

## **A new exposition of the horse's hoof / [By B.C].**

### **Contributors**

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## A NEW EXPOSITION OF THE HORSE'S HOOF.

IT would be difficult by words only, or mere description, to convey any adequate notion of the Horse's Hoof or its properties, or even by a simple inspection of the Hoof in the hand; by a model, however, of elastic materials, its proper divisions being first duly ascertained, we are enabled to do this, and to obtain clear and precise ideas of its construction and leading properties, and the uses of its several parts; it is only necessary, to accomplish this, to take to pieces the model a few times, and put it together again, when its structure will become clearly impressed on the mind, and teach us more than Newmarket or the Race-course could ever discover, and lead us also to consequences in the shoeing the horse of the very highest importance.

We first premise, that in the mathematical principle of the cylinder is laid the foundation of the form of the hoof, and accompanying this model is a small cylinder of wood obliquely sawn asunder, which serves to expose this general principle; if we separate the two pieces, and place one of them with its cut side downwards on the box-lid, it will be seen to give the slope in front which the hoof has, and the other general properties of its external figure. The painter or sculptor who understands this, will give its figure correctly; but not knowing it, will most probably mistake it for a cone, as has hitherto been the case, or give a mixed or confused representation of it.

Now there appears a strong reason, if we consider this cylindrical form, for its preference, since the cylinder possesses the property of embracing its contents vastly more securely and firmly than a cone, which enlarging downwards, would have been in danger of letting the foot slip through, on any strong exertion of the animal, as the cone is ever presenting a wider area in that direction.

To take the model to pieces, we first withdraw the pins from the loops, and we can then remove THE FURCH BAND, a newly discovered part, that serves strongly to connect the hoof with the skin which produces it, and to cover over and defend the joint they make in meeting; it also usefully supports the foot from a too much sinking downwards within the hoof, and keeps the frog steady in its situation, and with the bulbs restrains the hoof from too much lateral extension, assisting its return to its place also after this action.\*

The Bulbs of the furch, cover the sharp ends of the hoof or inflexions, and are a continuation of the above band, are next to be removed from the loops which sets THE FURCH at liberty, it can then be drawn out of its recess, leaving a very spacious triangular cavity. We have now to consider the uses of this remarkable organ, and may first observe that it is obviously given to fill up the great chasm of the doubly inflected hoof, and to permit the regular elastic movements of the sides of the hoof, yielding like India rubber, to every degree of expansion or contraction that is required, and as it is by far the softest material of the whole hoof, so is it retiring within the other parts, receiving the pressure of the soil in a third rate ratio, or degree; the harder parts, as the wall and the outer edges of the sole, receiving it first, the bars and rest of the sole next, and thirdly the furch or frog. It is most important also to know, that this organ possesses the perfect power of maintaining its natural form, and the limits of its figure, unaided by art, for through ignorance of this property, it often gets most woefully robbed of its horn, cut, weakened, and disfigured, the very quick or flesh being often barely left with a covering, and from being of very slow growth, it is a long time in repairing it again, making riding unpleasant and dangerous. When in its most beautiful form and proportions, this part seems in a singular manner to be formed of an equilateral triangle, whose sides are about equal to the diameter of the hoof; this may be seen by laying flat the pasteboard figure of it on a table. It has hitherto been most strangely mistaken for a wedge, to force the heels open, but is in fact the passive bow-string of the elastic bow of the hoof, and which comparison will at once explain all the phenomena attending it, and correct all the errors and abuses of its treatment.

\* See its uses more fully explained in my account of the Foot and Shoeing, p. 48, 2nd edit.



THE SOLE next may be removed by relaxing the wall, the tongues being disengaged from the loop holes; and an interesting experiment can then be made with it, by placing its concave side next the table or box-lid, and gently pressing upon it, when yielding, it will be observed to flatten and extend itself laterally, returning again to its arched figure on the removal of the pressure, thus familiarly exhibiting and explaining how the foot is relieved when under strong pressure, and most clearly evincing the expanding property natural to this organ; but which the common circular hoop or ring-shoe, nailed on both sides the foot, having no expansion of the kind, perfectly resists, and hence the error of its principle, and its mischievous effects.\*

THE WALL of the hoof is now exposed alone, and may be remarked as the fundamental part in its structure: the other two members, viz. the sole and furch being merely supplementary. We now make an interesting experiment with the wall, by reversing the situation of the Inflexions or Bars, by drawing them out backwards, which the material of the model admits of without hurting it; we now discover that they are simply a continuation of the wall, obliquely growing narrower and narrower, till they end in a point a little beyond the centre of the sole, though before this discovery they were rather considered as parts of the sole, than of the wall. We now can discern, that the wall and bars are one continued piece or portion of an obliquely cut cylinder, the truncation or cutting carried to a fine point, and thrown inwards, constitutes the outer shell of the hoof of the horse, and the very great simplicity and power of such an arrangement must call forth our exalted admiration of its supreme architect. These parts, together with the wall, make the figure of a Turkish bow, whose arms being bent in towards the middle of the bow, shortens the string, and the furch may be considered similar in effect to so many transverse cords stretching across, and attaching themselves to these inflected arms of the bow, and regularly diminishing as they approach towards the centre of the bow, where there is less demand also for its action.

Now, the axis of the cylinder of the hoof, as indeed the front of the hoof, which is parallel to it, is inclined from a perpendicular line or reclining at about thirty-three degrees, or in other words rises fifty-seven degrees from an horizontal line or the bearing surface on the ground; at least such is the case in the best, the handsomest, and strongest hoofs.

The Frog-stay is seen placed at the base of the frog, confirming it from rending, and whose rupture is the genuine cause of running Frushes, and interesting to be observed on account of this troublesome disorder.

And lastly, the curious appearance of the Podophylla, or horn leaves, is also represented on the inside of the wall, these are for the attachment of the hoof to the foot, by receiving between them similar leaves from the foot itself. These lines are all observed to be parallel, which proves the cylindrical form of the hoof; had it been a cone, they must have diverged to fill it in passing downwards. For further particulars of this beautiful and highly curious structure, we must refer the reader to the Podonomy, p. 48.

To recompose the model:—the bars or inflexions should be returned to their place in the centre of the hoof, and the point of the frog is then to be inserted in the loop at the extremity of the bars, the bulbs of the furchband are next made to embrace the sharp angle of the inflexions, and fixed upon the loops are pinned. The sole is then returned to its place, by holding upwards the lower opening of the hoof, and thrusting in the two ends of the sole, first downwards, then rising its front parts till we can introduce the tongues into the notches. Now the Furch-band being put round it, the hoof is complete; which is in fact not merely a rude covering of horn, as has been apprehended hitherto, but an elastic machine, beautifully adapting itself, by a yielding to any degree of expansion which the weight or exertions of the animal may require, or equally to his perfect repose. B. C. 1820.

\* For a demonstration of this, see my Experiments on the Living Foot under Shoeing, or the Podora, p. 6.

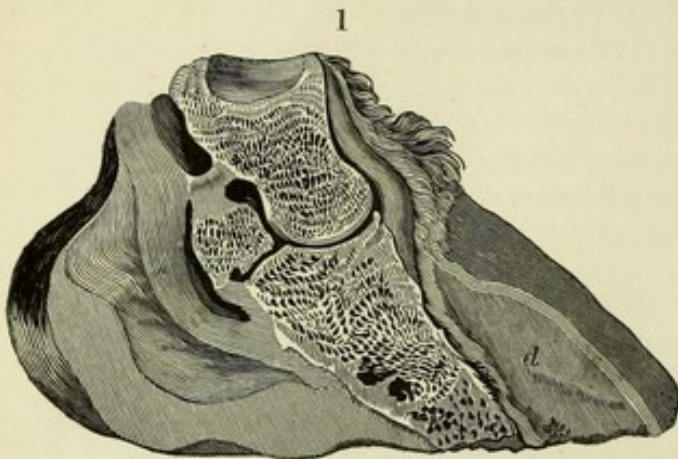
† See Treatise on Frush and its Cure, London, 1822. 2nd edit.



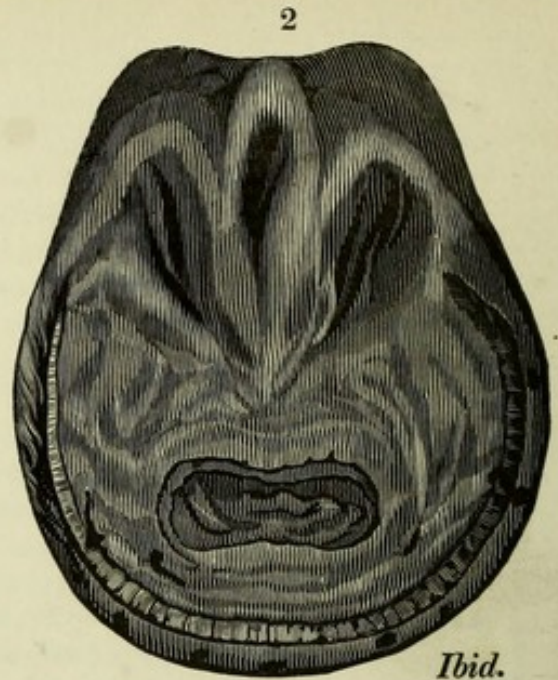
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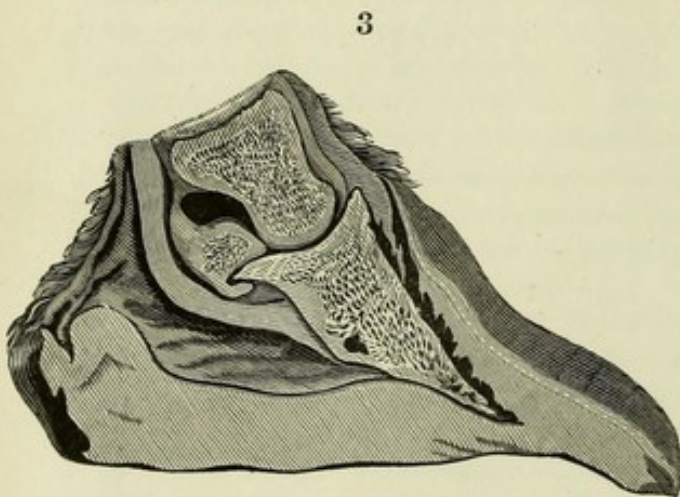




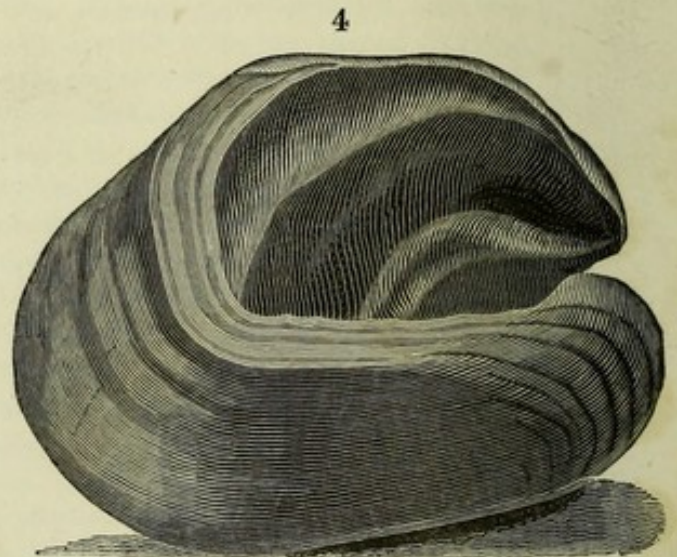
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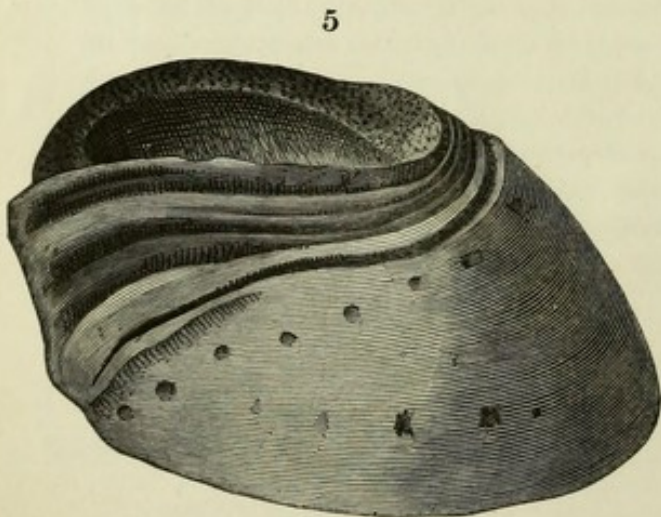
*Ibid.*



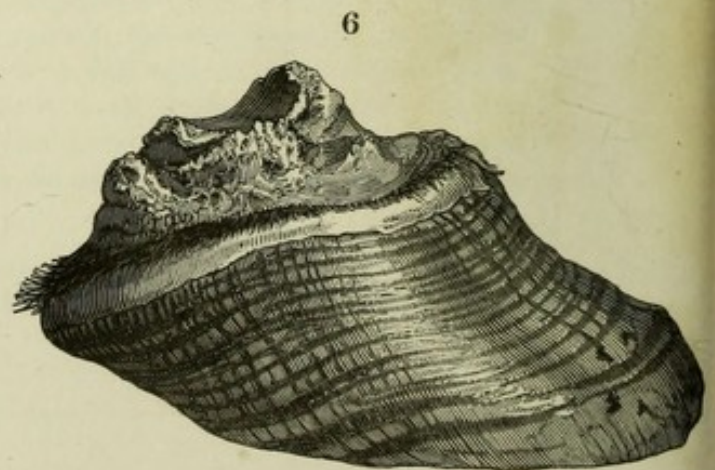
PEDIMOTA ; or, *Partial Founder.*



*Old Foundered Hoof flattened at top.*



*Old Founder, with absorbed Coffin bone.*



*Hoof running to Toe.*