

terminate in a number of small pores of extraordinary delicacy and susceptibility which act as little sponges to imbibe moisture for the use of the plant. It is well known that these small root hairs furnish the principal means of imbibing food, and that if they should all be cut off the plant must provide itself with others, or it will probably perish for want of sufficient nourishment. These root hairs are exactly of the nature of a sponge.

They expand at the approach of moisture, and when surcharged with it they contract, and thus force it into the fibrous roots, the cellular integument of which dilates to receive it. Hence, the moisture is forced by capillary attraction, it is supposed, into the main roots, and thence into the stem, branches and leaves of the plant, circulating like the blood in the human body. After it has been elaborated and changed into sap in the leaves, as the blood is changed in its nature in the lungs, it dispenses nourishment to every part as it goes along. The roots have no pores with the exception of those forming the root hairs, and only the small, fibrous roots appear to possess the power of alternate dilation and contraction, which power evidently depends on their cellular tissue being in an entire and healthy state. Thus it is quite evident that if the root spongioles be injured they can no longer act as mouth and throat to convey food to the plant.

Whenever a plant is taken up for transplanting, therefore, the operation should be performed carefully and any parts injured should be removed before it is replaced in the ground. Deciduous plants, and particularly trees and shrubs, are generally transplanted when they are without their leaves, because at that season they are in no danger of suffering from the effects of evaporation. They are often successfully transplanted when in leaf, but have to be more or less severely cut back. Shading is necessary after transplanting any plant that retains its leaves, as the evaporation from the leaves, if exposed to the full action of the wind and sun, would be greater than the plant could stand with its diminished root vigor.

If it were possible to transplant without injuring the fibres of the roots, and if the plant were immediately supplied with plenty of water, shading would be unnecessary. Indeed, when plants are turned out of a pot into the open garden without breaking the ball of earth around their roots, shade is not required. The reason for watering a transplanted plant is as obvious as shading. It is simply to supply the root hairs with an increased quantity of moisture, so that the amount imbibed by each may, in some degree, take the place of their diminished number.

All plants will not bear transplanting. Those that have tap roots, such as the carrots and certain kinds of poppies, are peculiarly unfitted for it. When plants having tap roots are transplanted, it should be on very light soil, and what is called a puddle should be made to receive them. To do this, a hole should be made deeper than the root of the plant, and into this hole water should be poured, earth thrown in and stirred so as to half fill it with mud. The tap-rooted plant should then be plunged into the mud, shaking it a little so as to let the mud penetrate among its fibrous roots. The pit should then be filled in with light soil, left loose to form a mulch. The plant must be shaded longer than is required by other plants, and when water is given, it should be poured down nearer the main root than in other cases, because the lateral fibrous roots never spread far from it. Plants with spreading roots, when transplanted, should have the pit intended to receive them made shallow, but very wide in its diameter, so that the roots may be spread out in it to their fullest extent. Those that appear at all bruised or injured should be cut off with a sharp knife.

It is a general rule in transplanting never to bury the collar of plants as they are liable to be smothered, though this rule has some exceptions in the case of annuals. Some of these, such as balsams, send out roots from the stem above the collar, and these plants are always much improved by transplanting. Others, the fibrous roots of which are long and descending, such as hyacinths, do not bear transplanting well. When it is absolutely necessary to move them, it should be done with a small instrument called a transplanter, which may be

purchased from most seedsmen or nurserymen. By use of the transplanter it is possible to take up a sufficient quantity of earth with the plant to remove it without disturbing the roots.

Fitting Horses for Work

Exercise rather than feed for toning up the muscles, hand rubbing after day's work.

Just now the important thing is to give the horse good treatment as he bows to the spring work. Unless the horses have been exercised well during the winter they are out of sorts, not only by being soft in their muscles, but their circulation and breathing and excretory systems are away below par.

Hence the necessity of beginning with easy work and of not keeping at it till the horses are exhausted. The horses have a way of starting off as if they were full of energy. The very opposite is the fact. The fine show of spirits is really a sign of poor condition manifesting itself in irritability that frequently is mistaken for strength. Indeed, it will mean time gained in the end for the farmer to do odd jobs with the horses for a day or two that ensure frequent rests before starting anything that even approaches in severity hard or regular work. Valuable lives may be spared by observing this precaution.

Every spring scores of horses suddenly stop work and die, not because they are too fat or because they are not strong enough, but because their circulatory system will not carry off the excess of matter suddenly thrown upon it by even a little light work. Many farmers have a way of feeding their horses a little more heavily than usual for a month or so before starting spring work. Generally speaking, this practice is a very poor one. If a little exercise were given every day rather than an increase of oats the horses would come to the plow and harrow in better condition. The increase of feed should be made very gradually and not till it has been preceded for a week or so by increase in exercise.

Then the day's work should be followed by a thorough rubbing. The horse that gets his muscles well rubbed will come to his work next day ready and keen. Moreover, the rubbing has a way of lessening the labor thrown upon the circulation. How the horses come out of the spring work depends to a very great extent upon their fitness for work when the season opens and the regular care they get from day to day. A little salt, half a teaspoonful is sufficient, should be given every night. If it is thrown into the bottom of the feed box before the oats the horses will make no objection. A liberal bran mash should be fed on Saturday night instead of the regular grain ration. The extra heavy feed of Monday morning is a mistake.

There is no reason why a team should not finish the spring work in better fettle than when it entered the work. The secret is care and a little judgment that prevents over-doing. In this connection too much emphasis cannot be laid upon having the collars properly fitted. After the horses have been conditioned by a little regular exercise the collars should be fitted with the utmost care. If there is any sign of sore shoulders the time to save trouble is the moment tenderness appears. Usually the sore shoulder is the fault of the owner, who does not insist that collars be properly fitted.

Explicit Directions

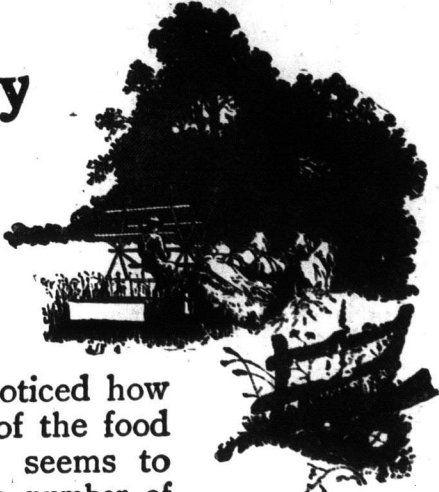
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"I guess," he said, complacently, "there won't be any more folks asking if the Browns, the Biddles or the Hansons live in this house. I've fixed 'em."

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"Hung out a sign," "And what did you print on it?" "Just five words," replied Harold, proudly. "Nobody lives here but us."

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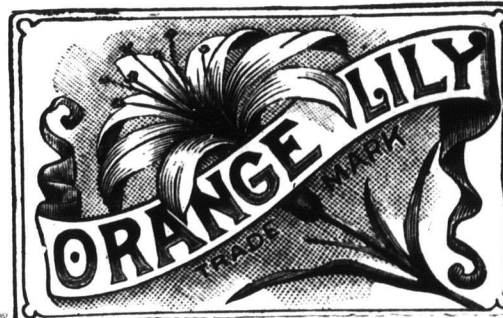
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