

THE FARMER'S ADVOCATE AND HOME MAGAZINE.

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DOMINION.

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THE LONG AND SHORT OF IT.

It simmers down to this: If we milk a cow at all, she must, to be profitable, yield liberally. Whether dairy-bred, scrub or dual-purpose, the three and four-thousand-pound milch cow is a poor money-maker, and he who milks such a one must be content to work for small wages. When we advocate dual-purpose cows, we should always be understood as meaning cows that are capable of yielding six to twelve thousand pounds of milk a year—cows like the first-prize Dairy Shorthorn at the Royal, illustrated in our July 30th issue, cows of the class represented by the exceptional eleven-year-old Shorthorn, Darlington Cransford 5th, that outclassed all competing breeds at the Royal Show, at Newcastle, a few weeks ago, with a milk yield, made 83 days after calving, of 78.12 pounds in 24 hours, testing 4 per cent. butter-fat, and a butter yield of 3 pounds 1 ounce; cows such as the splendid type of Shorthorn grades that used to be the pride of our stables and pastures. Cows of this kind are very scarce now, thanks to the folly of the Shorthorn breeders, who neglected milking quality in a concentrated ambition for perfection of beef type.

In the absence, or rather in view of the extreme scarcity, of such cows at present in Canada, and the still greater rarity of Shorthorn bulls calculated to perpetuate in their heifer get what insufficient milking quality the dams possess, shrewd farmers have forsaken the old breed of their choice, and wisely gone in for the special-purpose dairy breeds. Of course, there may be a limited number so situated that they can afford to cut the milking out entirely, and allow the calves to suck the cows. Such a system, however, yields a meager return per acre of land. Those who follow it must be in a region of very cheap land rents, or at least contiguous to large areas of cheap pasture. The worst of it is that the system tends to cheapen, rather than to enhance, the value of land, and to depopulate, rather than set-

tle, the district in which it is generally pursued. It would be a setback for Canadian agriculture, and a hardship to consumers of beef, were such a system ever to become extensively adopted. The rank and file of farmers, will be wise to insist on keeping cows that milk abundantly. If one or the other had to be given up entirely, we could far better dispense with the beef than the dairy breeds. In fact, we have not much need in Eastern Canada for a special-purpose beef breed at all. We need special-purpose dairy breeds, and a dual-purpose breed—a real dual-purpose breed—not a beef breed called dual-purpose by courtesy.

The benefit with which the newly-inaugurated standing-field-crop competitions are fraught is indicated by the official statement that the annual value of the field crops in Province of Ontario is upwards of \$140,000,000. According to this computation, an increase in yield of one per cent. would mean an increase in output of \$1,400,000, or nearly twice the amount of the total Provincial appropriation for agriculture in the year 1908.

HORSES.

INTERNAL STRUCTURE OF THE HOOF OF HORSES.

[From Professor Wortley Axe's book, "The Horse in Health and Disease."]

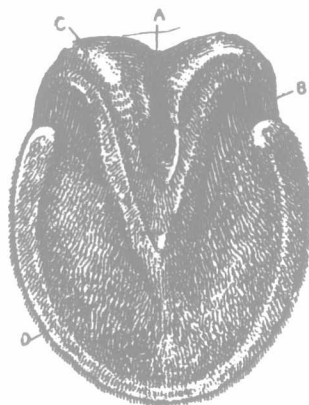
Although the hoof is a firm, strong, protecting covering to the sensitive foot within it, very serious injury to the horse results from defects in its structure, which are often overlooked. These will be appreciated more readily when it is known that within the hoof is a particularly delicate and complex arrangement. When a hoof is removed with care, a beautiful, sensitive structure is exposed,

with nerves and blood vessels. Just where the hair meets the horn—the part called by horsemen the coronet—is a very important structure, seen when the hoof is detached. This is a prominent ring or band, extending round the foot, and covered with very large papillæ. From it the wall grows, and injuries to it are followed by serious defects in the horn. Not only do such easily-recognized conditions as "sand crack" and "false quarter" follow injuries to the coronet, but all the defective qualities of horn, such as are found in dry, brittle hoofs, proceed from the coronet. So, also, do the rings and irregularities often noticed on the front of the hoof.

Growth of Hoof.—The wall grows downward from the coronet at the rate of about an inch in three months. It is constantly growing, and, when protected from wear by a shoe, soon causes a disproportionate hoof. If allowed to grow, it may even produce deformity. Remembering this, horse-owners will understand how necessary it is that no shoes should be worn more than about a month without the superfluous growth of horn being removed from the hoof. Farm horses, in idle seasons, are often grossly neglected by being forced to stand in shoes attached to hoofs so overgrown as to place the foot quite out of its proper relative position to the limb.

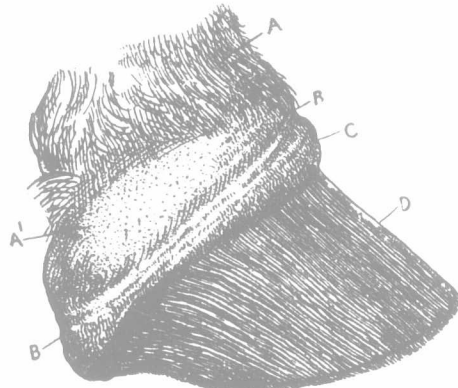
Young horses that have never been shod are often injured by being allowed to run in yards or small soft pastures where the hoof is not naturally worn down. Their feet become so overgrown and disproportionate that the limbs are injured and joints twisted permanently. Even foals should be attended to by the farrier when their hoofs become overgrown. No paring is necessary. All that is wanted is the removal of the excess of wall with a rasp. This necessary attention would frequently make all the difference between good feet and limbs, and bad ones.

Cartilage.—It is unnecessary to enter more into detail as to the anatomy of the foot. Within the sensitive layer just noticed are the bones, and attached to them the tendons which move the limb in progression. There are two structures,



The Sensitive Foot: Sole and Frog.

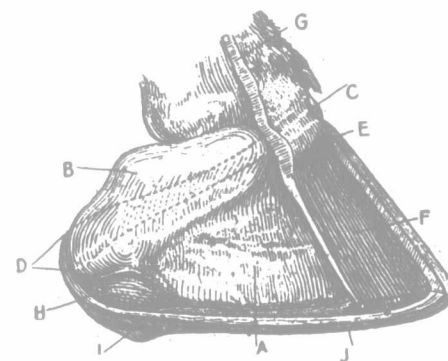
A, median cleft of fleshy frog; B, laminae of the bars; C, velvety tissue of the frog; D, velvety tissue of the sole.



The Sensitive Foot: Side View.

A, skin; A', skin devoid of hairs; B, peripole band; C, coronary cushion; D, sensitive laminae.

having a contour exactly matching the inner surface of the hoof. The inner surface of the wall is covered with rows of thin, horny plates running from above downwards, parallel to each other, all sloping forwards, like the fibers of the wall. The corresponding portion of the sensitive foot presents hundreds of similar parallel projecting leaves of soft, velvety, fibrous tissue. These are called the sensitive laminae, and in the living foot are dovetailed between the horny laminae of the wall, so as to afford a firm, secure attachment between the two. The sensitive frog and sole are firmly attached to the corresponding horny parts; but instead of plates, the connecting medium here is a mass of little papillæ, so closely arranged as to give a velvety appearance and feel to the exposed surface. This sensitive layer, known to farriers as "the quick," is boundedly supplied



Lateral Cartilages, etc., of the Foot.

A, os pedis; B, lateral cartilage; C, peripole; D, peripole band; E, coronary cushion; F, sensitive laminae, or fleshy leaves; G, section of skin; H, fleshy frog; I, horny frog; J, horny sole.



Under Surface of the Coffin Bone, showing its Position within the Hoof.

A, os pedis; B, sensitive and insensitive laminae; C, wall of hoof; D, horny frog.

however, which must be mentioned. The chief bone of the foot—the coffin bone—which gives the general form to the hoof, does not extend throughout its whole interior. It forms the basis of the front and sides of the hoof, but towards the heels is replaced on each side by plates of gristle or cartilage. This elastic material can be felt at the inner and outer sides of the coronet through the skin of the living horse. When diseased and converted into bone it forms the so-called side-bones, which sometimes cause lameness, and always destroy the natural elasticity of the foot. These cartilages, replacing bone at the back parts of the foot, give resiliency to the hoof, and so prevent concussion.

The Frog.—If we examine the under surface of the foot, we find another provision against jar, for, whilst the sole rests upon a bony basis, the