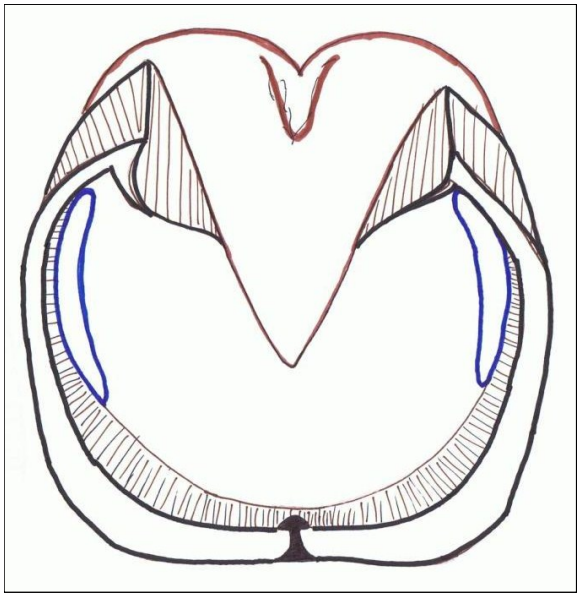
Hoof Cracks

Hoof cracks are not a "disease", but a condition brought on by human mis-management.



Cracks of the Hoof Wall

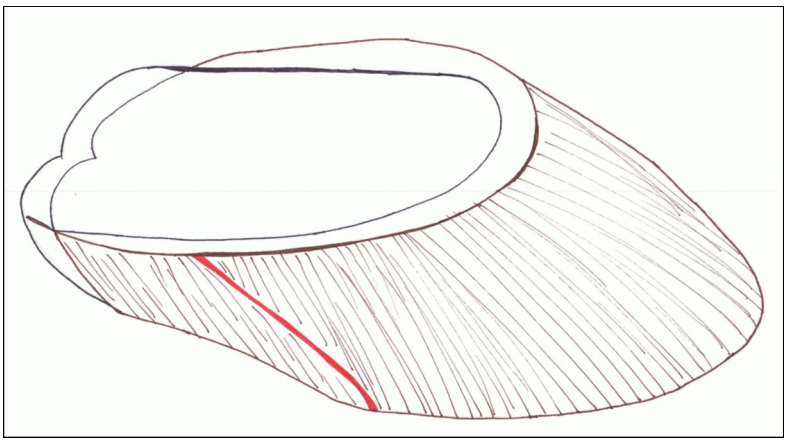
This is not about superficial cracks, but about cracks that go all the way to the corium.

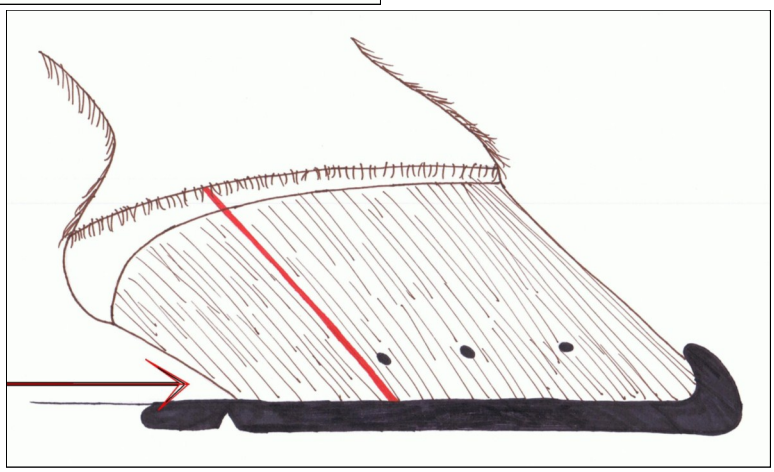
The main cause for cracks in the hoof wall is tension.

To function properly, a hoof must be able to expand on impact, when bearing weight. From the zero point at the tip of the toe to the greatest expansion in the area of the heel the hoof must flex evenly

The sole of the hoof is not intended for compression, but rather is designed to stretch, distributing the impact force in the direction of the ground. Unbearable stresses arise when these physical factors are ignored and the hoof function is compromised, as through the use of shoes or long heels.

A shod hoof cannot expand: the hoof walls cannot spread apart on impact, the sole is compressed instead of drawn flat and, behind the last nail, a bend appears in the hoof wall. As a result of these forced deformations, cracks occur in the hoof. And as long as the unnatural forces are present, the cracks cannot permanently heal. Immobilization delays healing. Shutting down the hoof mechanism (as through shoeing or stall rest) will also forestall a satisfactory recovery. A fully functioning hoof mechanism is the prerequisite for normal blood supply in this region, and therefore vital for healing. With deficient blood





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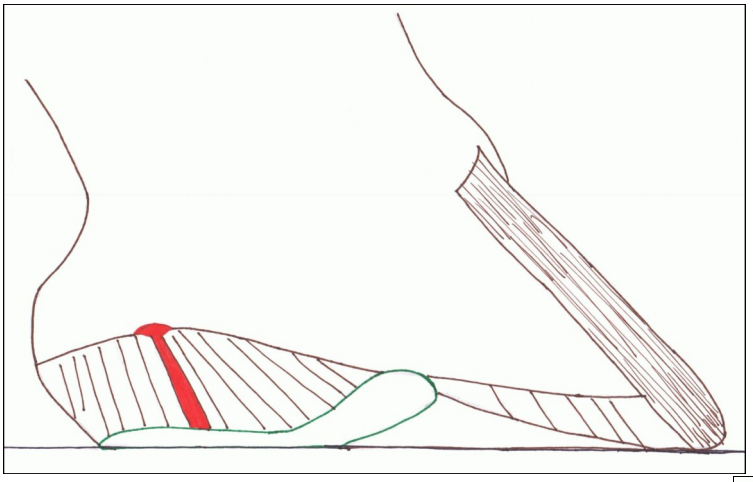
supply, only poor horn is formed. The crack may not grow out, may become larger, or recur.
As soon as a hoof with cracks is returned to a natural hoof shape, the cracks will grow out and not recur.

In any case, all disinfecting agents who have a strong desiccating action (such as idiophones) are to be avoided; their drying action makes the newly growing horn weak and brittle. What hooves do need is sufficient moisture through daily exposure to water. Below the progression of cracks through correct trimming. Hooves with physiologically correct hoof form will not exhibit cracks.

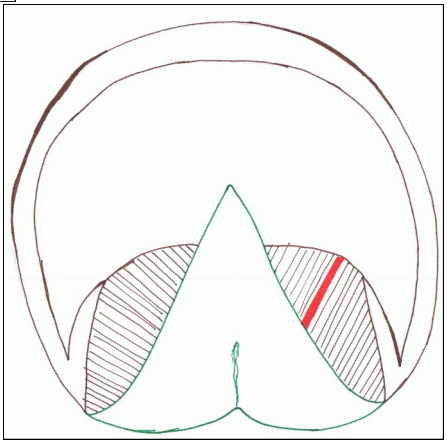
9 year old thoroughbred gelding with severe hoof cracks (pictures courtesy of Sharyl Fischer)
Hooves with physiologically correct hoof form will not exhibit cracks.

Breaks and Cracks of the Bars

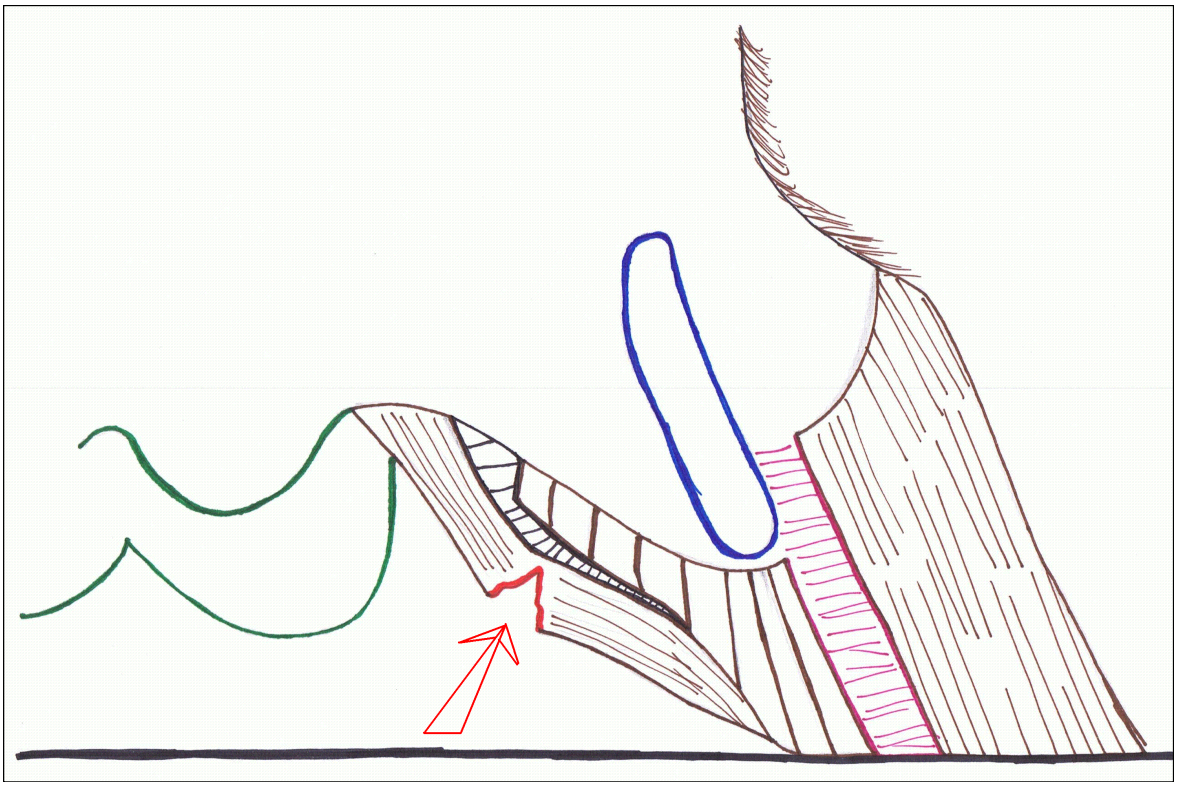
Horizontal bar cracks run parallel to the weight bearing wall. They happen when high bares get all of a sudden too much pressure from hard ground. The underlying sole corium undergoes pressure and when removing the bar, there is no more sole horn, but only bloody sole corium. On soft ground this is seldom a problem. Only when the animal is exercised all of a sudden on hard ground do the breaks occur on the flat lying bars and the horse be-come lame.



Vertical bar cracks or breaks happen with high heals pushing onto the bar laying flat on the sole. The horse will feel them more on soft ground as the same pushes into the solar vault and triggers pressure on the break onto the sole co-rium.



The movement of the break pushes onto the sensitive sole corium and causes lameness.



The term "vertical" is not entirely correct as the break follows the orientation of the horn tubules in the bar. In order to correct this problem, you have to remove the pressure entirely, trimming the bar well below the recommended parameters. They must be taken totally out of the range of pressure upon weight bearing.

Trimming for Cracks

A lot of cracks grow out "simply" by balancing the hoof correctly. But then there are the cases where the crack seems to stubbornly stay and never really closes.

They look like this (on the right) or

even like this. There is an opening barely visible:

But if you start to dig the opening out and follow the dirt line, you end up with a rather large opening:

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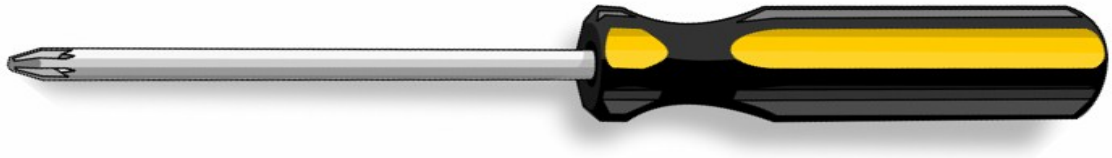
You can pour Tea Tree Oil into the opening and stuff it with cotton:

But with such a large opening, the cotton is likely to fall out pretty soon. It often works better if, instead of trimming the hoof wall to an opening, you use a Phillips head screwdriver:



Insert the screw driver at the crack at the waterline (the white part of the hoof wall) with a turning motion to follow the crack where you have the least resistance. The hole will look something like this:

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Pour tea tree oil into the opening so it is well saturated,

then follow with cotton,

and use screwdriver to insert cotton firmly.

As an end result the cotton and tee tree oil will stay for a good while in the crack, this one here lasted for 4 weeks. The dirt and bacteria will have no chance to re-inserted and multiply and the crack will grow out from the top.

Here you have a crack that does not resolve. It does initially not look like much,

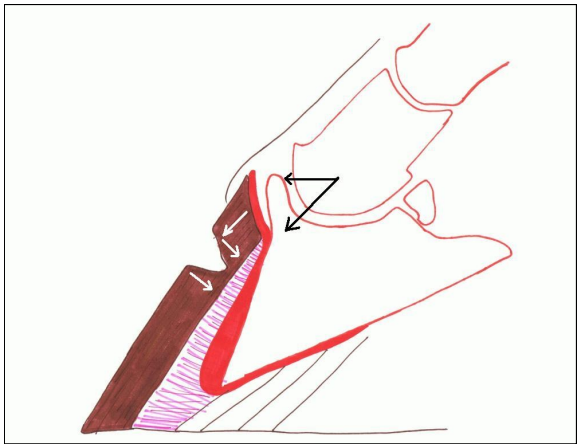
but as you follow farther up, it keeps on separating the wall from the laminar connection.

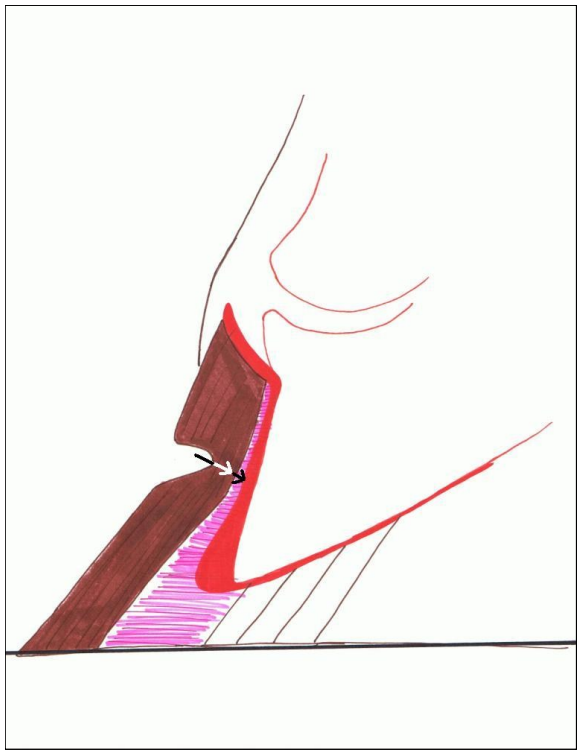
Eventually you have removed a whole lot of loose wall, which you have to do in order to keep bacteria from multiplying in an anaerobic (deprived of oxygen) environment.

Toe height has been preserved, the hoof capsule grew out without problems and with a tight connection. This was a Shetland pony (therefore a heel height below 3 cm).

These are stress fractures in the outer wall. As soon as the flares are controlled and the hoof is back in balance, they will grow out.

Below the conventional attempt to stop a crack from growing farther up the wall. Grooving or burning a ridge above the end of the crack. Please see next





Grooving

Farriers often perform "grooving" across the top of a crack to keep it from expanding. Depending how deep the groove is, that can become a real problem for the hoof. Remember, cracks will usually grow out when the hoof is correctly balanced.

So what can happen when a hoof gets grooved? Grooving in the frontal section of the hoof: the horn tubules are interrupted, the hoof wall looses its integrity. The upper part of the hoof wall pushes inward and pushes against the corium. This is especially detrimental in rotated coffin bones, as the pressure will push even more on the already rotated coffin bone.