cereals. We should bear in mind that the loss in sheep in Europe seems greater than of other meat animals. While the high wool prices of 1918 can not be expected to continue, future wool prices should be remunerative and the sheep industry profitable, if rationally and intelligently handled and if sheep are protected from prowling dogs.

While accurate information concerning the meat supplies throughout the world unfortunately is lacking, there is reason to believe that the surplus now on hand in the Southern Hemisphere, if there really is a surplus, will be rapidly absorbed as soon as shipping becomes available. There are also the best of reasons to believe that for several years to come European farmers will slaughter a smaller number of meat animals than normally if sufficient supplies of meat can be secured from abroad. They must save so far as possible every female for breeding purposes.

These facts, so far as they go, lead us to believe that American farmers and live-stock producers should pursue a policy of moderate growth, expanding the meat-animal industry in a rational, normal manner, improving methods, introducing more economical methods of feeding and management, and by skill and science reducing their production costs to the lowest possible point.