

successful) is to thrust out lateral thready roots in all directions within from 6 to 12 inches of the surface, and often extending to 6 feet and more. These ramifications are full of buds, and the second year produce a plentiful supply of herbage and flowers, as just recorded. But it is time that I explain its denizenship, and its connection with the Walcheren Expedition. When our troops returned to England many disembarked at Ramsgate; the poor fellows were suffering under malarial fever, and their beds were ripped up and the straw, &c., was placed in an old chalk pit belonging to a Mr. Thompson. Time passed on, and this heap of refuse was mixed with seaweed and manure, and finally employed to fertilize the fields. Wherever this was done a plentiful crop of the new weed was produced, and which to distinguish it was called Thompson's weed. I have traced its introduction, and its spread over many parts of the Isle of Thanet—it now remains to show its subsequent progress. It seems to take to the banks of ditches, the edges of footpaths, &c., in preference to the open fields, and may be traced through Canterbury, Chatham, Sittingbourne, Gravesend, Deptford, Peckham, &c., as I have myself done; but how far it has reached towards the northern and midland counties I have had no opportunity of ascertaining. It may be well, however, for me to state, that I have measured one root in the chalk that was 9 feet long, and even then did not succeed in reaching the extremity. W. M.

To which the Editor replies: "Our correspondent does not name the plant to which he alludes, but we suppose he refers to *Lepidium Draba*. This has some good qualities, for about New Cross it helps to keep up the slippery clay banks of the railway cuttings, and to a less extent, does a similar service in places on the equally slippery gault of Folkestone."

Some Suggestions Respecting the Destruction of the Turnip "Fly."

As a preventive, we have always placed great dependence on the use of hot lime, our practice having been to apply it a short time previous to sowing, and although we have suffered severely from "the fly" when we omitted, from any particular reason, to apply lime, we were always safe when we did use it. In other cases we have known hot lime applied a few days after the turnip seed had been sown, and with uniform success. The use of manures with stimulate a rapid growth in the young plants is of the greatest possible utility, because "the fly" ceases to injure them as soon as they get into the rough leaf. Keeping the land clear of charlock, &c., is most useful in preventing attacks of "the fly," as the insect feeds upon and is nourished by such plants, even at other periods of the rotation than the turnip break. "As a remedial measure," says Stephens, "a long-haired hearth brush worked along the drills by field workers would cause the insects to fall from the plants better than any board or net; and if quick-lime were strowed immediately upon the plants, as recommended from the experience of 102 practical farmers of the Doncaster Agricultural Association, their destruction would likely be more certain." A "Turnip-fly Catcher" has been patented by a Mr. Morris. It consists of a light horizontal frame-work, carried by the wheels, and guided and propelled by a handle, just like a child's perambulator. A piece of light canvass is smeared with an adhesive compound, to which the insects adhere when brushed off the plants by the canvas curtain.—*The Farmer* (Scottish.)

The Roots of Plants.

How deep do the roots of wheat and clover go down under favourable circumstances? I have heard of a gentleman, who went to Dublin some fifteen or eighteen years since, and got some of the young men in the Botanic Gardens of Glasnevin to accompany him to the neighbourhood of Swords, where they followed they followed the roots of many plants of wheat and clover more than 15 feet from the surface, that in no instance did they get the end of roots, they all broke off; that in Lord Claremont's garden they selected a plant of Indian corn and followed it down 17 feet, when it broke, to the astonishment of the gardener, who transplanted it from the green-house only four months before. I also heard that drawings of these plants were made and presented to the Dublin Society, but I have failed to find them there or anyone who seemed to care whether the went 1 foot or 20 feet down.

I once took a piece of subsoil, 3 feet from surface, of strong yellow clay, to a distinguished agriculturist and chemist in Dorsetshire, and said, "There is something that will frighten you." "Oh, no," said he,

"you may do anything with that land if you don't object to the necessary expense. What do you think those are?" "They appear to me," said I, "like very fine hairs, but I suppose they are roots." "Yes," said he, "and they would not have gone there if there was nothing to eat. They would not go into my chalk subsoil." This is a subject, I think, worth more investigation.—*A Would-be Improver, Co. Louth, Ireland, May 11, 1866.*

BARLEY.—In an elaborate article on the Barley Crop, the *London Field* says:—The success of the crop depends very much on a good start obtained by planting at the right season, sowing rather thickly, having our surface well tilled and full of plant food, whilst the subsoil is dry and healthy. The object should be to grow just as great a bulk as will stand up properly. If barley is sown early, especially early, the loss is very great, and a first-rate sample rendered impossible. Great care is necessary in harvesting. The crop must be thoroughly ripe, in order that the corn may germinate evenly; but there is no reason why it should be left until so rotten ripe that the heads separate en masse from the straw, and a considerable loss ensues. There is a happy medium here, as in everything else. We must wait till the red streaks which are seen running longitudinally on the grain of the ripening barley, disappear, and the head begins to hang down, the straw being of a uniform golden hue; then we may cut, and, if sufficiently long, tie up into small sheaves, in the event of bad weather. The sample is protected, and less liable to stain than if lying all about; besides, the practice is neater, and the cost of carting greatly reduced. Barley stacked loose gets into good condition more rapidly than when tied up. The sweating is more uniform, and possibly the sample a shade mellowed, provided the weather has favorable. Still the evidence is all in favor of tying; a practice that is steadily gaining ground, especially where the reaping machine is employed. When barley is grown for meal, and not for malting, it may be cut with advantage at an earlier period. The straw will be of better quality, and the skin of the grain thinner.

Veterinary Department.

Roaring and Whistling.

DERANGEMENT of the mechanism of the respiratory organs naturally leads to the production of new and generally very unmusical sounds during the performance of the respiratory function; and although as an abstract point it might be considered a thing of no great moment that the pitch of the note emitted from the breathing pipes should be either higher or lower than natural, it nevertheless makes a very considerable difference, according to the every-day notions of practical men, whether a horse sweeps silently along or sounds an alarm every time he is made to canter. So far as the mere power of endurance is concerned, whistling or roaring may be of no consequence; but as a matter of taste, other things being equal, a horseman does not care to announce his arrival by the assistance of his steed, and hence it happens that no defect in horses is so relentlessly condemned as roaring; and the man who calmly insists upon riding one of these unfortunate animals so affected to hounds through a season makes hunting hideous, and is universally voted an enemy to his species.

Legendary historians seem to find some consolation in recording the fact that "Eclipse" was a roarer; whether with a view to enlist popular sympathy in favour of roaring in general, or to show that the defect did not absolutely ruin the reputation of that high-mettled racer, is not very apparent. But we do not want instances to prove the fact that certain unpleasant noises emanating from the breathing organs are not necessarily evidences of respiratory capacity; on the contrary, it is generally allowed that such sounds are perfectly compatible with considerable breathing power. No qualifications, however, can compensate for the annoyance to which the defect gives rise; and it is impossible to avoid looking upon the affected animal as one whose breathing organs are hopelessly diseased, and to whom sustained exertion is impossible.

To understand the difference in the degrees of roaring it is necessary to consider what causes may give rise to it—what alterations in the tubes or pipes may at different times produce the one general result, an unnatural noise in breathing. The mechanism concerned in the process of respiration may, for our purpose, be concisely described as consisting of a central organ (lungs), filled with tubes which communicate with the external air by means of a single pipe (windpipe), extending from the chest to the nostrils. In any portion of this mechanism an obstruction

may occur, and cause an alteration in the pitch of the sounds produced during the passage of air to and from the central organ. Thus the nostrils, larynx, windpipe, or bronchial tubes may either of them be the seat of a deposit or derangement of some kind which shall cause the natural sound to be altered. The membrane lining the nostrils may become thickened, and thus the openings be diminished or the surface of the tube be rendered irregular. The form of the larynx may be altered in consequence of disease of the muscles on one side. The windpipe may be distorted as the result of the excessive use of the bearing rein; and the calibre of the bronchial tubes may be lessened in consequence of diseased deposits. In each of these cases an alteration in the character of the sounds emitted will be the result.

Depending upon the position and nature of the disturbing cause will be the character of the tones produced; and an animal is designated a roarer, whistler, or wheezer, according to the precise quality of the noise he makes.

It is in all cases very difficult to determine what special morbid condition causes the production of any particular sound; but generally it may be concluded that "whistling" is the result of a diminution of the space through which the atmosphere passes in the nostrils or larynx. This appears the more probable, as the noise is usually only evident during inspiration, when the apertures of the tubes would naturally be somewhat less expanded than during expiration. Roaring is more likely to be caused by a relaxed condition of the lining membrane of the windpipe or bronchial tubes, and is therefore the more serious defect of the two. It is true that under a tonic system of treatment great improvement will often be effected, and now and then it may happen that as the condition is gradually regained, the abnormal sounds will be considerably modified, or even cease altogether; such a result, however, is rare, and does not affect the general rule—viz., that roaring and whistling are incurable diseases.

The records of veterinary science contain many instances of remarkable cures, and among them cases of roaring are mentioned as having yielded to some special system of treatment. Firing, as a remedy, is lauded by some experimenters, who profess to have perceived great benefit to result from the operation; but we confess that the puzzle to us would be to select the proper situation for its performance. The larynx might be suggested as a probable seat of disease, and powerful counter-irritation applied to the skin of the throat might be followed by an amelioration of the severe symptoms; but, excepting in those few cases where there is good reason to conclude, from the previous history of the case, that this or some other accessible part is the seat of disease, local treatment is at best but empirical, and although an occasional success may be recorded, we fear it would stand amongst a crowd of failures if these were recorded also.

Judicious management in the way of feeding, grooming, and exercise, may do much towards preserving a "roarer" in the best condition for a long time. Medicines should be exhibited sparingly, and should generally be tonic in their action. The compounds of iodine have in many cases appeared to produce good results, though, to secure the full benefit of their action, they must be perseveringly used; as they may be administered in the food, however, there is no difficulty in continuing their employment for a considerable period. Iodide of potassium in doses of half a drachm, with nitrate of potash one drachm, and sulphur two drachms, may be combined, and given in the food, either mash or corn, and repeated three times a week, until some improvement takes place, when the medicine should be discontinued for a time, and again employed in the same manner so long as any benefit appears to attend its use.

If there is reason to believe that the roaring is the result of irritation or thickening of the membrane of the larynx, windpipe, or bronchial tube, counter-irritation by the ointment of the biniodide of mercury may be had recourse to over the chest, front of the neck, or under the throat, according to circumstances.

Detection of roaring or whistling is not generally a matter of difficulty. Observers may differ as to the kind of noise which an animal may utter, but seldom can any doubt exist as to the fact of a noise being made. It is not, therefore, easy to understand how "doctors" can differ about so commonplace a matter we come to learn that the patients differ also, and that the roarer of to-day may be the perfectly sound horse of to-morrow.

Under the head of the methods of detection we hope to throw some light upon the discrepancies so commonly remarked in the evidence of professional men upon this constantly recurring question, by narrating some few instances that have come under our own observation, in which, in the absence of previous knowledge of the history of the animal, it would have been impossible to form a correct opinion.—*The Field*