

Horseshoeing.

That too little study has been given to the study of the structure of the hoof of the horse by most of the practicing horseshoers in the country will readily be conceded, and there is no doubt that in many instances permanent injury is inflicted upon the horse through lack of knowledge on the part of the smithy who undertakes this important work. In a useful article on this subject, in the *Breeders' Gazette*, Dr. Grenside, V. S., says, in part:

The practice of paring away the sole of the foot, or, in other words, thinning it, is a pernicious one. The shoer appears to like to do this, as it cuts very easily and gives, as he thinks, a very neat appearance to the hoof. The owner appears to endorse this, as he is very careful to have his groom stop the feet, forgetting that he has permitted the shoer to remove a much more efficient stopping than any artificial one in the outer surface of the sole. This is very easy of explanation and illustration, if one examines an unutilized hoof. First of all, it must be noted that the outer hard and tough crust, called the wall, grows out indefinitely, unless it is worn or broken off by contact with the ground or reduced by the instruments of the shoer. This is not the case with the sole, for it is so constituted that after it attains a certain thickness, by a process of nature, it exfoliates of its own accord, thus maintaining its normal thickness. These outer scales that keep coming out are nature's stopping. Why? Because by protecting the inner and deeper layers from the drying-process effects of the air they maintain all the moisture that is necessary in the sole. If you cut through by paring, and examine a normal sole, you will find that the part next to the quick (the part freshly secreted by the quick) is moist, and as you proceed to the surface of the sole it gradually gets drier, the outer part being almost entirely free from moisture and admirably adapted to protect the inner and moister part until it gradually is forced outward by fresh growth within, and becomes, in its turn, a "stopping" for the inner and freshly-formed layer of sole.

What happens if the knife is used instead of nature being allowed to go on with its process of desquamation? The deeper parts of the sole become exposed to the action of the air before they are prepared for it, by a gradual process of drying, and abruptly dry and contract. This is what causes the sole to become increasingly cupped and the hoof to become contracted, in a measure. The stopping of horses' hoofs is not necessary; as a rule, if the sole is left as it should be, in an unutilized condition. All the fuss and waste of time and material involved in the stopping of horses' hoofs is based on error. All that is necessary to remove of the sole in a normal foot is accomplished when the rasp is flatly applied to the lower surface of the wall in reducing it to its proper dimensions. The thicker the sole, the better, providing it does not project below the wall. One can readily understand how much more efficient a thick sole is as a protection to the underlying quick, especially on rough, frozen and stony roads, than a comparatively thin one. Now, if the sole is as thick as it should be, and in such case the white line would necessarily be, it is a good guide to the shoer in the majority of cases to rasp down to the white line.

Another error frequently made, though not so commonly as mutilation of the sole, is cutting away the frog. It does not require a deep student of physiology of the foot to see almost at a glance the function of the frog. Take a normal hoof and examine the frog, and you will observe that it is placed at the back of the hoof where the major portion of the pressure comes. You farther find that, unlike either the sole or the wall, it is endowed with elasticity to a degree equalling India rubber, so it is very evident that it is not only intended to come in contact with the ground, but also to act as a buffer in lessening concussion. Now, what happens if you cut it away and leave the heel so high that the frog does not come in contact with the ground? It shrinks, and becomes as hard as wood, entirely unsuited to stand pressure without bruising the underlying quick, and no longer capable of performing its office of breaking concussion. Not only that, but with a thin, dried-up sole, the shrunken hoof draws the quarter with it, and you have contracted feet, or at least heels. After this mischief has been done through ignorance, then the horse must have that cure of all ills of the foot (according to some wise ones)—spreaders—to overcome the contraction of the hoof. Although horses are largely kept under artificial conditions there is no reason why their hoofs should become contracted if rationally treated, unless some disease of the foot develops, such as navicular disease. Under such circumstances, the contraction is the result of disease, not the cause.

Another pernicious practice among shoers is that of "opening the heels," which weakens the hoof and sometimes causes heel cracks, which are even more obstinate to treat than quarter-cracks. "Opening the heels" is supposed to overcome con-

traction of that part of the hoof, but it is more likely to help it along, under usual conditions, than it is to overcome it. Another point that should be carefully watched in preparing the hoof for the reception of the shoe is to have it level. If either inside or outside of the hoof is left too long, it changes the direction of the line of weight and subjects some portion or portions of the extremity to undue strain or pressure, and the consequent liability to injury.

Horses that are turned out into soft fields or put into box stalls or barnyards, where there is not sufficient attrition to wear the hoof to its normal dimensions, should have it rasped down every month to its proper proportions. This particularly applies to colts, and neglect of it is the initial step in causing hoofs of defective formation. The practice is very general when city horses are turned out in the country, for some reason or other, to put "tips" on the hoofs to prevent breaking of them. This plan is a very good one, if the tips are properly applied, but the way it is usually done is most irrational. The usual course is to prepare the hoof as for ordinary shoeing, then put a tip on about a quarter of an inch thick. The lengthening of the toe without a corresponding lengthening of the heel leads to tilting backward of the foot when it is placed on the ground. The toe, protected by the tip, grows, while the heel does not, so that the condition becomes intensified, and a great strain is put upon the supporting structure of the fetlock, and the normal relations of the various parts of the fore legs are disturbed.

All this may be avoided by using light tips and having them completely sunken in a groove made in the wall around the toe, so that their lower surface is flush with the wall at the heel. In this way the level of the hoof is maintained, there is normal pressure on the frog and heels, and no breaking of the wall. In other words, the hoof is placed in perfectly natural conditions without the danger of too rapid breaking off of the wall.



A Pretty Baby of the Equine Kingdom at Edmonton Exhibition, July, 1904.

Stables Should be Well Lighted.

It is an indisputable fact that a large percentage of farm stables are insufficiently lighted, and, as a result, horses are not as comfortable and free from disease as they otherwise would be. Sunlight is an essential to health, either in man or beast. It purifies the air, destroys germs, is an excellent disinfectant and health-giver.

It is probable that poorly-lighted stables have a more marked effect upon the eyes than upon other organs. The eyes certainly become accustomed to semi-darkness, and an animal that is kept in such a place can see fairly well, and if kept there constantly it is possible his sight might remain practically uninjured. But the injury arises from the extreme or violent changes of light and darkness, being several times each day taken out of the stable into the light. During the time the animal is in darkness or semi-darkness, the muscles which contract or dilate the pupil act so as to dilate it, when, instead of being well-marked elliptical in form, its shape approaches a sphere. The optic nerve in the meantime accommodates itself to circumstances and sight is fairly good, but so soon as the animal is taken out of the stable into the strong light, the circular muscular fibres of the iris contract, and thereby contract the pupil. These frequent and violent changes have a tendency to weaken the eyes, and, no doubt, are responsible for many cases of ophthalmia (inflammation of the outer covering of the organs.)

Some claim that cataract is often caused in this way, but I am not of this opinion. Cataract

is, in most cases, the result of repeated attacks of a constitutional, periodic disease, known as periodic, or specific, ophthalmia, and I am of the opinion that this disease will not be produced by usage, where the predisposition to hereditary tendency does not exist. At the same time, such usage as has been described, by weakening the eye, may act as an exciting cause for the disease, the predisposition to which exists, and which, under proper sanitary conditions, might not occur. Another disease of the eye, which causes blindness, and is called "Amaurosis" (paralysis of the optic nerves), a disease in which, at first, there is little or no change observed in structure, more than a dilated and spherical form assumed by the pupil, may be induced by insufficient light.

The general health of the animal is also more or less affected by the light or darkness of the stable in which he spends several hours each day. Insufficient light in a stable is often the result of a desire on the part of the builder to have the building so constructed that it will be warm. This is a mistake. If windows are properly constructed, and especially if double windows are used in cold weather, it does not follow that they will admit cold, and even though they may, a horse or other animal can endure a comparatively low temperature, provided the air is pure, the general surroundings dry, and sunlight is freely admitted. I think that few will dispute the fact that it is better to have a stable built especially for a horse stable, one in which other classes of stock are not kept. This, of course, is in many cases inconvenient or impracticable, and we find in the majority of modern farm buildings that a large barn is erected on a stone basement, and stabling for all classes of stock is provided in the basement. The habit of having the basement built on a sidehill, and largely underground, has, fortunately, generally been discarded. A building where all compartments are under one roof certainly makes things much handier, and is more economical in many ways, even though the horses are not as comfortable as they might be under other conditions. Where this style of building is erected, special care should be taken to have all stables, more particularly the horse compartment, well lighted, and while we cannot have these particulars as well looked after as we can where we have a special building, we should do our best.

My ideal stable is one of sufficient width to have a row of stalls facing each wall, with the horses' heads facing the wall, and a wide passage between the stalls. If space can be spared, I would have a box stall for each horse, but this is generally too expensive. Whether the stalls are box or single, there should be a small window in each, one that can be slid back into the wall in warm weather, and of sufficient height to require the horse to elevate his head in order to look out or protrude his nose. The window admits the sun and light at all times, and when all are open it creates a draft across the stable, which, in warm weather, is very grateful to the horse, and the draft is so high that it does not strike the body, which removes the danger of chill if the weather should turn suddenly cold when the windows are open. The stable is lighted well at all times, and horses enjoy standing in a stall of this kind much more than when facing a dead wall. Even when facing dead walls, if the windows be plentiful and of the proper height behind them, they do not suffer from want of light. Of course, in arranging a horse stable in the basement of a barn, it is seldom, if ever, possible to construct it so that each horse will face a window, but we should do the best we can in this respect, and, at all events, have plenty of glass, even though it may be at the expense of a certain amount of heat. Horses appreciate sun and light, so let us supply them with as much as possible while tied in a stall or loose in a box. "WHIP."

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