

The Horse and Mule Outlook

B. H. FRAME

During the past few years horse and mule prices, in relation to the general price level, have been the lowest that this country has experienced since the Civil War. These low prices have resulted in a decrease in number of horses and mules on farms in the United States from 26,436,000 in 1919 to 21,013,000 in 1927. The decrease for horses alone has been even greater, as mules increased for the same period from 4,954,000 to 5,734,000. The decrease in Missouri has been from 1,414,000 in 1919 to 1,033,000 in 1927 for horses and mules combined, while mules have decreased during the same period from 374,000 to 358,000.

Farmers are asking the reasons for such low prices and how long these low prices are to continue. Three reasons may be named as chiefly responsible for the present situation:

1. General price situation unfavorable for farm commodities as a group.
2. The displacement of horses* by automobiles, trucks, and tractors.
3. The position that horses occupy on the regular production cycle.

GENERAL PRICE SITUATION UNFAVORABLE FOR FARM COMMODITIES AS A GROUP

Farming, as a whole, since 1921 has experienced one of its most serious depressions in the history of this country. This has caused a reduction in number of farms in the United States from 6,448,343 in 1920 to 6,371,617 in 1925. Nor was this caused entirely by consolidating smaller farms into larger ones since the total farm acreage decreased for the same period from 955,883,715 to 924,889,380 or from an average of 148.2 acres per farm to 145.2 acres. During the same period Missouri farms decreased in numbers from 263,004 to 260,478, and in size from

*Both horses and mules will be referred to as horses except where they are designated separately.

132.2 acres to 125.3, causing a decrease in farm acreage from 34,774,679 to 32,637,043. Not only has there been a decrease in farm acreage but there has also been a decrease in the intensity of cultivation. All this abandonment of acreage and decrease in intensity caused a decrease in the number of farm work animals needed. Surplus horses were disposed of, with a natural resultant of declining prices.

THE DISPLACEMENT OF HORSES BY AUTOMOBILES, TRUCKS, AND TRACTORS

The motor vehicle registration figures (automobiles and trucks) for the United States show an increase from 1,258,000 in 1913 to 22,330,000 in 1926. While most of city automobile owners never owned a horse, it is undoubtedly true that a large percentage of the cars in small towns and in the country have displaced driving horses. The increase in cars per 1000 population has proceeded very rapidly, so rapidly in fact that it is believed by competent authority that increase in numbers from now on will depend largely on increase in population. The displacement of horses by trucks has been more important in proportion to numbers of trucks than in the case of automobiles. The displacement of horses by city trucks has an especial significance because the number of horses in cities is of more importance than their proportion to total numbers in the country seem to indicate because of the comparatively short life of city horses.

In the best farming regions of the United States and to a lesser extent in the poorer sections, tractors are exercising a tremendous influence on the horse situation. On 100 Illinois farms, on which there were 101 tractors, approximately $2\frac{1}{2}$ horses were displaced by each tractor.*

The following figures show the increase in the number of tractors since 1920.

APPROXIMATE NUMBER OF TRACTORS ON FARMS

<i>Year</i>	<i>United States</i>	<i>Missouri</i>
1920	246,000	8,000
1925	507,000	13,000
1927	800,000	-----

The question naturally arises: Will tractors and trucks continue to increase in importance as a source of farm power? While the writer is decidedly of the opinion that the day of the horseless farm is not just about to dawn, he does believe that trucks and tractors will continue to displace horse power in certain sections of the country and especially on the larger farms. Just how far this movement will go it is impossible to say, but it is certain that there are still certain kinds of farm work and

*Illinois Experiment Station Bulletin 231; Winter 1918-1919.

certain types of farms for which horses are better suited, both as to cost and general adaptability, than any tractor which has yet come on the market. On the other hand there are several tractor improvements and other mechanical inventions which seem bound to affect seriously the present economic position of the horse.

One of the tractor's greatest handicaps of the past seems about to be overcome, that is its unsuitability for corn cultivation. This more than any other one factor has held the tractor back in the corn belt but it is claimed by many practical farmers that tractor and farm machinery manufacturers have now put on the market attachments and improvements which have adapted the tractor to corn cultivation. Whether or not this is yet a reality, there can be no doubt that it soon will be a fact. Such an invention will probably be a factor toward larger farms and will also lower the size of the farm unit on which a tractor is a profitable investment. Another possible invention, which, however, is not so important for the present problem, is the mechanical corn picker. In the cotton belt, which is a horse importing region, tractors have made comparatively slow progress. This was to be expected because the hand labor of chopping and picking cotton makes up such a large proportion of the total labor requirement that the operating unit is necessarily small. This is especially true of picking. But there are some authorities who believe that a mechanical cotton picker will soon be invented and that the chopping can also be done by machinery. If this is true one can reasonably expect that tractors will increase in importance in the cotton belt. In some of the southern states, however, the topography is not so well suited to tractor operations as those of the corn-belt and wheat-belt states, and it is believed that the South will always furnish an important market for the surplus horses of the central and western states.

THE POSITION THAT HORSES OCCUPY ON THE REGULAR PRODUCTION CYCLE

It is getting to be generally recognized among farmers, as it has long been among other business men, that practically all business phenomena are subject to fluctuations; called cycles because of their regularity. The cycles in farm products are especially noticeable and pronounced possibly for two reasons. First, farmers as a whole, do not have the compact organization capable of united action, that other business men can and do have; and secondly, sufficient information on many agricultural products has not been available in the past.

Regardless of the cause, it is true that horses show a very decided cycle requiring about 22 years to complete. Figure 1 shows this from 1867 to 1926*. The last peak, in 1911, was followed by about three years

*Data and part of figure from the "The Agricultural Situation", by Warren and Pearson.

of vacillation and then a very sharp decline until 1920. Since 1920 there has been another vacillating period with a slight net loss.

The horse cycle is accentuated by the relatively long time required to raise a horse to work age, about four years. It is generally a year or two after horses have reached the overproduction point before farmers realize that there is an overproduction, and after breeding starts on the decline, horses of work age continue to increase for several years because of the maturing of young stock.

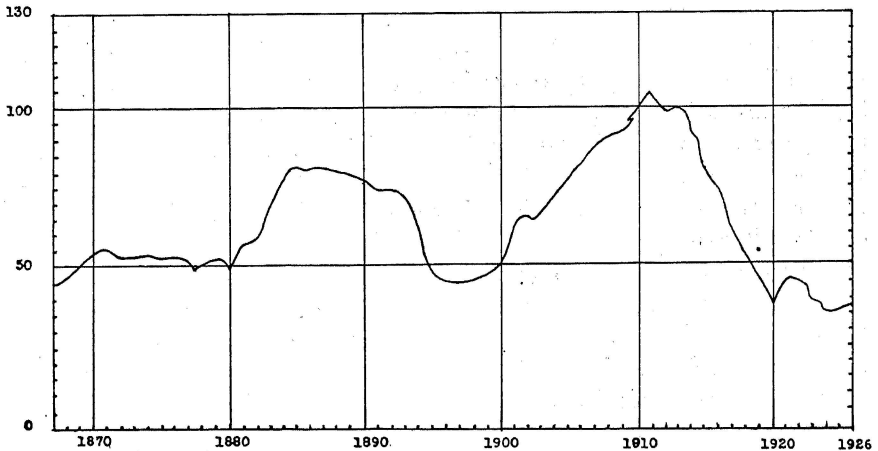


Fig. 1.—The purchasing power of horses. Compared with other things, horses are high in price for about 10 to 12 years and are low for an equal period.

This fact is clearly shown in Table 1 on horses and mules in the United States from 1910 to 1927. Although we had clearly passed into a period of overproduction in 1912, as shown by the decrease in purchasing power, the combined numbers continued to increase up to and including 1919. Since then numbers have fallen off rather rapidly.

It is generally recognized that violent fluctuations, either up or down, tend to be followed by violent fluctuations in the other direction. Horses had, in 1911, reached the highest peak that they had occupied since a period at least as remote as before the Civil War and were due for a decline. Two disturbing factors have been influential in the horse situation since 1911. One has been the World War. There is no doubt that the war, by using up vast numbers of horses from the United States, both in our own army and in those of our allies, tended to hold up the price of horses. The second factor, in direct opposition to the first, was the increased use of motor vehicles and power.

TABLE 1.—HORSES AND MULES ON FARMS OF U. S.; 1910-1927

Year	Horses (Thousands)	Percent- age of 1910	Mules (Thousands)	Percent- age of 1910	Total (Thousands)	Percent- age of 1910
1910	19,833		4,210		24,043	
1911	20,277	102	4,323	103	24,600	102
1912	20,509	103	4,362	104	24,871	103
1913	20,567	104	4,386	104	24,953	104
1914	20,962	106	4,449	106	25,411	106
1915	21,195	107	4,479	106	25,674	107
1916	21,159	107	4,593	109	25,752	107
1917	21,210	107	4,723	112	25,933	108
1918	21,555	109	4,873	116	26,428	110
1919	21,482	108	4,954	118	26,436	110
1920	19,848	100	5,475	130	25,323	105
1921	19,134	96	5,586	133	24,720	103
1922	18,564	94	5,638	134	24,202	101
1923	17,943	90	5,702	135	23,645	98
1924	17,222	87	5,730	136	22,952	95
1925	16,554	83	5,758	137	22,312	93
1926	15,778	80	5,780	137	21,558	93
1927	15,279	77	5,734	136	21,013	87

TABLE 1 (SECTION 2).—ALL HORSES AND MULES

	Horses (Thousands)		Mules (Thousands)		Total (Thousands)
	On Farm	Not on Farm	On Farm	Not on Farm	
1910	19,833	3,183	4,210	270	27,496
1920	19,848	1,706	5,475	378	27,407
1926*	15,778	1,232	5,780	486	23,276

*Number not on Farm Estimated for 1926.

TABLE 2.—HORSES AND MULES ON FARMS OF MISSOURI; 1910-1927

	Horses (Thousands)	Percentage of 1910	Mules (Thousands)	Percentage of 1910	Horses & Mules com- bined (Thousands)	Percentage of 1910
1910	1,073		343		1416	
1911	1,084	101	336	98	1420	100
1912	1,095	102	333	97	1428	101
1913	1,084	101	326	95	1410	100
1914	1,095	102	326	95	1421	100
1915	1,095	102	329	96	1424	101
1916	1,060	99	340	99	1400	99
1917	1,020	95	360	105	1380	97
1918	1,040	97	367	107	1407	99
1919	1,040	97	374	109	1414	100
1920	906	84	389	113	1295	91
1921	876	82	430	125	1306	92
1922	841	78	440	128	1281	90
1923	801	75	410	120	1211	86
1924	765	71	400	117	1165	82
1925	714	67	390	114	1104	78
1926	675	63	382	111	1057	75
1927	675	63	358	104	1033	73

Table 2 shows the number of horses and mules in Missouri from 1910 to 1927 inclusive. It seems that the farmers of Missouri had commenced to reduce their horse stock much sooner than the farmers of the entire United States.

Table 3 shows the prices received by producers for horses per head in the United States by years from 1910 to 1925, while Table 4 shows the farm price of horses in Missouri by months since 1916*. These prices should not be confused with the purchasing power graph shown in Figure 1. It is quite possible for the price of one commodity to go either up or down while its purchasing power moves just the opposite because while this one commodity is moving either up or down, other commodities, considered as a group may move still farther in the same direction. Both of these tables show that the actual price of horses is on the increase, the increase in Missouri since the low year, 1924, being 15.3%.

TABLE 3.—PRICES RECEIVED BY PRODUCERS FOR HORSES PER HEAD IN U. S.; 1910-1925*

Year	Amount
1910	\$146.00
1911	141.00
1912	140.00
1913	142.00
1914	135.00
1915	130.00
1916	130.00
1917	132.00
1918	130.00
1919	121.00
1920	119.00
1921	92.00
1922	84.00
1923	82.00
1924	76.00
1925	78.00

*Mules not included

Table 4 also brings out the seasonal variation of horse prices over an eleven-year period. Farmers are often confronted with the problem of whether to sell permanently surplus horses after the peak of horse labor is over for the year or to carry them over for higher prices in the spring. The peak of horse labor on most Missouri farms comes in the spring and early summer; in April, May, and early June. This is the time when farmers are preparing their land and planting their spring crops. Farmers are busy during corn cultivation and harvest; but, except for cutting wheat and oats, fewer horses are used per man so that there are generally

*Mules are not included in these prices.

TABLE 4.—THE FARM PRICES OF HORSES IN MISSOURI; 1916-1926*
(IN DOLLARS AND CENTS)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Average
1916	111.00	112.00	115.00	114.00	117.00	115.00	118.00	112.00	113.00	114.00	114.00	109.00	113.67
1917	113.00	114.00	117.00	118.00	120.00	122.00	121.00	113.00	118.00	116.00	119.00	114.00	117.08
1918	114.00	121.00	129.00	126.00	127.00	126.00	122.00	119.00	118.00	115.00	112.00	112.00	120.08
1919	105.00	110.00	108.00	110.00	115.00	112.00	109.00	108.00	104.00	98.00	99.00	97.00	106.25
1920	101.00	102.00	105.00	112.00	110.00	108.00	108.00	106.00	106.00	95.00	85.00	80.00	101.50
1921	75.00	80.00	77.00	77.00	75.00	70.00	70.00	70.00	65.00	65.00	60.00	60.00	70.33
1922	57.00	58.00	58.00	58.00	63.00	66.00	63.00	60.00	55.00	52.00	54.00	52.00	58.00
1923	52.00	56.00	60.00	62.00	65.00	63.00	59.00	56.00	57.00	51.00	50.00	50.00	56.75
1924	50.00	52.00	53.00	54.00	54.00	52.00	55.00	56.00	55.00	52.00	52.00	48.00	52.75
1925	50.00	55.00	57.00	54.00	58.00	58.00	56.00	56.00	54.00	59.00	52.00	55.00	55.33
1926	56.00	70.00	66.00	65.00	65.00	63.00	65.00	60.00	56.00	58.00	55.00	51.00	60.83
Average	80.36	84.55	85.91	86.36	88.09	86.82	86.00	83.27	81.91	79.55	77.45	75.27	

*Mules not included.

a few idle horses. If such horses are permanently surplus, should they be sold at this time or held in the hope of getting a higher price?

For the eleven-year period covered by Table 4, horses have averaged higher in price in May than in any other month. The average price in May for the past eleven years has been \$88.09, from which price they gradually declined to \$75.27 in December and then started up again. Assuming that little or no wheat is grown, the problem of feeding idle horses from July or August until the following spring becomes rather serious. If plenty of pasture and cheap roughage is available, they can be carried over fairly cheaply, but one can ordinarily expect a price rise of only about \$5.00 from the first of August until the following May. There would be other items of expense besides the feed and the risk of loss from death or blemish. Most decidedly it would not pay, under average conditions, to hold such permanently surplus horses from August to May for higher prices.

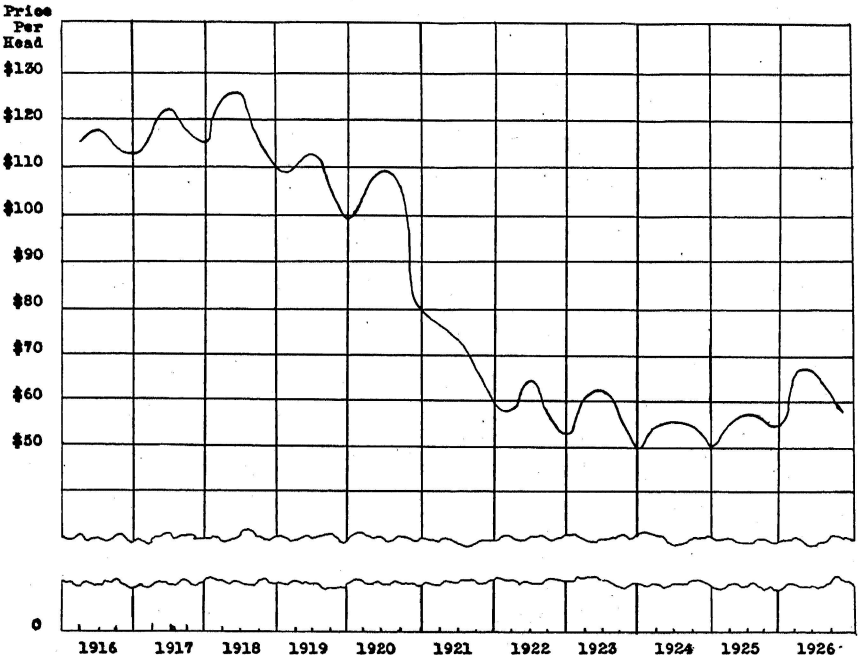


Fig. 2.—Farm Values of Work Horses (Mules not included) in Missouri 1916-1926 as reported by the U. S. Department of Agriculture.

On farms where much wheat is grown the idle horse problem does not become so acute until about November. From November to the following May the rise that could be normally expected is only about

\$10.50. One can hardly see how they could ordinarily be carried through the winter on \$1.75 per month, but if stalk pasture, cheap hay, etc. could not possibly be utilized in any other way it might pay to keep them over.

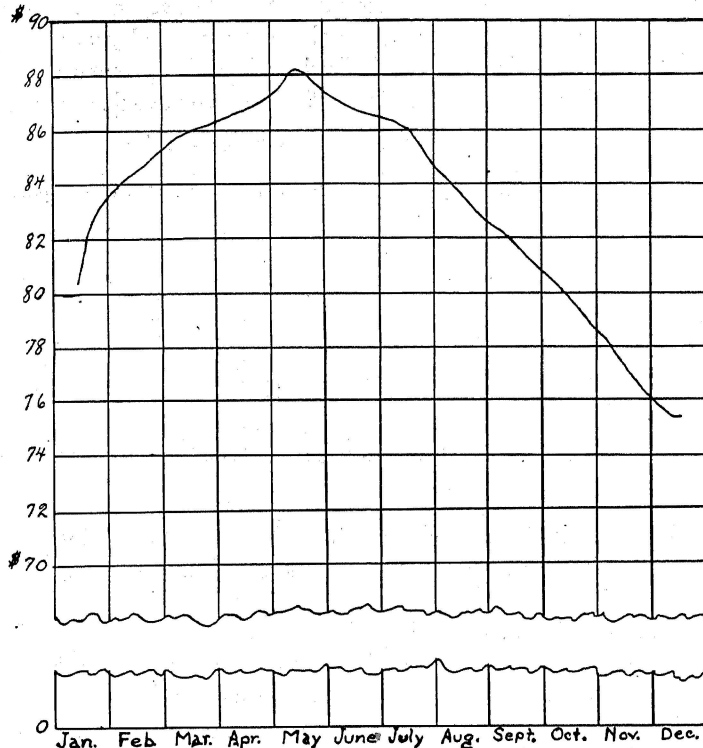


Fig. 3.—Seasonal Fluctuation of Farm Value of Missouri Work Horses (Mules not included). As reported by the U. S. Department of Agriculture.

There is another very pertinent fact to be considered at the present time. Starting in February 1925 horses have been gradually increasing in price. This movement amounted to \$2.58 in 1925 and \$5.50 in 1926. While this is not much, whatever this amount is it can be added to the normal seasonal advance while the price movement of horses is upward. Whether this movement will be long continued depends on factors discussed at other places in this circular.

The course of Missouri farm prices for work horses is shown graphically in Fig. 2 while Fig. 3 brings out the seasonal variation of the same during the past eleven years.

FUTURE SUPPLIES

As previously pointed out when the cycle of purchasing power is well started on the decline, breeding operations are restricted and even

if breeding were again increased as soon as it became evident that more horses were needed, the number of work horses would continue to decrease because of the small number of horses coming to maturity for the next three or four years. But breeding is not started again thus promptly, so that the decrease in numbers continues for several years.

There are good evidences for believing that the present cycle will prove no exception to the rule. Table 5 shows the tendency in horse

TABLE 5.—COLTS FOALED PER 1000 HORSES AND MULES

Year	All Farms Numbers	On Farms of 30,000 Crop Reporters	
		Numbers	Percentage decrease
1910	*87.7		
1920	*63.0	91.0	
1921	58.4	82.9	8.9
1922	51.9	71.3	14.0
1923	45.3	59.5	15.1
1924	39.2	48.6	18.3
1925	*36.5	43.8	9.9
1926	33.8	40.6	7.9

*Census Reports. All other figures on "all farms" computed from 'On Farms of Crop Reporters'.

breeding in the United States since 1910. The percentage column shows that while breeding is still on the decline, the trend has been considerably slowed up within the last two years.

Table 6, on "The Years to Replace Horses at Present Rate of Breeding", presents a slightly different viewpoint on the same problem. The states of the United States are grouped according to the number of years that it will take to replace the present number of horses at the present rate of breeding. It is impossible to say just how long the average horse lives, but it is certain that the figure cannot be higher than the time it takes, at present rate of breeding, to reproduce the horses in the second (15.1 to 20 years) group. It will be noticed that the first two groups possess only 10.2% of all horses in the United States so that it is evident that there are only 10.2% of all horses being replaced as fast as they die off. On the other hand the present rate of breeding is only sufficient to replace the three lower groups, comprising 20.4% of all horses, every 51.5 years. In the most important groups, the third, fourth, and fifth, possessing 69.4% of all horses, the present rate of breeding is sufficient for a replacement varying from 21.9 years to 34.1 years. These tables also indicate that not only is the number of horses declining very rapidly but that the average age is becoming greater and that the decrease from now on, with the same rate of breeding, will be at an even greater percentage rate. One may well wonder where the horses of the next few years are coming from.

TABLE 6.—YEARS TO REPLACE PRESENT HORSES AT PRESENT RATE OF BREEDING*
(1925 CENSUS)

States	No. of horses all ages	% of all horses in U.S.	Colts under 2 years	Years to Replace
Less than 15 years— Ariz., Mont., N. Mex., Nev., Wyo.	1,143,041	6.9	171,360	13.3
15.1—20 Years—Fla., Miss., Tenn., Utah	537,943	3.3	63,081	17.1
20.1—25 years—Col., Idaho, Ia., Ore., S. Dak	2,740,904	16.6	250,036	21.9
25.1—30 years—Ga., Kan., Ky., La., Neb., N. Dak., Okla., Texas, Wash.	4,732,109	28.6	343,397	27.6
30.1—40 years—Ark., Ala., D. C., Ill., Md., Minn., Mo., Va., W. Va., Wis.	3,997,903	24.2	234,747	34.1
40.1—60 years—Cal., Del., Ind., Mich., Ohio, S. Car.	2,074,646	12.5	95,076	43.6
60.1—100 years— N. Car., N. Y., Pa., Vermont	1,055,574	6.4	32,691	64.6
Over 100.1 years—Conn. Me., Mass., N. Hamp. N. Jersey R. I.	253,639	1.5	3,573	142.0
Total	16,535,759	100	1,193,691	27.7

*Rearrangement of a table published by the Horse Association of America.

CONCLUSIONS

What the future trend in the prices or profitableness of any commodity is going to be no one knows for certain, because new conditions are constantly arising which no one could have foreseen. In the foregoing pages the writer has given certain facts relative to the horse and mule situation as they exist at the present time and have existed in the past. From these present conditions, and a knowledge of what has followed such conditions in the past, one can draw certain conclusions of what will *probably* happen in the future. With these few words of explanation the following conclusions are given:

1. Eventually horses and mules must reach a new level of normality. We may fully expect that we will not need so many horses and mules, at least for many years, as we had at one time. It may as well be admitted that automobiles, trucks, and tractors have permanently taken the place of large numbers of work stock. It is improbable that automobiles will in the future displace many horses, but trucks and tractors have not reached what we might term their point of saturation, and their displacement of horses will continue until the same point is reached that automobiles have already reached. When such a point is reached there is no reason to believe that the usual factors of demand and supply

will not cause a recurrence of the cycle of production in much the same manner as before the days of motor vehicles and machinery.

2. It is not believed that the time of the horseless farm has yet come or will in the near future. Regardless of the superior efficiency of the tractor in performing the heavier work on the large farm, there is a large amount of work, in the aggregate, on any farm for which horses are more efficient, and undoubtedly there is a farm-size limit below which a tractor under any certain set of conditions is unprofitable. That this minimum size limit is being decreased by improvements in tractors and tractor machinery has been already mentioned but there is also a tendency for the size of farms to decrease.

3. There has been a considerable change in the type demanded by the market. This is the second time that such a change has occurred. When the automobile displaced the driving horse the market demand for smart roadsters in considerable numbers was entirely gone but there was still an active demand for heavy horses. The heavy city draying is now being done largely with trucks, and the truck and tractor are gradually taking over the heavier farm work. With the development of motor driven vehicles and farm machinery the medium weight, general purpose horse is coming into his own. Future demands will come mostly from the farmers of those regions (eastern and cotton-belt) where the topography of land, or type of farming, or both, precludes a great development of tractor farming, with of course some local demand from those farmers who do not raise colts in the horse-surplus regions. Of course, the South has always demanded mules for their cotton and sugar farm. The type of mules demanded by the South can, however, be produced by breeding medium weight mares to the heavier types of jacks.

4. It is very probable, where the conditions are such that colts can be produced cheaply, that by the time this year's breeding reaches work age the price will be remunerative. It should be remembered that the production of surplus horses in the corn belt, while the numbers, in the aggregate, are large, is distinctly the production of a by-product. In view of this fact, conditions favorable for colt production mean that only a moderate amount of farm work be available. Where horse labor requirements are such that the loss of the work of the mares during the foaling season is not serious and only a moderate amount of horse labor is available during the suckling season, the cost of raising the colt to weaning age is very little more than the breeding fee. From this point on until the time when the colt reaches work age, cheap pasture and roughage is very important from the standpoint of the cost of production. While from five to eight years is probably the best market age for horses and mules, a well developed three-year-old colt is able to do considerable of the lighter farm work and such work will probably entirely pay for the cost of keep from three years of age until they can be put on the market.