

judge will, in addition to running his eye over the various points mentioned, see that he stands even and firm on his feet, which, in some horses, are inclined slightly inward. To be the least inclined outward is a bad fault, and one which gets worse with age. As regards the hind legs, a glance will tell if they are all right with the animal, and hocks close to each other, and the feet at the proper place for supporting the weight of the body, while at the same time giving the animal the fullest power for the use of the hind leg, in which lies nearly all the propelling power.

In walking, the horse should, if approaching you, come with his head well carried, and with an apparently measured stride, lifting his feet well off the ground, and placing them down again regularly, evenly, and with apparent deliberation.

On a side view, one can notice if his action be even—i. e., if his fore and hind action be in unison—for, in horses with long backs and weak loins, the two ends seem to be under different control, and the hind legs, being in a manner dragged with the toes along the ground, an unpleasant effect is produced.

In going away, at a walk, a horse should plant his hind feet forward as deliberately as his fore ones, at the same time raising and bending the leg at the hock, which should be evenly carried forward. If the hocks are turned out in moving them forward, the action is not good; and a Clydesdale breeder considers this an exceedingly bad fault in either horse or mare.

In trotting, the horse should bend the legs at the knees and hocks, and from a hind view the inside of the fore hoofs should almost be seen at every step. If the animal be inclined to move wide behind, this fault will easily be discovered at the trotting pace.

THOMAS DYKES.

Sterility in Mares.

Sterility, either temporary or permanent, is not uncommon in mares. It may depend upon physical or organic causes, and may cause permanent barrenness. Of course, hermaphrodites will not reproduce, and monstrosities and hybrids seldom do; but in this article we refer to mares that are apparently normal and healthy. Mares that have been used for work until they have become old, and then retired to the stud, frequently prove infertile; or mares that have bred when young, and then allowed to reach an advanced age before being bred again, will often fail to reproduce. The infertility in these cases is probably due to the genital organs having lost their power from prolonged want of function. Nothing can be done to restore the activity of the organs.

Change of climate, in many cases, has a temporary, and in some cases a permanent, influence on fecundity. In most cases this influence disappears in a few months or a year.

Bad hygiene may also cause sterility, but this can be remedied by changing to favorable conditions. Underfed or overfed mares do not breed with the same regularity as those in moderate condition. This is especially the case with very fat mares. The means of removing these causes of sterility are obvious.

Excitable or vicious mares do not breed with the same regularity as those of a quiet, gentle disposition. It is claimed by some that, with mares accustomed to work, active exertion, even to produce fatigue, before being bred, is favorable to conception. The Arab often gallops his mare for a long distance, then breeds her, and allows her to stand at rest for several hours.

Diseases or alterations of the generative organs, as the ovaries, Fallopian tubes, uterus or vagina, will prevent conception. When these diseases become chronic, they usually cause permanent sterility, although they do not apparently interfere with the mare's comfort or usefulness in other respects. In fact, such diseases are often present, and the only circumstances that lead to the suspicion of their presence is the animal's failure to conceive. Irregular oestrus, occurring either too frequently, or at too long intervals, indicates disease of the ovaries; but disease of the other organs of generation, and in some cases even of the ovaries, sufficient to prevent conception, may be present, and, at the same time, the periods of oestrus appear at regular intervals, and nothing abnormal can be detected, except as stated—a failure to conceive. It is seldom that treatment for suspected disease, as above, is successful.

Doubtless, a somewhat common cause of sterility, especially in nervous mares, is a spasmodic contraction of the opening through the neck of the womb (called the os uteri) during the act of copulation. This, of course, prevents the entrance of the semen into the uterus. Mares in which sterility is due to this cause may be artificially impregnated. Artificial impregnation can be performed in different ways. The most popular method is, probably, as follows: A rubber capsule and a syringe especially designed for the purpose is purchased from dealers in veterinary instruments. The syringe is immersed in a warm, sterilized solution, as a two-per-cent. solution of carbolic acid in water, kept at a temperature of

100 degrees Fahr. The capsule is placed over the head of the stallion's penis, and the act of copulation is then performed. When the act is completed, the capsule containing the semen is removed, and a quantity of it drawn into the syringe, care being taken that the temperature be not reduced. Unless the act is done quickly, it is wise to immerse the capsule in the warm solution mentioned. The operator, having disinfected his hand and arm, introduces his hand into the vagina, and inserts the nozzle of the syringe through the os uteri into the uterus, and then shoves the piston and forces the contents of the syringe into it. It is possible to impregnate several mares with the result of the one act of copulation, if the mares are in a proper state of oestrus.

Probably the most common cause of sterility is a chronic closure of the os uteri. In all cases where mares repeatedly fail to conceive, it is wise to examine the os. This is done by inserting the sterilized and oiled hand and arm through the vulva into the vagina, until the fingers reach the os. In normal cases, one or two fingers can be easily passed through the os into the womb, but when there is a chronic closure, the opening must be dilated. This can often be done by a rotary motion of the finger, with considerable pressure. In other cases the finger has not sufficient strength, and a blunt sound, about the size of a catheter, or a piece of perfectly smooth, hard, tough wood, or an instrument especially designed for the purpose, is used to dilate it. There are cases in which there is a fibrous growth sur-

ly justified in assuming that there is some chronic disease of the generative organs that cannot be corrected.

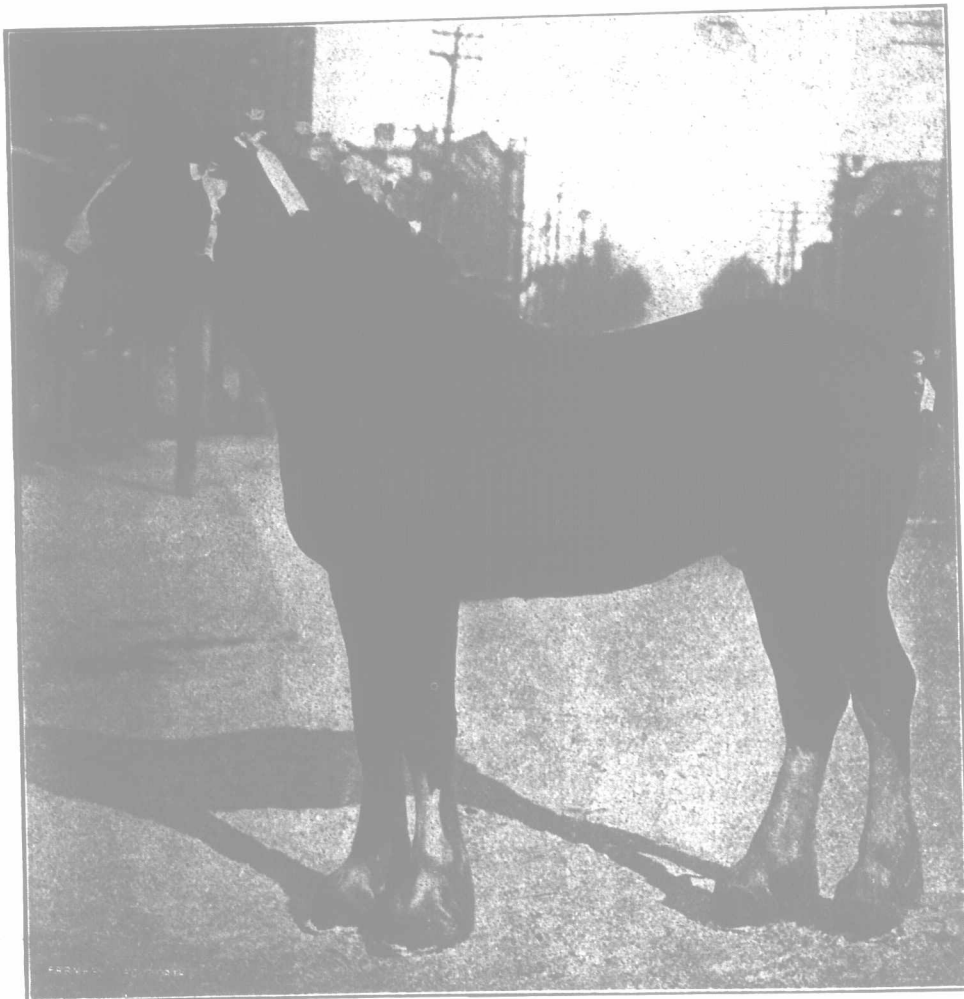
LIVE STOCK.

Color of Shorthorns.

At most sales of Shorthorns held of late there has been a marked preference shown for animals of a red color, especially those of a deep, entire red. The reason of this, no doubt, is to be found in the fact that foreign buyers, who are often our best customers, apparently prefer to have them of that hue. The mighty dollar, therefore, rules the market, and, in order to catch it, breeders who want to sell to advantage have been trying of late to meet the demand by producing red animals as far as they could. Red, however, especially a dark, entire red, is not the characteristic color of the Shorthorn; in fact, there are more bad ones of that hue, I think, than of any other. By steady perseverance, and making color the main point, it would, no doubt, be possible, in course of time, to breed our Shorthorns all red. But surely this would not be desirable. Indeed, it will be found that the great majority of our finest specimens have not hitherto been of that color, and there is good reason why it should be so. Let us look into the matter a little.

It was Charles Colling who may be said to

have founded the breed. There were good Shorthorns, no doubt, before he began, but it was he that set about collecting the best that were then to be got, and, being a consummate judge, he was eminently qualified to do so. Then, by careful selection and close breeding, he effectually stamped the breed with the characters that have made it famous. This he accomplished mainly by the use he made of the bull Favourite 252, and his cross-bred son, Comet. Favourite proved an extraordinary good getter from the very first, which no doubt induced Colling to use him as he did. He kept this animal on until he was thirteen or fifteen years of age, breeding in and in with him to a degree almost incredible—so much so that we may almost say that it was Favourite who really made the improved breed. There seems to be no authentic portrait extant of Favourite, but we



Royal Albane [8366].

Clydesdale stallion colt; bay; foaled May, 1907. First and champion in Canadian bred class, Winnipeg, and Canadian National, Toronto, 1908. First and champion, Ontario Horse-breeders' Exhibition, Toronto, 1909. Exhibited by Thos. Mercer, Markdale, Ont. Sire Breadalbane (imp.).

rounding the os, which prevents its dilation, even with the instruments named, and it is necessary to use a cutting instrument. In such cases it is better to allow the mare to remain barren. When the os has been dilated, as described, the mare should be allowed to stand for a couple of hours, and then bred.

It is claimed that a common cause of sterility is an acid condition of the vagina and uterus, and that what is known as "The Yeast Treatment" will be successful. This consists in adding to an ordinary yeast cake sufficient water to moisten, and allowing it to stand for twelve hours in a moderate temperature. Then add, with brisk stirring, a pint of lukewarm, recently-boiled water, and allow to stand 8 to 12 hours. It is now ready for use. During the early period of oestrus this fluid should be heated to about 100 degrees Fahr, and injected into the vagina, and a little into the uterus. The next day the mare should be bred.

Unfortunately, there are many obscure and unremovable causes of sterility in females. When the general appearance of the animal is healthy, and a manual examination of the organs reveals a normal condition, and, at the same time, repeated attempts fail to cause conception, we are general-

ly justified in assuming that there is some chronic disease of the generative organs that cannot be corrected. have descriptions of him by some who had seen the animal, and we know that his color was a light roan, darker about the neck and shoulders. Comet (of whom we have a good portrait) was much the same, but apparently even lighter. Now, it is a remarkable and interesting fact, to which I wish to draw particular attention, that the great majority of the finest specimens of the Shorthorn breed, both male and female, have been of this pattern. Such was more especially the case in the earlier days of the breed, but we see it even in the most recent years. Let anyone examine a series of portraits of the most famous Shorthorns, from the days of Colling until now, and I think he cannot fail to be struck by the number of them that are of a roan color—generally, indeed, of the true Favourite pattern—that is to say, lightish roan, with more or less red about the head, neck and shoulders. Pure, solid reds are few in number—much fewer than pure whites.

Let me run over the names of some of the most important animals of a roan color, beginning with Favourite 252, his son Comet 155, and the great herd matron Princess, with her light-roan daughter Eliza, both very prolific cows, and progenitors of the Gwynnes and other famous