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considered, gained in complacency and lost in virility, in the administration of matters connected with his department. The statement recently credited to a Winnipeg veterinarian respecting the prevalence of tuberculosis in cattle slaughtered for the city's consumption is, we believe, overdrawn. The unfortunate thing in connection with these meat exposures is that innocent stockmen will suffer; the U. S. export trade in meats can be expected to fall off for a time until people have forgotten the cyclone that struck Packingtown. Meat inspection is of great value to the public, if carried on by a force of properly qualified men, under a good executive head, with power to follow diseased meat to the fertilizer tank, some inspection must be done in clean, well lighted surroundings to have it well done, without which it is useless to attempt it, the public should not be expected to put up money to pay for the acting of a farce.

HORSE

Emasculation of Equines.

The best time to castrate horses is between one and two years of age, when the structural characteristics of the sex are evident. Horses castrated under one year old are unsexed before their character has developed, and grow into loosely-made animals with flat sides, narrow chests, and long effeminate-looking heads. They often lack stoutness, courage, and endurance, because these qualities have not had time to become properly developed. Several breeders who used to castrate their horses under twelve months old, now allow their colts to run entire until they are between fifteen and eighteen months old, and report that there is a decided improvement in the young stock. With improved castrating instruments, the emasculator (resembling scissors, only with the cutting edge grooved, thus making crushed rather than clean cut sections of the blood vessels, and the ecrasor, or chain instrument based on the same principle), the risk of operating on the older animals is no greater than in castrating nine months old colts by means of the obsolete smearing-iron, while the operation is more quickly performed, with less pain to the subject.

The successful altering of horses is dependent on three main things, cleanliness on the part of the operator, good health of the animal, and regular exercise afterwards.

Sidebones.

Many opinions are heard from horsemen or would-be considered horsemen regarding this unsoundness, and its importance. No animal with it should be used for breeding purposes. To aid the uninitiated to get a proper understanding of this disease, let him get a foot cut off at the fetlock, and skin down to the hoof. You will then see a cartilage, which is a kind of prolongation from the bone inside (coffin or pedal bone), and resembles the cartilage which prolongs the shoulder-blade of mutton you may have noticed on your table. Unless you get an accurate knowledge of the position, thickness, and "bendability" of this cartilage in a sound foot you can never become a judge of sidebone. Sidebone is a conversion of part or all of this cartilage into bone, by which, of course, it loses its elasticity, and will not bend when compressed by your thumb. In light horses it is very bendable, but in thick, coarse pasterns needs much education of the touch to be able to decide in recent cases where only a slight ossification (as it was recently put by an agricultural college student at veterinary classes, 'bonyfication') has taken place.

A Fallacious Theory.

An Englishman writes of a much-discussed theory as follows:

"The theory of saturation is one which, partly, no doubt, owing to its incorporation in a book on breeding race-horses, has obtained world-wide credence. In the words of Mr. Bruce Lowe, the prophet, if not the propounder, it is defined as follows: 'Briefly put, it means that with each mating and bearing the dam absorbs some of the nature of actual circulation of the yet unborn foal, until she eventually becomes saturated with the sire's nature or blood, as the case may

be.' This theory is so nearly identical with that of Telegony, or the influence of the previous sire, that we may as well take the two together. Telegony is, as a rule, considered to be the result of influence on the germ cells alone, whereas the definition of saturation implies an actual change in the tissues and organs of the dam. That the first sire or a previous sire, does exert some influence on the future progeny of the female, is universally held and acted upon. Farmers all over the country firmly believe that, by putting a mare first to a Thoroughbred, they ensure "quality" in her future progeny by a heavier sire. Among all classes of breeders, too, the belief that the production of a mongrel or crossbred will spoil a female in future for the pure breeding of her own kind, is strongly held. Many instances of the appearance of puppies resembling previous sires could be quoted, but we do not attach much importance to these so-called authentic cases, all drawn, curiously enough, from the kennels, because, owing to the peculiar habits of the dog, the paternity of a litter is often open to doubt. The whole matter is of much interest and importance to naturalists and breeders, and has so recently been the subject of investigation and controversy, that a repetition of a story of the origin of the modern belief in Telegony, may not be without interest.

In 1820 Lord Morton communicated "a singular fact in natural history," in a letter to the President of the Royal Society. Being the possessor of a male quagga, he mated him with a young chestnut, seven-eighths-bred Arab mare which had never been bred from before. The result was a female hybrid. The mare subsequently passed into the hands of Sir Gore Ouseley, who bred from her on two occasions by a very fine black Arabian horse a colt and a filly. These colts are described and pictured as having the character of the Arabian breed, but both in their coloration and in the hair of their manes they bore a striking resemblance to the quagga. Both were bay and possessed dorsal stripes, stripes across the shoulders, and dark bars across the back part of the legs, and their manes were said to be entirely or partially upright. This seems conclusive proof enough, as far as it goes, that the quagga had "infected" the seven-eighths-bred Arab mare, and until recently it has been accepted without question. One point, however is worth investigation. Could the "very fine black Arabian horse" have been pure bred? It is generally held by those most qualified to judge that such a thing as a pure black Arab does not exist. If this is so, the colts produced by the chestnut mare may have been thorough mongrels instead of fifteen-sixteenths Arabian blood, in which case reversion or the reproduction of an ancestral type of coloration would not be surprising. In any case with this lapse of time, we must not pin too much faith to this example of apparent Telegony as proof of the soundness of the doctrine. Such authorities as Captain Hayes, Spencer, Romanes and Darwin believe more or less firmly in the influence of the previous sire, while against them we find the opinion of Professor Ewart, Weismann, and a number of German breeders.

One would have thought that definite information would have been obtainable from mule breeders in the United States and France, but some accept the infection of the germ theory, while others affirm that they have never seen any evidence of its influence. It is suggestive that, as a rule, certain mares are kept for mule breeding alone, and are seldom, if ever, allowed to breed their own species after producing a hybrid.

The thanks of breeders are certainly due to Professor Cossar Ewart, of Edinburgh, for his enterprize in endeavoring, as nearly as possible, to repeat Lord Morton's experiment. The quagga being extinct, a Burchell's zebra took its place, and was mated with a number of mares of different varieties. In some cases the hybrids were the first-born of their dam; in others the mares had been bred from before. All the mares were subsequently mated with horses, and it might be supposed that if Telegony is of such constant occurrence as breeders would sometimes lead us to suppose, some, at any rate, of the progeny of these mares would show signs of the influence of the previous zebra sire. The results were, however, of an entirely negative nature, and the foals produced possessed no characteristics which could not be ascribed to reversion. The result of these experiments has dispelled all belief in the doctrine among scientists, even if it still continues to exist in the popular imagination.

The fact is, that many of the strange results which fall to the lot of every breeder are due to

reversion, or the appearance of a youngster in the guise of a more or less remote ancestor. Ignorance of the ancestry of the animals we are breeding leads us to attribute these variations to some mysterious cause, instead of to the true one, with the result that these strange beliefs get credited and spread among our equally ignorant friends. Every breed of animal has a tendency to produce young with one or more of the primeval characters, but it is only when we have taken the trouble to study the early history and paleontology of the variety in which we are interested that these variations become pregnant with interest and meaning. As we shall touch upon the subject of reversion further on, we will bring this subject to a close, with the assurance that the influence of a previous sire, if it does occur is of so rare an occurrence that it need never be taken into consideration by breeders, and that no mare should be discarded for the future pure breeding of her own kind because she has bred a colt of another variety, or even a hybrid. Furthermore, the futility of putting a mare first to a Thoroughbred with the idea of influencing her subsequent progeny will be readily understood.

The experiments made in crossing horses and other animals have equally failed to support the saturation theory. No evidence is forthcoming that any female animals are liable to be saturated with the 'nature or blood' of the males to which they repeatedly bear offspring."

A One-Sided Horsebreeding Contract.

Competition is the usual excuse of the zealous stud horseman for giving a stand-and-suck foal insurance contract, in which he takes practically all the risks. That he should make such ridiculous promises is an evidence that he is not up in the business and that it is only a short time before he will be down and out, to increase the crowd of stallion men, who have lost money. The stallion owner has fulfilled his part of a reasonable breeding contract when his horse has got the mare with foal, and the man who will deliberately take the further risk by insuring 'to stand and suck' means that he is anxious to take chances that he has no right to take. The elements of chance entering into horse breeding are several, those relating to the health and care of the mare both before and during pregnancy belong to the owner of the mare and should be stood by him.

Good Horses Make a Land Famous.

The question is often asked what makes certain districts in Scotland noted for Clydesdale horses and other districts in England celebrated for Shires or Hackneys. In short, what makes any district famous for its stock? In charity we sometimes ascribe it to the natural conditions of soil and climate and these have a great deal to do with it, but the real reason is found in the men who conduct the breeding operations. Rich pastures and salubrious climes tend to modify types, but there is more in the work of man than in the environment of nature.

The making famous as a stock center, any district is not simply the work of one man, although there have been men who have accomplished the feat, but is rather through the pursuit of one object by several people in a community.

The reason why the Clyde valley is known as the home of one of the greatest of draft breeds was because the farmers of that part set themselves to the task of developing and improving a certain type; there was nothing in the nature of a miracle or natural phenomenon about it. And as great results may again be accomplished in any community where the inhabitants set themselves resolutely to their task. What is required first is one or more moving spirits to create and maintain interest and to inspire courage. All over the country the men who invest their money in and devote their time to pure bred stock are examples of these leading spirits, but it is remarkable that so few of their neighbors join them in their work. Recently we had the pleasure of visiting a locality which is something of an exception to the general rule. We refer to the Napinka district in particular, but there are others where similar efforts are being made. The Napinka Horse syndicate some three years ago purchased the renowned stock horse Woodend Gartly, and from that time on several of the most progressive farmers have devoted themselves to the improvement of their horse stock by the purchase of pure bred mares. At the present time within a radius of a few miles there are several farmers breeding pure bred Clydesdales and nearly all their neighbors are improving their grades, so that in time, if the