

THE USE OF THE FEET IN SOWING AND PLANTING.
1884 BY PETER HENDERSON.

(Read before the annual meeting of the National Association of Nurserymen, Florists, and Seedsmen, held at Cleveland, Ohio, in June, 1880.)

IT may be useless to throw out any suggestions in relation to horticultural operations to such a body of practical men as is now before me. Yet I candidly admit that, although I have been extensively engaged in gardening operations for over a quarter of a century, I did not fully realize, until a few years ago, the full importance of how indispensable it is to use the feet in the operations of sowing and planting.

For some years past I have, in writing on gardening matters, insisted upon the great importance of "firming" the soil over the seeds after sowing, especially when the soil is dry, or likely to become so. I know of no operation of more importance in either the farm or the garden, and I trust that what I am about to say will be read and remembered by every one not yet aware of the vast importance of the practice. I say vast importance," for the loss to the agricultural and horticultural community, from the habit of loosely sowing seeds or planting plants in hot and dry soils, is of a magnitude which few will believe until they have witnessed it ; and it is a loss all the more to be regretted, when we know that by "firming" the soil around the seed or plant, there is, in most cases, a certain preventive.

Particularly in the sowing of seeds, I consider the matter of such vast importance, that it cannot be too often or too strongly told; for the loss to the agricultural and horticultural community, by the neglect of the simple operation of firming the soil around the seed, must amount to many millions annually. For the mischief done is not confined only to the less important garden operations, but even Corn, Cotton, Wheat, Turnips, Grasses, and other important crops of the farm often

fail, as thousands of farmers know to their sorrow, in hot and dry soils, by being sown without being firmed sufficiently to prevent the dry air shriveling or drying the seeds. Of course, the use of the feet is impracticable in firming seeds on the farm, but a heavy roller, applied after sowing, is an absolute necessity under certain conditions of the soil, to insure perfect germination, which is indispensable to a perfect crop.

From the middle of April to nearly the end of May of this year, in many sections of the country, there was little or no rain. Such was particularly the case in the vicinity of New York City, where we have hundreds of market gardeners, who cultivate thousands of acres of Cabbage, Cauliflower, and Celery, but the "dry spring" has played sad havoc with their seed-beds. Celery is not one-fourth of a crop, and Cabbage and Cauliflower hardly half, and this failure is due to no other cause than that they persist in sowing their seeds without ever taking the precaution to firm the soil by rolling.

We sow annually about four acres in Celery, Cabbage, and Cauliflower seeds, which produce probably five millions of plants, which we never fail to sell mostly in our immediate neighborhood, to the market gardeners, who have, many of them, even better soil than we have for raising these plants, and would succeed if they would only do as we do, firm the seed after sowing, which is done thus:

After plowing, harrowing, and leveling the land smoothly, lines are drawn by the "marker," which makes furrows about two inches deep and a foot apart. After the man who sows the seed follows another, who, with the ball of the right foot, presses down his full weight on every inch of soil in the drill where the seed has been sown. The rows are then lightly leveled longitudinally with the rake, a light roller is passed over them, and the operation is done.

By this method our crop has never once failed, and what is true of Celery and Cabbage seed is nearly true of all other seeds requiring to be sown during the late spring or summer months.

On July 2d of 1874, as an experiment, I sowed twelve rows of Sweet Corn and twelve rows of Beets, treading in, after sowing, every alternate row of each. In both cases, those trod in came up in four days, while those unfirmed remained twelve days before starting, and would not then have germinated had not rain fallen, for the soil was dry as dust when the seed were sown.

The result was, that the seeds that had been trodden in grew freely from the start, and matured their crops to a marketable condition by fall; while the rows unfirmed did not mature, as they were not only eight days later in germinating, but the plants were also, to some extent, enfeebled by being partially dried in the loose, dry soil.

This experiment was a most useful one, for it proved that a Corn crop, sown in the vicinity of New York as late as July 2nd, could be made to produce "roasting ears" in October, when they never fail to sell freely at high rates; but the crop would not mature unless the seed germinated at once, which would never be certain at that dry and hot season, unless by this method.

The same season, in August, I treated seeds of Turnips and Spinach in the same way. Those trod in germinated at once, and made an excellent crop, while those unfirmed germinated feebly, and were eventually nearly all burned out by a continuance of dry, hot air penetrating through the loose soil to the tender rootlets.

I beg to caution the inexperienced, however, by no means to tread or roll in seed if the ground is not dry. The soil may often be in a suitable condition to sow, and yet be too damp to be trodden upon or rolled. In such cases these operations may not be necessary at all, for if rainy weather ensue, the seeds will germinate of course; but if there is any likelihood of a continued drought, the treading or rolling may be done a week or more after the seed has been sown, if there is any reason to believe that it may suffer from the dry, hot air. Another very important advantage gained by treading in the seeds is, that

when we have crops of Beets, Celery, Turnips; Spinach, or anything else that is sown in rows, the seeds to form the crop come up at once; while the seeds of the weeds, that are just as liable to perish by the heat as are those of the crop, are retarded. Such of the weed seeds as lie in the space between the rows when the soil is loose, will not germinate as quickly as those of the crop sown; and hence we can cultivate between the rows before the weeds germinate at all.

Now, if firming the soil around seed, to protect it from the influence of a dry and hot atmosphere, is a necessity, it is obvious that it is quite as much so in the case of plants, whose rootlets are even more sensitive to such influence than the dormant seed.

Experienced professional horticulturists, however, are less likely to neglect this than to neglect in the case of seeds, for the damage from such neglect is easier to be seen, and hence better understood by the practical nurseryman; but with the inexperienced amateur the case is different. When he receives his package of trees or plants from the nurseryman, he handles them as if they were glass, every broken twig or root calls forth a complaint, and he proceeds to plant them, gingerly straightening out each root and sifting the soil around them, but he would no more stamp down that soil than he would stamp on the soil of his mother's grave. So the plant, in nine cases out of ten, is left loose and wagging; the dry air penetrates through the soil to its roots; the winds shake it, it shrivels up and fails to grow; and then come the anathemas on the head of the unfortunate nursery-man, who is charged with selling him dead trees or plants.

About a month ago I sent a package of a dozen Roses by mail to a lady in Savannah. She wrote me a woeful story last week, saying that, though the Roses had arrived seemingly all right, they had all died but one, and what was very singular, she said, the one that lived was the one that Mr. Jones had stepped on, and which she had thought sure was crushed to death, for Mr. Jones weighs 200 pounds. Now, though I do not advise any gentleman of 200 pounds putting his brogan on the

top of a tender Rose plant, as a practice conducive to its health, yet, if Mrs. Jones could have allowed her weighty lord to press the soil against the root of each of her dozen Roses, I much doubt if she would now have to mourn their loss.

It has often been a wonder to many of us, who have been workers in the soil for a generation, how some of the simplest methods of culture have not been practised until we were nearly done with life's work.

There are few of us but have had such experience, personally, I must say that I never pass through a year but I am confounded to find that some operation can not only be quicker done, but better done than we have been in the habit of doing it.

These improvements loom up from various causes, but mainly from suggestions thrown out by our employees in charge of special departments, a system which we do all in our power to encourage.

As a proof of the value of such improvements, which have led to simplifying our operations, I will state the fact, that though our area of green-house surface is now more than double that which it was in 1870, and the land used in our florist's business one third more, yet the number of hands employed is less now than in 1870, and yet, at the same time, the quality of our stock is infinitely better now than then.

Whether it is the higher price of labor in this country that forces us into labor-saving expedients, or the inter-change of opinions from the greater number of nationalities centering here, that gives us broader views of culture, I am not prepared to state; but that America is now selling nearly all the products of the green-house, garden, nursery, and farm, lower than is done in Europe, admits of no question; and if my homely suggestions in this matter of firming the soil around newly planted seeds or plants, will in any degree assist us in still holding to the front, I shall be gratified.

I have now been a writer for the horticultural press for over thirty years, and am egotistical enough to believe that many of my suggestions, born of a lifetime of active practical work in all kinds of gardening operations, have benefited hundreds; but I consider the short paper here given on "The Use of the Feet in Sowing and Planting" the most important and valuable I have ever written, if I have succeeded in making my meaning clear; for the ignorance on this subject is widespread; and when we consider the hundreds of thousands of acres of all kinds of farm products that fail annually from no other cause than that the seeds have not been properly firmed in the soil, we can readily imagine the loss from such neglect and the importance of making known the remedy.

Although, to the thousands of amateurs who are interested in gardening work, the loss resulting from a few seeds failing to germinate, or a few newly-planted plants failing to grow, is not often estimated by dollars and cents, yet the annoyance and disappointment of failure are inducements enough to use the best means to attain success, which I believe will rarely fail to be attained if the directions which have been given for "The Use of the Feet in Sowing and Planting" be strictly followed; for the necessity for the operation of firming the soil is just as essential in the tiniest flower bed of the garden as in the large plots of the market garden or the broad acres of the farm.

The above essay on "The Use of the Feet in Sowing and Planting" was delivered at the annual meeting of the National Association of Nurserymen, Florists, and Seedsmen, held in Cleveland, Ohio, in 1880, and at the meeting held in Chicago the next season I was gratified by the information obtained from a gentleman connected with the press, who publicly stated that the above article had been copied and republished in hundreds of newspapers - throughout the land, and that the information it contained had, no doubt, already been worth hundreds of thousands of dollars to the community. Believing this statement to be true is a sufficient excuse for again reproducing it in its present form in "Garden and Farm Topics," as in this way we bring it permanently before the hosts of new readers annually springing up.

