

**Ideas on the present day approach to
Farriery as dictated by horse-owners
and financial considerations**

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INTRODUCTION

The object of this essay is to describe my treatment of actual cases of sandcrack, corns and puncture wounds, weak hind limb flexor tendons in foals, laminitis and to set down my general observations on corrective trimming and shoeing.

SANDCRACK

During the last year and a half, I have encountered a particularly interesting case of sandcrack. This occurred in a black three quarter thoroughbred animal, which was very hot-blooded, a very fast mover and reportedly difficult to shoe. The sandcrack was located just off centre of the toe.

The hoof had been bound with two inch wide adhesive tape, and it was quite apparent that this had not been removed for a considerable time, causing the hoof to lose its normal shape. The ground surface was flattened out like a rim and the hoof was very weak and poor in quality.

The corrective shoe which I made was clipped each side of the sandcrack. In addition I welded a full plate into the shoe in order to reduce the pressure on the frog and hold the wall more firmly. I have discovered that when the unshod foot came into contact with the ground the hoof would split open again, thus defying any chance of healing of the sandcrack. In order to prevent this happening during re-shoeing, I took the foot forward and rasped off the old clenches, and then I bound the hoof with non-stretch adhesive tape. I removed the nails individually with nail-pullers, removed the shoe, dressed the hoof and then refitted the shoe. My object was not to allow the foot to make contact with the ground during this process. After nailing on the shoe, I

removed the adhesive tape and clenched-up the nails by the normal procedure.

In order to relieve pressure on the sandcrack, the base of the hoof wall on each side of it was recessed, and a corresponding recess fuller in the shoe.

This particular animal had to grow the hoof out one and a half times in order to remove the sandcrack and gain a sound hoof. This is a long and tedious process, but upon reflection, I feel that had I used the "adhesive tape and no ground contact" method earlier, I could have reduced the corrective period by several months.

In animals with sound hoof walls, there are of course alternative methods of treatment to that described above by stabilising the sandcrack with plates or nails etc.

CORNS AND PUNCTURE WOUNDS

Corns are caused by the rupturing or crushing of blood vessels in the sensitive sole (Corium of the sole) between the bars and the horny wall. This area is known as the seat of the corn.

Corns are classified dry, moist or chronic.

The latter exists due to the entry of bacteria during the moist condition and causing the corn to become septic.

Corns usually occur on the inside medial of the front feet, due to the animal taking two thirds of its weight on the latter.

However, corns can also arise in any heel of any foot. They can be caused by shoes with narrowed heels (loss of bearing surface) shoes which are too short and fitting inside the horny wall at the heels, excessively lowered heels, shoes left on too long, and

excessive road work.

The most effective remedy for a corn is to relieve the pressure (by cutting) which has been created by inflammation and a build-up of puss. Once this has been effected (and after poulticing for a few days) it has always been my practice in the past to fit a set-heeled shoe, although this has then entailed further daily visits, to remove the shoe for redressing the injury with hydrogen peroxide or medication prescribed by the veterinary surgeon. Not only is this time-consuming for the farrier, but it is obviously expensive for the owner.

Alternatively a three-quarter shoe could be fitted but this would not offer any protection to the injury. If the animal is not required to be worked then of course it would be wise to leave it unshod after treatment

After considerable thought on this aspect of the treatment, I decided to experiment with a set-heeled shoe with a hole drilled out directly over the affected area. (This type of shoe has the advantage over a spooned-out shoe that the bars do not require cutting away to allow access to be gained to the injury for the application of future medication). The hole is then threaded to receive a brass or plastic shoulder plug. Either of the latter can be easily removed by the owner to facilitate access to the injury and the application of medication after douching the wound with water applied by a hosepipe or "squeeze" bottle. The plug is then refitted. I have found that this method of shoeing, after dealing with the corn, has been very successful in quickly clearing up the infected area and allows the animal to be worked sooner. In fact, the alternative method of daily visits by the farrier is often neglected by an animal owner (due to the expense) and consequently the injury is not satisfactorily and permanently remedied.

This can cause an increase in the volume of puss (which turns yellow), heat in the foot, and severe lameness. The corn has now become chronic, and if not relieved it will break out at the weakest part of the foot (coronary cushion or bulbs of the heels) and in so doing may cause permanent damage to the sensitive laminae and third phalanx.

I was recently called out to a horse owned by a local veterinary surgeon. The horse was slightly lame, and upon removing the shoe and searching the foot, I applied pressure to the sole with my pincers. I was then satisfied that there was pressure due to puss under the sole in the vicinity of the inside of the toe. The owner's daughter had recently returned from college and was most anxious to ride the animal. Under the circumstances I recommended fitting my special shoe after cutting and draining the injury, which was dried with methylated spirits and then packed with Stockholm tar and tow. The veterinary surgeon was happy about the pathological condition of the animal's foot and was equally happy with my proposed shoeing arrangement. Consequently, I fitted a set-in shoe with a plastic plug, as described above. This allowed the animal to be ridden, and yet at the same time permitted treatment of the injury via the inspection hole.

After two weeks I removed the special shoe, and I was able to fit an ordinary shoe, as the injury had cleared up completely.

In the case of puncture wounds or other injuries to the sole, i.e., not beneath the actual bearing surface of the shoe, I have experimented with the same principle, by welding-in a plate to the shoe (cut-away to clear the frog) and drilled and fitted with a plug to coincide with the location of the injury.

Due to the success I have encountered with this method of shoeing I feel certain that it may become more widely used by practising farriers.

WEAK HIND LIMB FLEXOR TENDONS IN FOALS

Some foals are born with very weak flexor tendons, and in extreme cases this condition causes the fetlock to touch the ground.

In the particular case with which I was involved the foal's flexor tendons were still very weak after twelve days, whereas if normal they should have strengthened by this time without any additional support being provided. I was asked to meet the veterinary surgeon at the stables, as he wished to discuss the animal's problem with me. He was most concerned that there might have been damage to the fetlock joint.

It was apparent that support was needed to replace that which was normally provided by a strong flexor tendon. The first method which was adopted, was that suggested by G.R. Adams in "Lameness in Horses". A shoe was made out of 2" x 3/16" flat bar (in order to raise the heels) and fixed in position by means of a plaster bandage. The animal was still standing with the fetlock almost touching the ground after shoeing, but nevertheless, the shoe was left in position for one week as suggested by G.R. Adams. After this time, there was no apparent improvement, and so a more drastic remedy was adopted.

Splints were fitted to the affected limb, and these extended almost the full length of the metatarsel. The foot fitted into a cup to stop it twisting, and with the fetlock joint adjusted to the correct position, the splints were bound to the limb with elastic surgical type. It was hoped that this procedure would allow the flexor tendon to gain strength unimpeded or stressed,

and possibly to contract during the process. After three weeks, the animal became much more active and whilst this was a desirable tendency, it caused problems with the splints, which had to be frequently re-fitted as they now tended to rotate on the limb. However, during re-fitting of the latter, an opportunity was provided to check the amount of deflection in the joint. Upon final removal of the splints, whilst the lowered fetlock was cured, the animal was still walking on the bulbs of the heel, with the toes clear of the ground. It was decided to wait a fortnight for natural correction of the condition, but by the end of this time there was no visible improvement. The condition of the hoof had improved slightly however, and I therefore suggested fitting a tee-shoe, comprising a central bar or stay, welded to the shoe at the toe and extending beyond the back of the frog by two inches. Having made such a shoe, I punched two small holes on either side and nailed it on, taking great care in so doing. With the shoe fitted, the foot was pushed up off its heels and the toe then properly came into contact with the ground.

After four weeks, the shoe was refitted, and after a further four weeks it was removed completely. The animal was then found to be holding the joint and the foot in the correct position, and moving quite normally.

LAMINITIS

In my experience as a farrier, I have found that a very common disease affecting a horse's foot is laminitis, and ponies seem to be more prone than horses.

There are two types of laminitis - acute and chronic (the former being the early stages of the latter).

Acute laminitis (especially the initial onset of the disease) is relatively easy to control and to effect a cure, resulting in a sound animal. However, once chronic laminitis has set in, the resultant increased amount of damage (much of which is permanent) means that an attempted cure will almost certainly be incomplete.

One of the causes of laminitis is the overfeeding and underworking of horses. This manifests itself particularly in the case of children's ponies, where these animals tend to be kept as pets and consequently are not worked sufficiently. I have known laminitis to have set in and be quite unknown to the pony's owner. Often ponies are kept in a field; children are taken to see the ponies and usually feed them tit-bits. This general lack of work coupled with this over indulgent feeding proves too much for the animal and laminitis sets in.

The disease often proves troublesome with brood mares which do not fully shed the placenta after foaling, and this could be due to the long period of inactivity during pregnancy. I have heard old horsemen say that to avoid laminitis in brood mares, they should be kept in light work right up to giving birth.

The disease can also occur due to overworming

Acute laminitis is when the animal is unwilling to move and experiencing great pain. The feet are stretched forward, and the hoof is heated. In these circumstances, the sensitive laminae will be found to be inflamed in the region of the toe and consequently the animal attempts to relieve pressure here by taking its weight on its heels. When made to walk, the animal will take rapid, jerking steps so as to minimise the period of time that the painful toe has to be brought into use

Chronic laminitis is when the foot becomes elongated, with the horny wall of the toe pushed forward from the white line exposing the leaves of the horny laminae. This occurs due to breakdown of the bond of union between the sensitive and insensitive laminae as a result of the lack of nutrition. In this chronic state, the course of the deep flexor tendon passes over the flexor surface of the navicular bone and is inserted in the semi-lunar crest of the third phalanx. The expansion within the toe causes pressure on the third phalanx, which coupled with the tension from the deep flexor tendon (due to the latter being stretched when the animal shifts its weight onto its heels) results in a rotational action. This action in turn brings pressure upon the horny sole. The latter consequently becomes flattened and in extreme cases convexed or even punctured.

It must be appreciated that when an animal has laminitis the pain can be so excruciating as even to prevent the foot being lifted off the ground for the purposes of shoe removal. In such a situation, this can only be achieved by rasping off the clenches and driving the nails out individually with the drift end of the buffer. This has to be carried out on a soft surface (turf or gravel) to allow the driven nails to pass through the shoe, and obviously an animal in this condition would not be re-shod.

When preparing a diseased foot for shoeing the hoof should resemble as normal a shape as possible. This can be achieved by taking the foot forward, and rasping away the horny wall which has become detached from the white line due to the failure of the natural bond. In my experience, the heels should receive plenty of dressing by the rasp, as this will then permit the heels of the shoe to remain the same thickness, thus providing longevity to that part of the shoe which will wear most quickly.

The shoe should be forged out of a piece of flat bar proportionate in size to the foot to be shod, and it should be well seated out to allow for the dropped sole (mentioned above). The nail holes should be stamped far enough back so as to avoid any nails entering the exposed laminae. The central toe clip should be omitted and strong double clips used as per a hind foot. This will facilitate stronger hold than normal, and in addition this will occur where the hoof wall is more sound. The toe should be slightly rolled, but in extreme cases a deep-seated rocker bar may have to be used. A disadvantage of the latter treatment is that the animal can only perform limited types of work.

It should be pointed out to the owner that an animal suffering from laminitis should be restricted to a regular hard surface in order to prevent pressure on the sole due to uneven ground.

In addition, the owner should be made aware of the cost of the treatment and the animal's usefulness afterwards. However, the decision to proceed must be taken by the owner.

CORRECTIVE TRIMMING AND SHOEING

This generally involves trimming and shoeing to change the stance or gait of the horse, which usually involves re-distributing the weight over the foot and leg or redirecting the force acting on the foot as it takes off or lands on the ground.

Any corrections should be made gradually (in most cases) so as not to change the balance too radically in one shoeing (or trimming or both) in case the added strain to the ligaments and foot structure causes lameness.

It is important to be able to sight a foot and establish whether it is level and balanced from side to side, and from heel to toe. The balance of the foot influences both stance and gait.

A balanced stance exists when the weight placed on each leg is equally distributed over the foot of each leg. When viewed from the front or rear the foot will be in balance when the axis of the leg, pastern and foot are in a straight line which is perpendicular to the level ground surface of the hoof. When viewed from the side, the foot will be in balance when the axis of the pastern coincides with the axis of the foot which is parallel to the hoof wall at the toe.

A balanced foot affects foot flight pattern and vice versa (e.g., a faulty gait as a result of the former can cause the hoof to wear unevenly and grow crooked or out of balance.)

A balanced gait exists when the feet breakover at the centre of the toes, the feet and legs move in alignment with the direction of the body without lateral swing, the feet have sufficient elevation in their forward extension to clear the ground, there is no limb interference, and each foot lands with equal force on the heels of the hoof.

There is no such thing as a perfect horse, but the theory of perfect balance can be sought for in practice by corrective shoeing and trimming. Defects of conformation and gait are often hereditary, but also are often caused by environment e.g., nutrition, hoof wear, hoof growth rate (due to climate, physical condition of horse, frog pressure and function and moisture and irritants affecting the coronary band), trimming and shoeing. The latter three defects are usually much easier to correct than the first one.

The wear of the ground surface of the wall of the hoof or shoe should be observed. Where most wear occurs is the point at which the centre of breakover takes place. The side of the hoof or shoe which is worn the most indicates the heaviest weightbearing side (horn may be removed from the side opposite to wear to correct this) or alternatively the worn side may have to be increased in height (where the other side lacks horn) in order to correct and balance the weight evenly over the foot.

When checking for limb interference, it is not always possible to observe the point of contact, nor even actual interference at all during the faster gaits. In such cases, the inside of the hoof wall and the edge of the shoe should be coated with chalk or blue. This will rub off at the point of contact thus pinpointing exactly the location for correction (cutting away the hoof or shoe or fitting a protective pad or boot).

Care should be taken when presented with problems in young horses, as faults in the latter are often due to lack of maturity and co-ordination (forging). These will usually disappear as the horse becomes less awkward, and corrective shoeing or trimming would serve little useful purpose except to possibly stabilise the animal and confirm his gait.

Changes in conformation by trimming should be made mainly before the horse is one year old. Once the epiphyseal line closes and the bones and joints stop growing and begin maturing, the opportunities to effect a permanent change in the stance of a horse are very slim.

After a horse has reached 2 years of age only minor changes can be made by trimming or shoeing without risking creating additional, perhaps more severe problems. Once the correction strain has discontinued the foot usually returns to its original position and flight pattern. For this reason, the balance of the foot should not be changed after a horse is two years old. Instead a corrective shoe should be applied to a balanced foot if a change is necessary,

A horse goes best the way he is naturally made. Levelling and balancing the foot is all that is really necessary on a young horse and he will learn to live with any faults he may have.

The aim in so doing is to make the horse's foot hit the ground perfectly flat at speed in order to prevent lameness. Any correction needed therefore should be achieved by shoe design.