



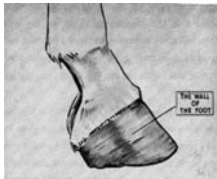
UNDERSTANDING *The Horse's Hooves*

Many people feel that shoeing is a subject best left to the blacksmith because it is difficult to understand. To shoe a horse, certainly is difficult and requires years of practice and experience. To understand about shoeing can be quiet simple and interesting.

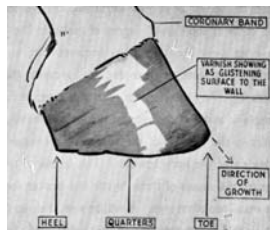
To put shoes on a horse's feet is at best an unnatural act so is putting a saddle on its back. Nature never intended horses to wear shoes nor to carry saddles. Our ability to do either without injury to the horse requires that we shall have some understanding of the structures we are dealing with and the kind of damage that will result from ignorance. So let us see first of all something of the structure and function of the horse's foot and what is nature's intention in relation to both.

For practical purposes a foot consists of three parts: the wall, the sole, and the frog. All of these are composed of horn which being non-sensitive explains why shoeing nails can be driven through the wall without causing the horse pain.

The wall of the foot is the part you see when the foot is on the ground. The wall extends right round the foot so affording it protection at all sides. Around the top is the Coronary Band from which the wall grows. The hoof is constantly growing from above downward just like your finger nail of which indeed it is the counterpart. Thus wearing away of the wall at the bottom, occasioned by contact with the ground, is made good by new horn constantly growing

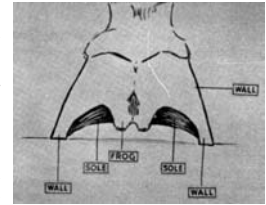


ing down from the top. There is one of the wall to which it is necessary to draw special attention. Nature has given the wall a protective coat or varnish which covers it completely, the object of which is to prevent evaporation of moisture from the horn beneath. This coat is difficult to see but may be recognized as the glistening surface to the wall or to your fingernail. All healthy horn contains some small degree of moisture but if this dries away then the horn becomes hard and brittle. This coat is provided to prevent this from happening. Any interference with this coat, as for example in abuse of the rasp on the wall in shoeing, results in the removal of the coat with consequent drying up of the horn beneath. This is one of the most fruitful causes of those brittle and broken feet that are all too often seen. It will be a real help to us all if we realize that this coating does exist, why it has been provided and how important it is that it should not be rasped away.



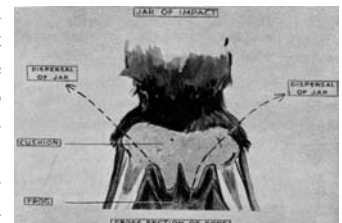
Now we come to the Sole. The Sole covers the ground surface of the foot and its object is to protect the foot from injury from below. Unfortunately it is not too thick for this purpose but we must remember that nature did not visualize a state of affairs in which nails and pieces of glass are left lying about and so did not make provision against accidents from such causes. The lesson to be learnt here is that any thinning of the Sole by the blacksmith when the horse goes to the forge is to be deprecated. Thinning of the sole with his knife makes it look smooth and neat but is a bad practice. In the healthy state the sole curves slightly instead of being absolutely flat. The proper way to express this is to say that it is slightly concave. Now you know that if you turn a saucer upside down and press it into the ground it is almost impossible to move it. The concavity of the saucer and its sharp rim give a great grip upon the ground. The idea is the same in the horse's foot,

the slight concavity of the sole and the sharp rim formed by the wall giving a grip on the ground which can only be shifted by a pull from above. In other words it is one of nature's precautions against the Horse slipping.



Moreover, the Frog is a bit of a puzzle, partly on account of its funny shape and funny name, but more particularly because there is nothing like it in our own foot. It is necessary therefore to explain why nature has given the horse a frog and for what purpose. Actually the Frog is quiet one of the most interesting parts of the horse's body; the real purpose of the frog is an anti-slipping and anti-concussion device. When a horse needs to pull up sharp or turn, there is considerable risk of him slipping or straining himself unless he can obtain a secure grip on the ground. Likewise, when a horse gallops fast there must be considerable jar to the body at every step, leading eventually to lameness unless some means existed of deadening or absorbing the shock. The Frog serves both purposes, anti-slipping and anti-concussion in the following ways. The Frog is made of horn but of a softer kind of horn than the wall or sole. It is very much like a piece of India-rubber, and just as rubber soles to a pair of shoes give you a grip on the ground-so with the horse's frog. This power is enhanced by the fact that when a horse puts his foot to the ground the frog region is the first part to make contact with the ground. In a fast turn he sticks his feet out thereby lowering the frog even more. The peculiar shape of the frog, pointed towards the front and broad at the back, serves the purpose of driving a wedge, point foremost, into the ground thereby materially assisting in braking power.

Furthermore, when you jump over something you are taught to land on your toes and not on your heels, for if you land on your heels, you suffer a very nasty jar to all the bones of your leg. By landing on your toes some of the shock of impact is dispersed before it reaches your leg bones. The horse's frog acts in this way and serves the purpose of preventing jar to the bones of the leg. This is very important for constant jar of the leg may well lead to lameness eventually. Now let us see how the frog acts as a shock absorber. When the foot makes contact with the ground the frog yields slightly so adsorbing some of the jar. What remains is then transmitted upwards to a soft cushion which lies within the foot just above the frog. This too yields but in an outward direction so forcing the heels apart. I.e. the jar of impact is transmitted upwards and then dispersed outward as shown on the dotted line in the picture, thus saving a great deal of concussion from traveling up the bones of the leg. It is for this reason that blacksmith in shoeing a horse avoid driving in nails at the heel region as nailing at the heels would interfere with the slight outward expansion of the heels. We should at all times do everything possible to keep it healthy and working properly; in Fact, the more work the horse does the larger and stronger does it become. So we must ensure that in shoeing a horse due provision is made for the frog always to come in contact with the ground and so function properly.



So much then for this brief outline of the structure of the horse's leg; in our next issue we will be giving you some brief information on how to shoe those feet ■