THE REPRODUCTION

—OF—

THE HORSE AND THE MULE.

A NEW DISCOVERY;

EMBRACING THE CAUSES OF FAILURES, ON THE PART OF
MARES, TO GET WITH FOAL, AND THE MEANS BY
WHICH SUCH FAILURES MAY BE AVOIDED.

—AND—

GIVING DIRECTIONS BY WHICH FOALS MAY BE SECURED
IN THE MAJORITY OF CASES, BY THE FIRST
LEAP OF THE STALLION OR JACK.

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—DESIGNED—

For the Benefit of all Persons Engaged in the Rearing
of Horses and Mules.

—BY—

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Washington, Mo.

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PREFACE.

Every person who has any experience in the reproduction and rearing of horses and mules will attest the fact that, of every one hundred mares annually bred, about thirty or forty fail to get with foal. It is also a well known fact that the large majority of mares annually bred are brought in connection repeatedly with the stallion or the jack, when only one connection is necessary in order to secure a foal, if in accordance with the secret laws of animal reproduction. These losses and disadvantages are the result of ignorance and consequent lack of conformity to the secret laws of animal reproduction. But very few, if any, of the many persons engaged in this branch of business know that the mare is more apt to conceive upon any one day of the sexual heat than she is upon other days. Yet such is the fact. There are certain days during the heat of the mare when she will almost invariably conceive, and there are other days of the heat when she will almost invariably fail to conceive. The breeding of mares upon wrong days of the heat, and the overstraining of stallions and jacks, are the causes to which the above losses and disadvantages are to be mainly attributed.

I have studied this subject in a scientific and experimental way for a number of years, and I am now able to give directions by which nearly all failures may be avoided, and foals secured in a large majority of cases by the first leap of the stallion or the jack. I now publish the result of my researches for the benefit of my cotemporaries in this branch of business.

AUTHOR.

NECESSITY OF IMPROVEMENT IN THE MANAGEMENT OF STALLIONS, JACKS AND MARES IN BREEDING.

The fact that the course which is pursued at the present day, in the management of stallions, jacks and mares in breeding, has escaped scientific research and has prevailed for centuries is no argument that it can not be and ought not to be improved. An improvement is much needed, not only to avoid the failures which occur on the part of about thirty-five or forty mares of every one hundred mares which are annually bred, but also to prevent the necessity of the practice of bringing mares in connection with the stallion or the jack repeatedly. Every person knows, or should know, that only one connection between the male and female, throughout the whole animal kingdom, is necessary to reproduction if the laws of reproduction are complied with. Nature, throughout all her departments, involves fixed laws, and we succeed or fail in all our pursuits which are in any way connected with nature accordingly as we understand the laws of nature and conform to them. The reason why this improvement has not been made before is that the matter has never been carefully studied and experimented upon in the light of science.

While I admit that all rules have their exceptions, and that there is no rule or set of rules that will cover all cases, yet, by conformity to the directions given in this work, the many failures which now occur upon the part of mares to get with foal may be nearly all avoided, and foals may be secured, in the majority of cases, by the first leap of the stallion or the jack. This would render the business of rearing horses and mules far more successful and profitable. It would render stallions and jacks far more profitable to their owners. It would also result in a great saving of time to owners of mares.

REPRODUCTION----ITS NATURE, NECESSITY AND DESIGN.

Reproduction is that property with which every plant in the vegetable kingdom and every animal in the animal kingdom was endowed in the beginning for their perpetuity and increase. It is that principle which connects the myr-

iads of plants and animals now upon the earth with the parent stocks of every variety which were created in the beginning. Had this provision in the laws of nature never existed, the vegetable and animal kingdoms would have perished with the parent stocks and only the gaseous and mineral kingdoms would have continued to exist.

There are two kinds of reproduction, viz: vegetable reproduction and animal reproduction. The reader thoroughly understands all the conditions involved in the reproduction of the plant. He knows the necessary conditions of warmth and moisture for the sprouting of the seed and the growth of the plant. He knows that if the seed be planted when the ground is too cold or too dry or too damp, the latent germ or embryo will not grow, and that the seed will fail to reproduce a new plant. These conditions are thoroughly understood by the farmer. Therefore he knows when and how to plant so as to depend upon certain success in the reproduction of a new plant.

Reproduction in the animal kingdom, like reproduction in the vegetable kingdom, involves fixed laws and conditions. The reason why certain success in the reproduction of the colt can not be depended upon is that the laws and conditions of animal reproduction are more complicated, and therefore they are not understood and obeyed.

THE MALE PRINCIPLE OF REPRODUCTION.

Unlike vegetable reproduction, animal reproduction involves the union of two principles, viz: the male and the female principles. The male principle is known by the name of semen. Though nearly all persons are acquainted with the appearance and some other characteristics of semen, yet but very few have any correct idea of its reproductive functions. It has been discovered by the use of the microscope that semen, or the thick, ropy part thereof, consists of innumerable living, moving specks of matter called seminal animalcules. These animalcules are invisible to the naked eye and are so very small that there are thousands of them in a particle of semen not larger than a grain of mustard seed. Each of these invisible seminal animalcules is the male principle, and is sufficient for the formation of the germ or embryo of the future animal, when brought in con-

nection with the female principle in the womb of the female.

THE FEMALE PRINCIPLE OF REPRODUCTION.

It is a well known fact among scientists that all animals come from an ovum or egg. The ovum or egg is the female principle involved in the formation of the germ of the future animal. The egg is produced in the female by an organ denominated the ovaria or egg bag. This organ is connected with the womb by two ducts or canals called oviducts. It consists of two lobes and performs a function similar to that of the testes or stones of the male, the former producing the female principle and the latter producing the male principle of animal reproduction.

The ovaria is the organ which is cut out of domestic animals in the process of spaying. Domestic animals remain barren, after being spayed, because they cannot produce any more eggs. The egg varies in size in different animals, being larger in fowls than in any other part of the animal creation. In the higher orders of animals it is generally very small. In the human female, when the egg is emitted from the ovaria and enters the canal of the oviduct it is so small as to be scarcely perceptible. Among other animals it is proportionately small, according to their size. The eggs are emitted from the ovaria at regular periods of time, which vary in different animals. Among the higher orders of animals the eggs are emitted at regular periods of time, a month apart. Impregnation and conception are brought about by the contact or union of one of the seminal animalcules of male semen with the egg of the female in the womb. Hence there can be no conception unless both principles are united in the womb of the female.

THE SEXUAL HEAT OF THE MARE.

The egg, after being emitted from the ovaria, passes through the canal of the oviduct into the womb. This passage requires a certain length of time, which varies in different animals. My observation in the breeding of mares leads me to believe that the passage of the egg through the oviduct into the womb generally requires about two days.

The heat of the mare commences about the time the egg is emitted from the ovaria and, as a general rule, continues six or seven days. The egg generally enters the womb about two days after the heat commences and remains in the womb about two days, and if not impregnated it then passes out and is ejected from the system.

CAUSES OF FAILURES ON THE PART OF MARES TO GET WITH FOAL.

There are several occasional causes of failures, to which a very few of the failures may be attributed; but there are only two main causes. There are a very few mares that are in some way defective in their reproductive organs, and will not breed under any circumstances. I have one of this kind myself. Mares are more liable to fail when bred to jacks than when bred to stallions, because it is crossing the breed. Excessive fat on the part of the female is an obstacle to reproduction throughout the whole animal kingdom. I have noticed that China sows are not near so prolific as sows of other breeds, because they are nearly always excessively fat. Very fat hens lay but very few eggs. Very fat mares are more liable to fail to produce colts than when kept in an ordinary state of flesh. While a very few of the failures may be attributed to the above causes, the large majority are due to the mismanagement of stallions, jacks and mares in breeding; either to the overstraining of stallions and jacks, by which their efficiency is impaired, or to the breeding of mares on wrong days of the heat, when the egg is not in the womb.

DIRECTIONS FOR THE PROPER MANAGEMENT OF MARES IN BREEDING.

This chapter and the one that follows are of the greatest importance, as the success of both the owners of stallions

and jacks and the owners of mares depends upon proper management in breeding.

Persons who have the management of mares in breeding should not allow them to become too fat, because excessive fat upon the part of the female is an obstacle to reproduction. They should have their mares bred to the stallion or the jack upon the third day of the heat, because the egg is invariably in the womb, in a proper condition for impregnation, on the third day of the heat. The commencement of the heat may be easily discovered, by watching the condition of the mare from day to day through the breeding season. About the time the heat commences the outward sexual organ presents the appearance of looseness and slight enlargement. A small clot of bloody mucus, caused from the bursting of the egg through the thin membrane of the ovaria, may be seen adhering to the lower end of the outer sexual organ at the time of the commencement of the heat. This denotes that the egg has been emitted from the ovaria and has entered the canal of the oviduct. About the same time the restlessness, ranting and neighing, the squealing and pawing of the mare when brought in contact with other horses, become noticeable as unmistakable signs of the commencement of the heat. Counting the day upon which these signs commence as the first day, the mare should be bred upon the third day of the heat. This is the day upon which I have my mares bred, and I scarcely ever have to put them the second time, and when I do have to put them the second time I suppose that it is to be attributed to mismanagement of the stallion or the jack.

DIRECTIONS FOR THE PROPER MANAGEMENT OF STALLIONS AND JACKS.

Upon the proper management of stallions and jacks, also, depends to a great extent the success of both the owners of stallions and jacks and the owners of mares. If stallions and jacks be mismanaged, mares may fail to conceive when bred upon proper days of the heat, when the egg is in the womb, in a suitable condition for impregnation. Care should be taken in the way of feeding, watering, currying and exercising moderately, in order to keep them in a good state of flesh, and full of rich blood, as it is from the blood that the

semen is produced. If stallions and jacks are mismanaged and overstrained, their efficiency is proportionately impaired. Mares frequently fail in consequence of this inefficiency. There are, also, many inferior colts, horses and mules in consequence of this inefficiency upon the part of stallions and jacks, caused from overstraining. Stallions and jacks should be worked or ridden but very little, only enough to afford sufficient exercise for health and vigor.

Two mares each day are as many as any stallion or jack can serve efficiently. If not under four years old, nor over ten years old, they can perform two services a day efficiently provided they are allowed four hours between services, for rest and restoration of their sexual vigor and efficiency; but, if under four years old, or over ten years old, they should not be allowed to perform more than one service each day.

Managers of stallions and jacks should give the following notice to their patrons in their advertisements, viz.:

All persons who patronize my stallion or jack (as the case may be) are required to strictly conform to the following directions, viz.:

Observe the condition of your mares closely from day to day.

Note the time of the commencement of their heat, and bring them to my stallion or jack upon the third day of the heat.

ADVANTAGES TO BE GAINED BY CONFORMITY TO THE FOREGOING DIRECTIONS.

By conformity to the foregoing directions, seventy-five mares of every one hundred annually bred to stallions would conceive upon the first leap of the stallion. Seventy of every one hundred mares annually bred to jacks would conceive upon the first leap of the jack. The remainder, in both cases, would nearly all conceive upon the second leap of the stallion or the jack. It is safe to say that there would not be more than five failures to produce colts out of every one hundred mares annually bred. This would render stallions and jacks far more profitable to their owners. It would insure better colts in many cases than are now produced. It would render the business of rearing horses and mules more

successful and profitable to those engaged in it. It would also, result in a great saving of time to owners of mares, in the way of only having to go with their mares to the stallion or jack one time in the large majority of cases. Whereas, under the erroneous course now pursued, mares have to be put to the stallion or the jack repeatedly in a large majority of cases, and then thirty-five or forty of every one hundred annually bred fail to produce colts.

REASONS FOR PUBLICATION.

Having devoted a considerable portion of my time through life to farming and stock raising, the evils and disadvantages mentioned in this pamphlet attracted my attention years ago, and I set about investigating their causes and devising means by which they might be remedied. Aided by a thorough knowledge of natural science, I have succeeded in accomplishing this task. I consider my discovery a valuable application of science to practical industry. It will vastly increase the productive power of labor in the branch of industry to which it pertains; and this increase of productive power throughout the world, in a branch of industry which is really indispensable to the prosperity and happiness of all classes, will be a matter of great importance.

Though animal reproduction is a matter of extreme delicacy, yet I feel that the utility and importance of my discovery, and the advantages that will accrue from its publication, not only justify me in publishing it, but render it a duty to myself and my fellowman for me to publish it.

AUTHOR.

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