

the fore-feet; and they may be perfectly free from disease, and one foot smaller than the other is often congenital, and this neither predisposes to disease nor is an indication of any morbid condition, unless the animal is lame; or the inequality may be due to the shoe, or to a shoe having been lost.

Large hoofs with prominent frogs and rather flat soles, are generally found in moist countries, narrow small feet, with hard, dry horn, and rather diminutive frogs and concave soles (Fig. 2), are usually observed in dry climates with rocky or sandy soils.

Black hoofs are composed of tougher horn than white ones: and the hoof which has not had the front and sides of the wall rasped by the shoer, or its texture damaged by oil or hoof ointments, is generally smooth and shining. The fibres of the wall become softer as they are deeper, until at last when near the inner surface they are quite soft and pith-like. Hence the great importance of preventing the shoer from touching the front of the wall with his rasp. All he has to do with regard to the hoof, when shoeing it, is to reduce it properly, then fit a shoe to the size of the circumference

## The Farm.

### On the Preparation of Land for Hoed-crops.

A thoroughly practical farmer in England being asked the other day what was the best manure for the root-crop, replied: good tillage.

What he meant to say was, that successful root-growing depends, not so much upon the use of such or such a fertiliser, as upon a finely pulverised, moist seed-bed produced on land in good condition from previous good farming. Not that the man in question had any doubts as to the beneficial effects of superphosphate, &c., but his long experience had taught him that it was but too often that the bad state of the land on which they were cast, in great measure invalidated their powers of action; whereas, when the soil had been brought into proper trim by the timely use of the plough, the harrow, and the grubber, the manure was received into a kindly repository, its elements were gradually freed from their, so to speak, inert condition, their material fostered, and when the moisture and the organic acids had rendered them perfectly soluble, they were appropriated by the tiny radicles of the infant plant

ploughs his land, in the fall, laying it well up in moderately wide ridges, cross-ploughs it, after harrowing, in the spring; drills it up into 24 inch drills; spreads the manure, splits the drills and rolls them down; sows 3½ lbs of swedes to the acre, keeps the horse-hoe going from the moment the first sign of the rows is visible, singles the plants at ten inches, hand-hoes them deeply, and the affair is done.

Well, one of our readers may probably exclaim this is easy enough on loose, kindly soil like the Sorel sand, but my farm is on a heavy clay, how can I manage to reduce the harsh, cloddy surface of such a soil in time for sowing a root crop? It is not impossible or even difficult, we reply, if you will go the right way to work, if you will be patient, and not try to muddle the land about at a season when it had far better be at rest. The seasons are short, there is no denying that, but the same rules for the management of heavy land obtain in this country and under this climate, as obtain in England and in Scotland, as thus:

It will pay you better to lie in bed, or as we used to say at home, to play at skittles or nine-pins, than to touch heavy land when it is in the least "clung." How often have you seen

moisture necessary to start the young germs into life will have evaporated before the advent of seed-time: on heavy land, turning up the raw bottom of the fall-furrow will, in most cases, produce clods that will be found hard to reduce. Therefore, instead of cross-ploughing which would bury the fine surface brought about by the frost, we will do the work with the grubber or cultivator, and pass this invaluable implement over the land twice, along and across. On heavy land, some clods, more or less in number, will be brought to the surface and these must be pulverised: by the harrow or the roller? Well, our idea is that, after the land has been allowed to remain drying for a few days, the passage of the roller will more surely break down the clods than if the harrow preceded the former implement. Most farmers who observe will have seen that when the harrows have brought clods away from their bed of earth, so that they lie on the very top of the soil, the subsequent passage of the roller over them only kneads them down into the ground again. So we recommend rolling after the grubber and harrowing after the rolling. It will frequently be necessary to repeat all three operations, grubbing, rolling, harrowing, for, as we said at starting, "good tillage is the best manure for hoed-crops."

The land is now, or should be, fit to receive the seed, whether of maize, swedes, mangels or carrots. As all of you who grow hoed-crops are accustomed to sow them on drills, we will take that plan; and, first, what distance apart shall we choose for our drills? In Scotland, where the system was first invented the distance between the drills was necessarily regulated by the construction of the common plough, as, originally, there was no double-mouldboard plough such as those perfect implements we are fortunate enough to possess to-day. Every drill, therefore, had to be made by a *bout* of the common plough, and that implement, as usually constructed, made drills of 28 inches apart more perfectly than those at any other interval. But some *thinker* among the plough-makers hit upon the idea that if the lower side of the mould-boards of the "earthing-up plough," as it was then called, were cut gradually away towards the extremities, it would be able to go deep enough to form a properly shaped drill, or rather to form at each passage two halves of two drills. Hence, by altering the widths of the mouldboards, we are now able to make drills of any desired width apart from 20 inches to 40 inches. A marking bar jointed to the beam, was subsequently added to this implement, which was the only thing wanted to make it complete. In spite of this improved tool, the distance between the drills still remains, in the majority of cases, 27 or 28 inches, whether requisite or not.

What should guide us in the choice of the distance between the drills? To our mind, two things: 1. the space required for the due expansion of the roots and leaves of the crop to be grown; 2. the space required for the passage of the horse-hoe between the rows of roots. It would be absurd to plant champion potatoes, the haulm of which frequently attains a length of from 40 to 50 inches, at the same distance apart as early-roses, the haulm of which is not above half that length.

The difference between 27 inch and 25 inch and 24 inch drills may seem trifling, but when we consider the difference this makes on an acre of roots, its importance becomes apparent.

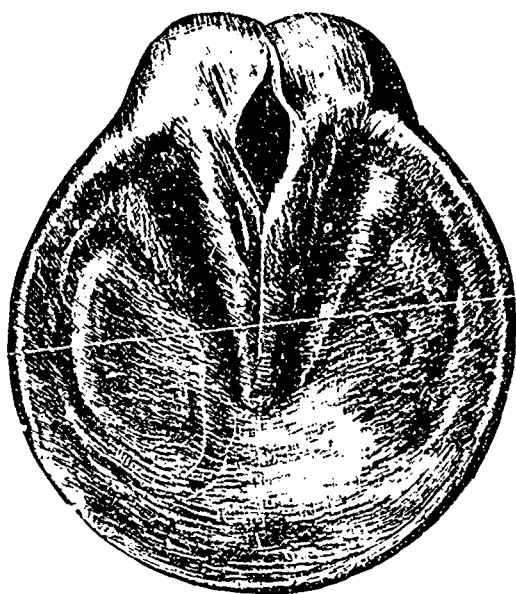


FIG. 1.

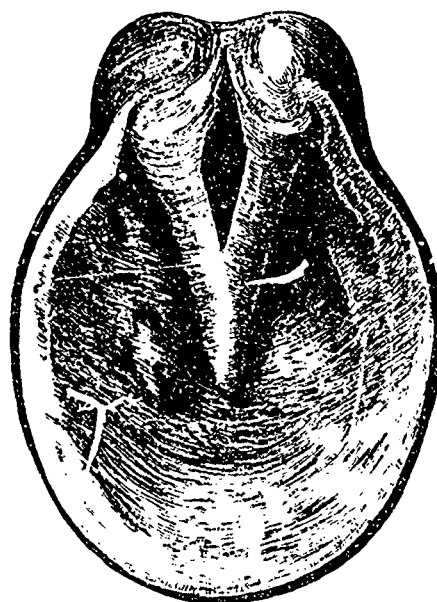


FIG. 2.

of the wall, attach this by as few nails as may be consistent with security, and nothing then remains but to clench or turn down the ends of the nails at the face of the wall. The latter should pass in a straight line from the coronet to the shoe, and not be chopped off in an unsightly, stumpy fashion between the clenches, as is so often the case, because the shoer will make the hoof fit a shoe which is too small.

The art of shoeing is simple enough when properly practised; it is the cruel manner in which the hoofs are only too often mutilated that causes it to be a difficult art, requiring skill to deal with that which ignorance has despoiled. Shoeing need not, should not be a necessary evil; but if properly conducted it ought to confer benefit, and enable horses to live longer and do much more service than if they were not shod. In fact, unshod horses in moist climates and on artificial roads would be of little value to man. The horse's utility and strength are multiplied a hundredfold by the iron rims attached to his feet by the skilful artisan, while his foothold may be rendered much more secure by this appliance.

without more trouble or delay than was absolutely necessary.

Good root-crops are hardly ever seen but in association with good cultivation. Science, properly so called, acknowledges this, but the false science, of which there is so much in the air of the present day, seems to take it for granted that the crop depends entirely upon the use of this or that fertiliser. Were this accurately true, would our friend and pupil, Monsieur Guévremont, succeed in growing such superb crops of swedes as he secures every year on the poor Sorel sand? Not at all; all the manure he employs is derived from his own cattle, not by any means too well fed, and from the stables and cowhouses of the town of Sorel, in which, if the animals are in no worse condition in spring than they were when they went into winter-quarters, the owners are well satisfied; and of this he can only secure enough to be able to afford a very moderate dressing to each acre of the 20 he usually sows with roots.

What then does M. Guévremont do to get such yields off his lands? He does just what every good farmer, in every district of Britain, does: he

when the season was getting on, land of this kind cut up into *slivers*, that, when attacked by the sun, hardened into almost iron-like bands that defied all the powers of the harrow and the roller to disintegrate them!

"I don't hold with fall-ploughing," another will say: neither do we, unless it is done where the land is in fit condition, and unless the furrows are laid up at the proper angle of 45°. A flat furrow, beaten flatter still by the spring rains, is not in proper form to be attacked by the harrows, neither, when the water runs after the ploughman in the path just made by the plough, is that the proper condition in which to work heavy, or, in fact, any land.

And now we will suppose that the land intended for the hoed-crop—be it corn or roots—has been cleaned in the fall and laid up in the early winter in good shape. Spring arrives; the wind and sun have thoroughly dried the surface, and the dust has begun to fly about: what shall our first operation be? Two things are to be guarded against, one on light the other on heavy land. Too much cultivation on the former is apt to render it *deaf*, that is, too mealy, in which case, the