Dr Robert Bowker Seminar Notes

The following key point notes are courtesy of
Yvonne Welz *from* www.TheHorsesHoof.com
and were taken at the Dr. Robert Bowker, VMD, PhD
(Michigan State University Equine Foot Laboratory)
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The hoof wall is not a rigid structure, but is fluid; the hoof wall inside is like "peanut butter."

All hoof wall does not grow from the coronet; a significant portion of inner hoof wall is formed from "grocery bags" of cells in the second epidermal laminae.

There is improved perfusion of blood flow through the foot on pea rock, sand or foam pads, and a dramatic decrease of perfusion on cement or wood blocks.

Movement is so important because it improves the perfusion of the foot.

With peripheral loading of the hoof wall (through shoeing or trimming), blood flow stops for a moment with every single heartbeat.

In a good-footed horse, the entire digital cushion area is all fibrocartilage; in a bad-footed horse, it is fatty connective tissue.

In a good-footed horse, there is fibrocartilage directly over the bars; in a bad-footed horse, there is simply a piece of thin, connective tissue.

Fibrocartilage is created through stimulation-movement. Once created, it will stay there permanently. Horses that don’t move enough, don't ever develop the fibrocartilage.

A solar load on the hoof encourages bone to be laid down; a peripheral load on the hoof encourages bone to be lost.

Peripheral loading of the hoof (shod or barefoot) is a negative thing!

A horse living outside will take 4,000-6,000 steps per 24 hr; a horse living in a stall will take 800 steps per 24 hr.

There is no direct connection that he can find between the hoof wall to the coffin bone that can create support-there is simply dermal tissue between the laminae & the coffin bone.

The function of the laminae are not to support the horse, but rather to produce tubules for the white line and sole.

4-point contact is artificial, because if these points were active, they would be worn down and recessed.

Increased laminae density is a sign of stress.

Solar plug-ground material that packs in the hoof-minimizes peripheral loading effects.

Scooping out sole and bars accentuates peripheral loading effects.

There is 1/3 the amount of pressure on the hoof wall when standing on rubber vs. standing on concrete. This is because the hoof is fluid, and there is more surface area on rubber.

Bars should be a weight-loading structure, with a healthy bar at a 45 degree angle to the ground.

Most of the sole comes right from the bars and is growing forward. If bars are removed, you remove sole regeneration--bars provide keratinized horn for the sole.

The coffin bone is not parallel to the sole; rather it is closer to the sole in the center.

The thickest part of the sole is under the coffin bone.

At least one-third of hoof wall comes from laminae (up to 50%)

Evidence suggests that P3 is partially supported by a thick sole in front of the bars.