

THE FARMERS DEPARTMENT.

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STIRRING THE EARTH A RELIEF AGAINST DROUGHT.

This is a striking subject, and one, which we are aware has been long since settled by intelligent cultivators in all countries. It is very familiar to gardeners, and the cause of the very superior productions of gardens over field culture may be attributed in part to the more frequent application of the hoe and spade. Yet it is true, that the very greatest benefits of agriculture, in its proper position, and disapprove the practice. They think it dangerous to plough and hoe, in the time of extreme drought and heat, while our own experience of twenty years has convinced us, that it is much superior as a remedy, against drought, than watering in the limited manner, in which that must always be applied. There has never been a season in our memory in which there was greater necessity for the application of all remedies against drought than the present. The drought was not only of longer duration, but it took place, when plants were the least able to resist it, not having sent their roots in quest of nourishment far, wide, and deep. The early foliage, also, is more tender, and more liable to wither under a scorching sun and a drying wind.

In this extraordinary season, I had a small patch of early potatoes planted in a warm and sandy soil purposely to procure an early crop; the soil was, at least, three quarters pure sand, mixed with some food for plants among the sand. The severe drought threatened a total loss of the crop. The potato stalks were feeble, drawn up, scarcely larger than goose quills, and I expected every day to see them wither; all hopes of a crop were abandoned. I thought that they were the fair subjects of a desperate experiment. On the 11th of August, the drought gave them a thorough ploughing, passing the plough four times through each row; first ploughing two furrows from the hills, as near the roots as possible, without throwing out the seed potatoes, and then returning the loam, or earth, instantly back by two other furrows. No rain intervened for ten days. In three days after, the potatoes changed their color, they started fresh as if they had received the benefit of ample showers, while not a drop of rain had fallen.

The dews, which were abundant, settled upon the now turned earth, while before the ploughing, no moisture had been apparent.

The last fact, though it cannot have escaped the notice of the most careless cultivator, has not been as yet explained. We can easily see, that a soil, rendered porous, would more readily and easily convey its moisture to the roots. It becomes like a sponge, and is readily permeable, or rather readily permits the moisture to pass between the particles. But it is not yet understood why it attracts the moisture. Perhaps, however, it may be owing to its presenting a much greater surface to the moist air of the night. The fact however, which is what *most concerns us*, is settled. Perhaps some of the experiments of our distinguished countryman, Dr. Wells, in a previous year, who rendered himself distinguished by his remarks on dew, may tend to explain this fact, though it is not my purpose to examine the theory.

Every man who feels an interest in the question, can satisfy himself, at once, by stirring a small piece of earth in a time of severe drought, and if he does not find it in the morning more filled with moisture, than the undisturbed ground in its vicinity, let him continue a disbeliever.

But there is another mode, and it is one which I have never seen suggested, by which I apprehend the stirring of the surface, and making it light and porous, is beneficial in great droughts. It is this: light porous bodies are bad conductors of heat, perhaps because they have more air between their interstices. The facts are familiar to us. Metallic bodies acquire an intense heat under the rays of the sun, so do stones in proportion to their density. The earth when very compact, will become exceedingly hot, but garden loam, which is very porous, remains cool at noon-day, two inches below the surface. I believe, therefore, that moving the surface, and keeping it in a light and porous state, enables it to resist the heat of the sun's rays, that the air between the particles of earth communicates the heat more slowly than the particles themselves do, when in close contact.

Such is my theory: But I am an enemy of theories, I always distrust them, I look only to facts; and having observed that a slight covering of half an inch of sand would prevent my strawberries from drought, which can only arise from its lying so loose on the surface, I have been led to infer, that the undoubted fact, that soil in a loose pulverised state resists drought, is owing to the same cause, to wit, the slowness with which the heat of the solar rays is communicated to the roots. But be the theory sound or unsound, I am persuaded that every farmer will find that the free use of this plough, and hoe, in times of severe drought, will be more value to him, than as much manure as that labor would purchase. I have always been convinced from my experience as an horticulturist, that the great secret in cultivation consists making the soil porous. In raising exotic plants we know it to be true, and our four pots are always supplied with soil, the most porous which we can obtain. The farmer may borrow light from an old proverb, which looks upon it with disdain, but which serves to elucidate and explain the secrets of vegetation.

PLANTING TREES, &c.

The following method of planting or transplanting fruit trees are recommended by European writers.

Planting with balls.—By removing a plant with its roots attached to a surrounding ball of earth, it continues in a growing state, without receiving any or but very little check from its removal. This mode is often practiced, more particularly with the more delicate and choicer kinds of exotics, both trees, shrubs, and herbaceous plants, and occasionally with many of the fibrous-rooted flowering plants, both annuals and perennials, even in their advanced growth and flowering state, when particularly wanted to supply any deficient compartments, or when intended to remove any sort of tree or plant out of the proper planting season, as very late in spring, or in summer. The most difficult tribe of plants to transplant, when in a growing state are bulbous roots, which succeed with difficulty, even when removed with balls attached.

Planting by mudding in, is a German practice in planting fruit trees, particularly suitable to the dry sandy soils of that country, and sometimes adopted in similar situations in England. The pit being dug out, the mould in its bottom is watered and stirred so as to form a mass of mud about half the depth of the pit, the tree is then inserted, and its roots worked up and down in the mud, so as to spread them as much as possible equally through it. More

mud, previously prepared is poured in till the pit is full, which is then covered with dry cart, raised round the stem, but hollowed in the middle, so as to form a basin round the stem, and finally covered with litter, (*mulch*), and if a standard, it is fastened to a stake to protect it from winds. Diel, a scientific German author, assures his readers, that trees planted in this way in spring, thrive better in cold situations than those planted in the ordinary way at the preceding autumn; and that though it occasions considerable trouble, it should never be neglected in spring or autumn. He found it also particularly useful in the case of planting fruit trees in pots. (*Obs. Orangerie*, &c. vol. ii.) Trees alluding to this mode says, "planting in a puddle occasions the soil speedily to firm, not only too hard for the roots of the plants to spread, but also so far as necessary to exclude water."—*Rural Improver*, p. 89.

"Planting by fixing with water is an excellent variety of the last species. It has been successfully practiced by Mr. Poncey, and is thus described by him. The hole being made, and the tree placed in it in the usual manner, the root is then slightly covered with the finer parts of the soil, the tree being at the same time shaken, as is common to settle the earth among its roots. Water is then applied by a common gardening watering pot, by pouring it upon the soil with some force, in order to wash it close to and among the roots of the plant. But this cannot be done effectually by elevating the pot as high in the hands as it can be conveniently used, after first taking off the nose. It will be obvious, that for such purposes a large pan with a wide spout is to be preferred. The hole is then filled up with water as before, which usually finishes the business. The foot is never applied except in the case of bad roots, which sometimes occasion the plants to be left a little leaning. In such cases, the application of the foot slightly once or twice, after the soil has become somewhat firm, (which generally happens in less than an hour) sets the tree upright, and so firm as to require no staking."—*Ibid* p. 89.

British Cattle.—A century ago, our cattle from the inferiority of their feed, were not one half, sometimes even not one third of their present weight. It is computed that England, and Wales now contains, at least, five millions of oxen and a million and a half of horses, of which about a million are used in husbandry, 200,000 for agriculture, and 300,000 are colts and breeding mares. The number of sheep is about twenty millions, and eight million lambs. The number of long woolled sheep is about five millions, their fleeces averaging 6 or 8 lbs. and of short woolled sheep fifteen millions, the weight of fleece averaging from 3 to 3.4 lbs. The whole quantity of wool annually shorn in England is from eighty to eighty-five millions of pounds. The Merinos were introduced about the beginning of the present century, and were imported in large numbers after our alliance with Spain in 1809. The great pasturage counties are Leicester, Northampton, Lincoln, and Somerset; and for butter and cheese, Cheshire, Gloucestershire, and Wiltshire. The import of butter and cheese from foreign countries is checked by duties, but these are important articles of Irish commerce with England.

Age of Sheep.—The age of sheep may be known by examining the front teeth. They are eight in number, and appear during the first year, all of a small size. In the second year, the two middle ones fall out, and their place is sup-