

HORSE-SHOEING.

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The art of horse-shoeing originated many centuries ago, and had for its primary object the protection and preservation of the foot. At the present day it is also employed to correct faulty action, and to expedite recovery from certain diseased conditions.

It can safely be estimated that the majority of cases of lameness are the result of improper shoeing, and no matter what good qualities a horse may otherwise possess, with unsound feet he is comparatively useless. In the light of these facts, the question of horse-shoeing becomes one worthy of the careful consideration of every horse-owner, who should be able, at least to some degree, to distinguish between good and poor shoeing.

No one can become a competent, practical horse-shoer without first having acquired a thorough knowledge of the anatomy (structure) and physiology (functions) of the foot. In Great Britain horse-shoers are required to take a course of instruction in these branches and pass satisfactory examinations before being licensed to practise the art, and it would be well for both horses and owners if such a law existed in Canada to day.

In a treatise of this kind it would be impossible to give a complete description of the anatomy of the foot, and we will confine ourselves to a brief mention of the different parts of the hoof. In equine anatomy the "foot" signifies the hoof and its contents. The hoof is a protective horny case enveloping the lower extremity of the digit, to which it is closely and firmly united. It may be conveniently divided for description into the wall, the sole and the frog. The wall is the visible portion of the hoof, as it rests upon the ground. It consists of minute, hair-like, horny fibres, held together by a kind of cement substance. At the heels it is sharply inflected inwards, towards the sole, to form the bars. It is covered by a thin layer of soft horn, the "periople," the function of which is to prevent the hoof from becoming dry and brittle.

The sole occupies the space between the lower border of the wall and the frog, and in a natural and healthy state is slightly concave.

The frog is the triangular mass of spongy horn situated between the bars. It has several distinct functions. Firstly, being highly elastic, it tends to obviate concussion or jar and injury to the limb; secondly, as it projects, in its natural and unutilized state, beyond the wall, it was obviously intended to bear weight; thirdly, from its shape and position it is serviceable in preventing slipping. Interference with the performance of these functions will result in disease or wasting away of the organ. Wear and pressure are essential for the proper and healthy development of the frog, and the pernicious habit some blacksmiths have of paring it away at every shoeing cannot be too strongly condemned.

The foot should be shortened from beneath, using the knife as little as possible. Only the dry flakes which nature is about to cast off should be removed from the sole and frog. The bars should be left severely alone. The heels require to be lowered till they are exactly even with the frog.

After a sufficient quantity has been removed, the ground surface should be made perfectly level by the use of the rasp. In levelling the foot the obliquity of the pastern must be taken into consideration, and the angle of the wall made to conform exactly to the angle of the pastern.

After the foot has been levelled in the manner above described, the sharp or feather edge should be removed by the rasp—to prevent splitting or chipping—before the shoe is applied. The shoe must then be fitted so that its outer edge corresponds exactly to the margin of the crust. In this way no rasping of the wall after the shoe is applied will be required. Probably one of the most common errors in shoeing is endeavoring to fit the foot to the shoe instead of moulding the shoe to fit the foot.

Shoes should be as light as possible. The number of nails required will depend largely on the size and toughness of the foot. Three on each side will generally be sufficient for roadsters and saddle horses, but in all cases they should be as few as possible.

Calks should never be used unless absolutely necessary. A shoe concaved so as to make a sharp rim around the outside will generally suffice for ordinary purposes.

When clips are used, notches should be cut in the wall for their reception, as driving them down will press the hoof in and injure the sensitive tissues beneath. Springing the heels is an indefensible practice, and often causes quarter cracks and other foot affections.

CANADIAN BUTTER TO THE FRONT

NOT LOADED WITH WATER.

By PROFESSOR H. H. DEAN.

The average percentage of moisture in forty-eight samples of butter sent to the chemical laboratory from the Ontario Agricultural College dairy during the past season was 11.034. The average moisture in fourteen samples selected at random from our ordinary churnings was 11.297 per cent. In several trials where a centrifugal dryer was used the moisture averaged 9.402 per cent, while samples of the same butter, treated in the ordinary way, contained 10.125 per cent. of water.

We consider this a good showing for Canadian butter, especially when we know that the best German butter averages from twelve to fifteen per cent. water (Fleischman), and that the English butters range about the same (Oliver). In 1895 Dr. Holm, of Copenhagen, Denmark, gave me the following as the averages of Danish butter:

1891	Danish butter contained	14.57	per cent	water
1892	"	14.57	"	"
1893	"	11.24	"	"
1894	"	13.83	"	"

It will thus be seen that if the butter made in the college dairy fairly represents Canadian creamery butter, and we teach in our dairy school the same methods practised in making our own butter, our butter contains nearly one per cent. less water than the best German or English, and over two and one-half per cent. less than the average Danish in 1894, which are the latest figures I have.

The water in butter has no more food value than the water from a well,

or from a city waterworks system, and Canadian makers would do well to keep the amount of water in their butter under twelve per cent., as our customers will sooner or later find out that water at twenty and twenty-five cents per pound is dear food.

TIMELY POULTRY THOUGHTS.

By THOMAS A. DUFF, Toronto.

Now is the time of the year for chilly blasts and snow flurries, consequently all poultry houses should be in first-class condition, and the quarters made as comfortable as possible. Remove all dung, and take out two or three inches of the surface soil, and replace the same with fresh sand as dry as it can possibly be obtained. The soil so removed would make an excellent top dressing for a lawn, or to fertilize a poor spot in the farm garden—for surely all farmers now have a kitchen-garden. If it could be lightly spread where onions are intended to be planted next spring, you would be surprised at the increase in size and yield.

The above remarks obviously apply to those houses without board floors, and resting upon the ground; where there is a board floor, this should be thoroughly scraped and, if earth be used, fresh, dry sand placed thereon. Personally, I prefer cut straw or chaff to the depth of two or three inches, and when this becomes damp or foul let it be removed, placed upon the land, and clean straw scattered upon the floor.

Be sure to provide a dust bath for your fowl. For twenty-five hens (and no more should be kept in one pen) make a box of rough lumber two and one-half feet wide by four feet long and nine inches high. Into this put road dust, which has been previously gathered. Should this duty have been neglected, use as light and as dry sand as can be obtained. Fill the box to within two or three inches of the top and add from a quarter to half a pound of sulphur. Place this box where the sun will strike it, and you will have as good a preventative of vermin as I know of, cleanliness alone excepted.

It is time the windows, which perhaps have been out all summer, be returned and fastened snugly in their places. Replace any broken panes of glass. The walls should be white-washed and everything be made as sweet and clean as possible. Where convenient, apply this with a spray pump, thus forcing it into all cracks and crevices. Whitewash makes a wonderful transformation in a hen house, quickly sweetening, cleaning and brightening everything it touches.

If the poultry house is in any way damp measures should be taken to remove the evil, for dampness is a virulent cause of coughs, colds and roup, and a long succession of ills to which poultry flesh is heir. An excellent authority says: "A damp site may be removed by digging out the soil two or three feet deep and filling in with rocks, placing a few inches of gravel on top of the rocks."

Remember that it is during the winter months the money is made in the poultry business.

Be sure, therefore, that your house and mode of feeding are conducive to your hens commencing to lay as early in December as possible, and keeping

at it incessantly until August or September.

Do not forget to save plenty of green food with which to supply your fowls during the months when all that which is green is covered by a mantle of snow. Green food is an absolute necessity in all well regulated poultry houses.

FARM POINTERS.

Winter is at hand, and everything should be put in shape for it. The spring is supposed to be a busy time, but there is no season of the year so busy as the short days of the fall, so get a hustle on.

See that the stable floors are all right. Replace all broken or worn out plank. (This should have been done during the summer, on wet days, when you were loafing.)

Look the cow ties over, and have the broken ones repaired. A few cents spent now may prevent a nasty accident later.

Replace all broken window panes with new ones; don't use straw or a piece of board instead. Let in plenty of sunshine; it is the best thing that comes into the stable.

See that all the stable doors swing properly on their hinges, and that all fastenings are in repair. Close any large cracks around the doors.

If the stable is a frame one, and the walls are only one thickness of boards, line up the inside with building paper, and, if you can afford it, add a lining of lumber also. But add the paper anyway; it is very cheap, much cheaper than hay or grain for keeping stock warm.

Go over all the buildings and fasten all loose boards, etc., and fasten all loose pickets and boards on the fences around the buildings.

See that the gates around the barnyard are in good working order; shut them, keep them shut, and thus keep the cattle in the yard when they are allowed out. Don't let them have the run of a field, and perhaps the farm.

Gather all farm implements into the implement house, or wagon house, or barn. Get them in under cover some place or other before they get frozen in the ground. If there is positively no place to put them, gather them in a sheltered place and cover them with boards, but don't leave them scattered all over the farm. It will take only a few minutes to grease or oil all polished surfaces so that they will not rust.

Look over the stock, and cull out all animals that it will not pay to feed during the winter. Don't have any sentiment about this, but do the culling from a business standpoint. You are in business, and no business man will feed unprofitable stock. Dispose of those cows that will not yield a profit on their feed. Many farmers have tried to accumulate wealth by keeping cows that do not pay for their board; so far, none of them have succeeded.

Don't "winter" any stock except work horses. Feed all stock liberally, so that no animal will be standing still, but all growing in value, or producing valuable product. There is more profit in feeding one good cow than two poor ones. Be sure you are not feed-