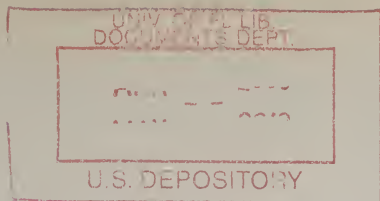


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A. D. MELVIN, CHIEF OF BUREAU.

BREEDING HORSES FOR THE UNITED STATES ARMY.¹

Although horses are now commanding higher prices than have been known for many years, there is evidently a great shortage in their production. The United States Army has for some years found it difficult to maintain an adequate supply of suitable horses, and it seems that if the efficiency of the cavalry is to be maintained it will be necessary for the Government to take up some systematic plan to encourage the breeding of horses of a type suitable for Army use.

During the past year the Secretary of War requested the cooperation of the Secretary of Agriculture in evolving some plan for enabling the Army to obtain suitable horses. The Secretary of War pointed out that the supply of horses fit for remounts is becoming more and more limited, and that the present indications are that the country would find it impossible to mount its Army from its own resources in time of war and is rapidly reaching a point where the needed supply of suitable remounts for the present strength of the Army would be extremely difficult to obtain, if obtainable at all. As a result this department designated a representative to join with a representative of the War Department in considering the subject and formulating a plan. The Department of Agriculture was represented by Mr. George M. Rommel, Chief of the Animal Husbandry Division of the Bureau of Animal Industry, and the War Department by Capt. Casper H. Conrad, jr., Third Cavalry, United States Army, detailed for duty in the Quartermaster General's Department in connection with the purchase of remounts. These gentlemen have outlined a plan for breeding horses for Army use, which is presented in the following pages. The statement setting forth the reasons why the War Department regards it as imperative for the Government to undertake the work of encouraging the breeding of horses for the Army was prepared by Capt. Conrad and is inserted

¹ From the Report of the Chief of the Bureau of Animal Industry for 1910.
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here with the consent and approval of the Quartermaster General. The plan for breeding the horses was prepared by Mr. Rommel with the assistance of Capt. Conrad and other officers of the Army stationed in Washington, and has been formally approved by the War Department. To carry out this plan would require appropriations for the use of the Department of Agriculture estimated at \$250,000 for the first year and \$100,000 a year thereafter.

THE NECESSITY FOR GOVERNMENT ENCOURAGEMENT OF BREEDING ARMY HORSES.

The difficulty experienced by the Quartermaster's Department in procuring remounts seems perfectly natural. The early settlement of the United States, particularly the eastern part, went on some time before the advent of steam and electric transportation, and the settlement of the western part even now in the most remote points takes place without the assistance of modern transportation. In all new countries the horse has played an important part in the advancement of civilization and the general scheme of settlement. Even in the first part of the nineteenth century the horse was a very much more important animal in Europe and the British Isles than at present.

During the opening of a country the settler must, owing to the absence of roads and other forms of transportation, put his principal reliance upon the horse; he is forced to travel trails and long distances, and for this purpose finds that he needs a horse suitable to carry him quickly and comfortably to his destination. To accompany him and carry the articles necessary for his daily life, he needs a pack animal. So long as conditions remain unchanged, a desirable type of saddle and pack animal will exist in good numbers; but so soon as the country becomes more settled and habitations more permanent, the mountain trail gives place to the road, and later the country road to the worked and metaled highway, and the type of horse rapidly changes. The necessity for the saddle animal lessens; the light-draft animal becomes more important; the people ride less and discard the expensive pack transportation; the horse is attached to a light vehicle with which he is able to transport more than one person or a heavier load. As the roads become better and the country more extensively cultivated, the lighter horse is used more for pleasure or solely as a means of drawing the carriage; another type of horse becomes more useful and economical, and the light-draft type appears to be succeeded by the heavy draft. Next come the railroad, the trolley line, and the automobile. The people ride and drive less, and fewer horses of the riding types are bred. Riding is indulged in almost solely for pleasure. A new country is a country on horseback; an up-to-date one, a country in an easy chair.

In the United States the type of horse suitable for Army purposes is now proportionately less numerous because it is not found necessary to the civilians of the country, and the Quartermaster's Department is finding it each year more difficult to supply the yearly demands of the mounted branch of a small Army.

The horses of our mounted branches are severely criticized by representatives of foreign armies, while from our own officers come reports of poor animals, poor performance, many quickly developed unsoundnesses, and short life.

As an illustration—in the West it is found that a marked change has taken place in recent years in the so-called "cow pony." Twenty years ago cattle ranches of the West were practically without fences and unlimited, and the cow man found it necessary to breed and use a type of quick, active pony. As the West became settled and as agriculture was taken up the large free ranges changed to the large fenced pastures of a few years ago. These large pastures are now being broken up into even smaller ones. The yearly round-up requiring riding over immense distances and active work has about disappeared. To-day cattle are not chased and roped, but are driven into the small pastures and pens and quietly handled. The quick cow pony of the past has given place to a larger animal, frequently having a cross of draft blood. It may be said that the cow pony of the West has practically disappeared.

Virginia has long been famous for the horse known as the Virginia hunter. Even the breeding of this type of horse has been sadly affected by the high price of heavy draft horses, and further influenced by the fact that only those hunter-bred horses that attained full size brought high prices. Under the haphazard methods of breeding in vogue in these sections not more than 1 in 6 colts could be depended upon to attain the size necessary to bring a high price, and the farmer found himself the possessor of 4 or 5 small horses for which there was no steady market. When he found that all draft colts, in spite of minor blemishes, brought good prices as 3-year-olds, he at once ceased to breed the hunter type, with its many misfits, and commenced on heavy draft horses. The disappointment in the hunter-bred horse would not have been so great had the breeding of this type been done scientifically and rationally. The hunter-bred horse as now raised in Virginia is sired almost entirely by stallions either sent to the country gratis or sold at small prices to individuals by wealthy people in the North who desire hunters and are looking to the future supply. A farmer living in the neighborhood of a Thoroughbred stallion, and feeling that he would like to breed a hunter, will take advantage of the nearest and cheapest stallion in his neighborhood,

regardless of what the result may be. All that he considers necessary is that the horse should be, first, a Thoroughbred; and, second, that he should be a pleasing individual; never taking into consideration the fact that the mare might not be suited to the horse nor the horse to the mare. Hence the misfits, the discouragement, and the decrease in number of the hunter type. It is said that not one-tenth as many hunters are bred in Virginia to-day as formerly.

Even more appalling than the present scarcity of horses suitable for military purposes in this country is the large number of unsound horses that are constantly being examined by purchasing officers. Horses of this class can be the result of but one thing, and that is an absolutely irrational system of breeding, or the lack of any system whatsoever. When it is remembered that a sound and serviceable horse of a particular type costs no more to raise than an unsound horse, the immense waste caused by our present lack of system is only made more apparent.

The enactment in a number of States of laws whose effect is to prohibit the standing of unsound stallions for public service will no doubt, in time, tend to correct this evil; but not until the horse-raising States generally prohibit absolutely the public stud service of unsound stallions will unsound horses be less common on the market. Such legislation in one State is an excellent thing for that particular State, but it is very likely to drive all the unsound stallions across the borders into adjoining States where laws against the unsound stallion do not exist.

The next census will probably show that there are in the neighborhood of 23,000,000 horses in the United States. It would seem that in this immense number there must be many thousands of horses suitable as remounts for the Army, and there probably are; but the fact that the type desired is comparatively scarce, and that the horses that would do are scattered over an immense area and are in demand for other purposes than the military, makes it not only expensive and impracticable to obtain them, but next to impossible to do so.

The purchase of young horses for the Army during the last fiscal year has been more or less successful, but all officers connected with the Quartermaster's Department have reported that while they were obtaining a fair number of horses, they could see no prospect of obtaining them in any number in future years, and all report the apparent necessity for the Government's assistance in the rational breeding of Army horses in the country.

As no system of supply, so far as the Army is concerned, which deals with peace conditions alone, is complete, the War Department must constantly keep in mind the possibilities of war, and it is not surprising that, finding difficulty in purchasing a supply of remounts

for the peace Army, there should be more or less uneasiness when war requirements are considered.

The waste of horseflesh in war times is enormous, and in a war of any magnitude in which this country might be engaged the number of horses required will not be confined to the thousands per year, but will extend into the hundreds of thousands.

In this connection attention is invited to a few of the records on this subject:

There were purchased for the armies of the Federal Government in the fiscal year ending June 30, 1864, 188,718 horses. There were captured from the enemy and reported 20,388. Leaving out of consideration those captured and not reported, it should be observed that the Army required 500 horses each day for remounts. This, therefore, is the measure of destruction of horses during the same period.

During the eight months of the year 1864 the cavalry of the Army of the Potomac was supplied with two remounts, nearly 40,000 horses. The supply of fresh horses to the army of Gen. Sheridan during his campaign in the Valley of the Shenandoah has been at the rate of 150 per day.

During the Russian campaign the French crossed the Nieman in June, 1812, with cavalry, artillery, and train horses to the extent of 127,121. About 60,000 of these pertained to the cavalry. On December 13 the remnant of the invading army recrossed the Nieman with 1,600 cavalry horses. In six months the horses had all disappeared.

Examples of the terrible waste of horseflesh during war might be multiplied ad libitum.

The question of remounts for the Army became so serious during the Civil War that in 1863 the Cavalry Bureau was established. One of the principal duties of this bureau was the purchase and inspection of horses for the Army. Six remount depots were established. The most important of these was Giesboro Manor, situated on the north bank of the Potomac, nearly equal distance between Washington and Alexandria. To show the magnitude of operations of the Cavalry Bureau, the following report of the Giesboro depot is given:

On hand Oct. 1, 1863, cavalry horses.....	4, 281	
Received to Dec. 31, 1863.....	36, 932	
Total.....		41, 213
Issued.....	22, 204	
Sold.....	1, 651	
Died.....	1, 637	
Total.....		25, 492
On hand Jan. 1, 1864.....	15, 721	
Received by purchase, Jan. 1, 1864, to June 30, 1866.....	5, 326	
Received from other depots for issue.....	59, 507	
Received for recuperation.....	85, 980	
Received by transfer from Artillery.....	4, 120	
Total.....		170, 654

Issued to armies in the field.....	96,006
Issued to officers after June 30, 1865.....	1,574
Issued for sale or sold at depot.....	48,721
Died.....	24,321
Total.....	170,622
On hand June 30, 1866.....	32

This does not take into consideration the twelve or thirteen thousand artillery horses handled at this depot.

This report closes with the abandonment of the depot, but it is to be remembered that nearly all the volunteer cavalry was mustered out immediately after the surrender of Gen. Lee's army the preceding year, so that nearly all the horses were handled during a period of 18 months.

Until recently acts of Congress appropriating money for the purchase of horses for the Army required that they should be purchased by contract from the lowest responsible bidder after advertisement. The specifications of the horse to be delivered under contract are those of a perfect animal, which, of course, is seldom seen. The inspectors and purchasing officers are required to reconcile these specifications with existing conditions, keeping in mind fairness both to the contractor and to the Government. This system led to the building up of the class of middlemen who purchased animals from the breeders, presented them for the action of the Government inspectors, and sold them at the contract price. Until recently this price ranged from \$100 to \$150. Considering the large expense to which the contractor would be put, it could not be expected that all of the Government's money would be invested in horseflesh. The result was, considering the profit by the contractor, his expenses, etc., that the price paid by the Government secured for the cavalry a horse worth from \$70 to \$100. Nothing is known of the breeding of these animals further than that they were "probably of such and such breeding." Often the question of breeding was not raised, the principal requisite being that they should give promise of performing the duties expected of them.

The contract system has tended to discourage the horse breeder of the country, as the money paid him by the contractor, after much haggling, was often very little more than the cost of raising the horse. There has been no incentive for breeders, even in the best naturally endowed sections, to breed the type of horse that the Army needs.

Again, in recent years the demands for heavy draft animals for farming purposes, the high prices that these animals are bringing, the fact that they cost no more to raise, and bring even a higher price although blemished, has had a further bad effect upon the breeding of the desired saddle type. Even before the present high prices of all

horses and the higher price of the draft horse existed, the breeding of the type considered best for Army purposes received another severe setback by the adoption of electric and cable street railways and the extension of the trolleys. While not generally appreciated, the best "railroaders," as the horses used for street cars were called in the market, were the very kind that made the best cavalry mount. This horse was desirable for street-car purposes because of his endurance and his willingness to work.

The contract system received its first serious setback, from the contractor's standpoint, when the Army, due to the clamor for better mounts, insisted upon a closer compliance with the contract specifications and rejected more of the horses presented by the contractor. The sudden rise in the price of horses further embarrassed the contractor, and the added difficulty of obtaining horses to present for inspection caused many of the contractors to fail in their deliveries, made others reluctant to bid, later led to the impossibility of obtaining horses under this system in certain sections, and finally led to authority being given by Congress for open-market purchases. This method, while apparently a little more expensive to the Government, had the advantage of eliminating the middleman, giving the breeder all the money which the Government was willing to pay for horses, and giving the Government value received in horseflesh.

The establishment in 1908 of the remount depots has further improved the type of horse for the Army, as the system of purchasing young horses 3 and 4 years old, often unbroken, has enabled the Government to get the best type of horse before he has cost the breeder much money and when he could be sold for a reasonable amount. These horses, sent to the depots for maturing and handling, and finally issued to troops as 4½ and 5 year olds, while costing the Government more per head than the horses 5 and 6 years old formerly purchased and issued directly to troops, are very much better horses from the beginning, are properly developed at a critical period in their existence, rationally handled, and, when issued to troops, have been received with enthusiasm as a great improvement over the matured horses formerly issued under the old system. Even considering the high market value of horses at present, it is believed that, under the remount system, horses can be issued to troops at not to exceed a total average cost of \$225. The latest contract price of Cavalry horses is \$183.75; for Artillery horses, \$213.75. Many of the late contract horses are young and require some handling at depots before suitable for service; others are mature.

Horses purchased as mature under the old system have had a useful life in the Army of 6.4 years on an average. The better grade of horses, such as are now being purchased, rationally developed and handled, should and will have a useful average life of 10 years. It is

easy to see that the better horse issued from the depot at a cost of \$225 that lasts 10 years is cheaper than the horse costing from \$183 to \$213 lasting only 6.4 years. In addition the Army will have had a better horse throughout the entire period of usefulness. The horses being issued from the depot could undoubtedly be sold at time of issue at a handsome profit. Many individuals would bring fancy prices. It is needless to say that if it were possible to purchase them in issue form, it would be necessary to pay much more than they have cost under the depot system.

European countries long ago found it not only advisable but necessary to supervise the breeding of horses in order to supply the demands of their armies, and every European country of importance, with the exception of England, has for years been encouraging the breeding of the proper type of army remount. England, one of the most important horse countries of the world, has for many reasons only recently been forced to this step. It is interesting to note that practically the same conditions confront England that confront this country at the present time, and that almost identical steps are contemplated in the two Anglo-Saxon countries to accomplish the same result—suitable army horses in sufficient number.

A PLAN FOR BREEDING HORSES FOR THE UNITED STATES ARMY.

NUMBER OF STALLIONS REQUIRED.

From the best information available it would appear that a comprehensive plan to breed the horses needed for the mounted service of the Army on the present peace footing should provide for not less than 2,000 horses a year and need not exceed an estimated allowance for over 2,500 a year.

To determine the number of stallions needed for this work, allowances must be made for failure of stallions to get in foal all mares served, for ordinary losses of foals, and for failure of foals bred to prove suitable for remounts.

A good sound stallion will get about 75 per cent of his mares in foal. Of the resulting foals, an average of at least 10 per cent will die from various causes before they are old enough to be purchased as remounts. In the proposed Army horse-breeding work probably about 50 per cent of the remainder would be suitable for remounts.

Based on an estimate of 100 stallions, the following results could be expected for varying numbers of mares served by each stallion:

Number of mares covered by each stallion.	Estimated number of suitable remounts by 100 stallions.
40	1,350
50	1,688
60	2,025
70	2,363

An estimate of 100 stallions would therefore appear to be conservative. It is doubtful if stallions average more than 70 mares a season, as a rule. In some localities it would probably be possible to stand stallions for a short fall breeding season in addition to the usual spring season, in which case a larger number of mares could be covered. In others only a spring season would be feasible, and a smaller number of suitable mares might be offered.

DISTRIBUTION OF STALLIONS.

The country should be divided into four or more breeding districts, as follows, and stallions assigned as indicated:

New England district (vicinity of Maine and New Hampshire).....	10 Morgans.
Central district (Virginia, West Virginia, Kentucky, and Tennessee, with perhaps certain sections of Indiana and Ohio)	30 Thoroughbreds. 10 Standardbreds. 10 Saddlers.
Southwestern district (vicinity of Missouri or Texas, with perhaps certain sections of Iowa)	5 Thoroughbreds. 5 Saddlers. 5 Standardbreds.
Northwestern district (Montana, Washington, Oregon, and perhaps California)	15 Thoroughbreds. 10 Standardbreds.
Total	100

It might be well to subdivide one or more of these districts. The above arrangement is worked out to establish such districts so that they will be in reasonable proximity to Government stations where the stallions may be kept between breeding seasons.

NUMBER OF REMOUNTS AVAILABLE ANNUALLY.

Based on the foregoing estimates, the number of remounts available yearly from these sections would be as follows, with stallions covering the maximum of 70 mares, and taking 24 as a convenient unit for the number of suitable remounts got by each stallion annually:

New England district	240 Half-Morgans.
Central district	720 Halfbreds. 240 Half-Standardbreds. 240 Saddlers.
Southwestern district	120 Halfbreds. 120 Saddlers.
Northwestern district	120 Half-Standardbreds. 360 Halfbreds. 240 Half-Standardbreds.
Total	2,400

A considerable number of the horses sired by the Morgan and Standardbred stallions would be suitable for cavalry remounts, but a much larger number would be preferable for the field artillery. The number of estimated remounts by Morgans and Standardbreds is 840. In selecting stallions of these breeds due consideration should be given the necessity for artillery remounts.

SELECTION OF BREEDING DISTRICTS.

Those localities should be selected for breeding districts where conditions are especially suited to horse raising, where the type of mares is most likely to approach the type of horses desired for the Army, where a light type of horse will always in the long run be the most profitable to the farmer and draft horses least likely to gain a firm foothold, and where mares are sufficiently numerous to give the stallions maximum service. A careful survey of the horse-raising districts of the country will be necessary before this question is settled, and the returns of the Thirteenth Census can probably be used. The Bureau of Statistics of the Department of Agriculture states that it is impossible to use its returns for this purpose. Perhaps, however, that bureau could assist in making the survey.

The Government reservations where stallions would be kept between the breeding seasons would be the points around which the work would center. In some cases it might be possible to stand some stallions on the central station itself. Stallions should be distributed in lots of five around the central stations, and such further distribution could be made as necessity required. At the close of the season they would be returned to the central station and kept there until the next season or sent to another locality.

THE EXPERIMENTAL FEATURE.

The plan has experimental possibilities of the highest order, which should be utilized. The leading features are the test of the value of different breeds to produce remounts and the value of different soils and climates for the purpose, which could soon be determined by the Army by keeping records of performance. Certain troops, squadrons, and batteries, and entire regiments, could be supplied with remounts bred in a certain way in certain localities, and the possibilities of the plan from an experimental standpoint would thus become very great. By the time a second large appropriation to purchase stallions would, if ever, be necessary, the Government would be in possession of facts which would enable it to show definitely whether the plan had been successful, and whether any crosses or localities should be eliminated from further consideration. It might be well, also, to consider the feasibility of arranging with the breeders to reserve a small number of high-class fillies each year for breeding purposes; otherwise mare owners would be compelled to replace their mares by purchase, which would bring the problem little nearer solution at the end of 20 or 50 years than it was at the beginning. That it is possible in time to fix the type desired for remounts is by no means questionable, and this may indeed be very desirable.

TERMS OF SERVICE.

No mare should be bred to a Government stallion until she has been approved by the proper officer as of the type suitable to produce remounts. The common unsoundnesses, the tendency to which may be transmitted from one generation to another, should naturally disqualify a mare, but even more important would be the necessity to refuse a mare on account of manifest faults of conformation, action, or quality.

The terms of service should be free, the owner of the mare entering into a contract to give the War Department an option on the resulting foal during the year it is 3 years old (estimating a horse to be 1 year old on the 1st of January after it is foaled) at a price to be fixed before the mare is bred. A provision should be included in the contract that the mare must remain in the owner's possession until the foal is weaned, and that, in case the foal is sold before the War Department has exercised its option, a service fee shall be exacted from the breeder of the foal. Provision should be made, however, to cover such emergencies as the death of the breeder, etc.

The price contracted to be paid for remounts should be fixed annually for each State by a board of arbitration before the breeding season opens, subject to the approval of the Secretary of War. For example, in January or February, 1912, this board would meet in each State mentioned above and agree upon the price to be paid for remounts bred in that State to be purchased in 1916; in 1913 prices to be paid in 1917 would be fixed, and so on. The arbitration board should be composed of an officer of the Army, an officer of the Department of Agriculture, and a citizen residing in the State, preferably a competent horseman. In purchasing remounts, no discrimination should be made against mares; colts should have been castrated at the breeder's expense, preferably between 1 and 2 years of age.

ORGANIZATION.

The breeding work would be administered by the Bureau of Animal Industry of the Department of Agriculture through the Chief of the Animal Husbandry Division. This division would direct the work under the supervision of the chief of the bureau, and keep the breeding records and the reports on the development of the foals. Not later than January 1 of each year it should furnish a report for transmission to the War Department on the actual number of 3-year-olds in each breeding district available for purchase during the year and the probable number of these that will make satisfactory remounts. A competent animal husbandman should be employed, with headquarters at Washington, as a traveling inspector of breeding sta-

tions, to keep the department in close touch with the work in addition to receiving regular reports from the breeding districts.

The men in charge of the breeding districts should be obtained from the field force of the Bureau of Animal Industry. These men should be good veterinarians, with a thorough knowledge of horse husbandry. Their field experience would make them invaluable for this work, and the loss to the field service of the bureau would be more than compensated by the fact that they could handle the work better than any men who might be obtained from the outside. If the Government undertakes this project it must do so under the most favorable auspices, and no risk of failure should be run. As success would largely depend on the ability of the men in charge in the field, the best men available should be obtained. The expert assistants to men in charge of breeding districts should be animal husbandry graduates of agricultural colleges, and not veterinarians. This would balance the service in a very effective way.

The duties of these men would be to direct the work at the breeding stations in their districts, to attend to the keeping of the records, to advise mare owners on the care of horses, and, if possible, to travel through their districts before the breeding season opens and approve mares, directing how they should be bred, if necessary. Until the work is on a thorough, well-organized basis, the approval of mares should be done by the men in charge of districts or their expert assistants.

The men in charge of stallions as stud grooms should be employees of the Department of Agriculture, for whose appointment experience in the handling of horses should be the first consideration. Preference should be given men who had been honorably discharged from the mounted service of the Army and who presented certificates from officers in whose commands they had served showing their proficiency in horsemanship.

It is hardly necessary to point out the desirability of having the breeding service so organized that it will be carried on from year to year by the same or about the same corps of employees, in order that it may have a definite, stable, and continuous policy.

THE PURCHASE OF STALLIONS.

Stallions should be purchased by a board of three, composed of an officer of the Army, an officer of the Department of Agriculture, and a practical horseman, whose knowledge of breeds, pedigree, and markets and whose integrity can be relied upon.

In selecting the stallions, suitability for the purpose and freedom from unsoundness likely to appear in progeny should, of course, be first considered, and the stallions should be old enough to have shown

their worth as sires of the class of horses desired. In buying Standardbreds, Saddlers, and Morgans any tendency to pace, rack, mix gaits, paddle in front, sprawl behind should disqualify, and only those stallions should be selected which come from families which show none of these tendencies to a marked degree. The presence of such faults in their get would, of course, disqualify them.

EXPENSE.

It is believed that this plan could be put into full operation at a cost not to exceed \$250,000 for the first year. This will allow for the purchase of first-class stallions with proved stud records and will provide for the employment of first-class men to carry on the work. The expense in subsequent years, on the same basis of 100 stallions, would require appropriations estimated at \$100,000 annually, which would allow for the replacing of stallions as necessity required.

On the basis of 40 mares per stallion the system would cost about \$40 per colt produced. If the maximum of 70 mares were covered by each stallion, the cost per colt produced would be about \$20. Considering the fact that the normal stud fee in the country is from \$10 to \$25, with a probable average of \$15, it will be seen that under this system the expense would be somewhat greater than by using privately owned stallions, but it is believed that the advantages of breeding and the results in foals would more than compensate for the increase. While the increased cost would not necessarily be made up to the Central Government, the increase in State and local taxes on more valuable foals would more than counterbalance the loss under this system. As a matter of fact the resultant cost of such a careful system of breeding can not be computed in dollars and cents, particularly as the effect of systematic effort in the breeding of Army remounts should have such a favorable influence on all breeding in this country as to be of inestimable benefit to the horse industry and far outweigh any expense that might be debited against this system.

Approved:

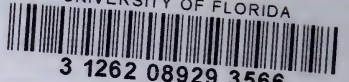
JAMES WILSON,

Secretary of Agriculture.

WASHINGTON, D. C., *March 10, 1911.*



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