

that they may get well matured before the coming winter. With seven years' experience, I have not lost six per cent., in practising the common mode of cleft grafting. In old trees, when I work young stocks, I prefer budding (American Shield budding), having found it the safest and most speedy way of working fruit trees. I have now in my nursery grounds 25,000 apple trees and 500 cherry trees; of the former 2,500 are one year old from the bud, and 2,000 of the present season also from the bud. The following are the kinds.

Early Harvest,	Roxbury Russett,
Summer Queen,	English do.
Early Strawberry,	Grand Isle do.
Large Yellow Baugh,	Feather Coats,
Rhode Island Greening,	Paper Apple,
Fall Greening,	Spitzenburgh,
Winter Greening,	Oyster Bay,
Sweet Greening,	Stephen's Apple,
Yellow Bellflower,	Cat Head,
Newtown Pippin,	Seek no farther,
Twenty-ounce Pippin,	Fameuse,
Holland Pippin,	Siberian Crab,
Fall Pippin,	Northern Spy,
Lady's Pippin,	Prunetto,
Pumgries—Sour	Sweet Pearmain,
Do. —Sweet	Blue do.
Pound Sweeting,	Glass Apple,
Mouser Sweeting,	St. Lawrence,
Ewing's Sweeting,	Gilliflower,
Menkly do.	Suran,
Wing do.	Barnisan.

Together with the other native varieties of fine quality. My cherry trees, many of which are bearing, are of the common English variety.

The number of lbs. of maple sugar I manufactured during the last three years, is as follows:—

In 1847	1500 lbs.
In 1848	1000 lbs.
In 1849	1500 lbs.

Unless some accident happen to my maple orchard, in five years from this date, I shall tap 3000 trees, which is more than three times the number I now tap. Had I time, I would give you a statement of the cost of manufacturing.†

I remain, your obedient servant,

J. C. MARSTON.

DRAINING WARMS THE SOIL.—It is reported, that in a garden in Hampshire, the temperature of the soil has been raised 15 deg. by draining heavy land four and a half feet deep. This, if true, is a prodigious gain—beyond anything that we could have attempted as a permanent result, even in summer—winter is of course excluded from the statement. Circumstances prevent our examining the statement in the case alluded to; but, allowing for some exaggeration, there can be no doubt that a result sufficiently approaching it to be of the greatest value, is attainable.

It is not now, for the first time, that the public attention has been drawn in the *Gardener's Chronicle*, to this highly important subject. On the contrary, we have on several previous occasions pointed out the undoubted fact, that an increased temperature is one of the most valuable results of deep drainage; a more probable cause of the immediate improvement of the health of

crops than the mere removal of water, or introduction of air into the soil. The nature of deep draining is in fact such as to render additional access of air to the roots of plants too inconsiderable to be appreciable. It is only when deep draining and deep trenching accompany each other, that any great access of air to roots beyond what is customary can be anticipated. Where both are secured, the effect is certainly magical.

There exists in Essex, not a hundred miles from Brentwood, an orchard of apples, pears, plums and cherries, which was planted about twenty-two years ago in a heavy clay, trenched down to an iron pan on which it lies. For a few years, the trees grow pretty well, that is to say, as long as their roots were near the surface, and received the warmth of the summer's sun; but as they advanced downwards, the growth became "small by degrees and beautifully less," till at last it ceased, and nothing flourished but an abundance of grey lichens, with which the branches were covered. The owner was advised to drain it three feet below the pan. In the first year afterwards, vitality was roused so effectually, that the lichens began to disappear, cast off by the swelling bark, and the last stage of decrepitude had been exchanged, by the end of the first six months, for youthful vigour. In the second and third seasons after the draining, the trees made shoots from four to five feet long.

We have no doubt, that the main cause of this remarkable and sudden change, was the elevation of temperature consequent upon very deep drainage. Rain becomes heated by the surface soil, and carries its temperature with it as far as it sinks into the soil. The gain in this way is variously estimated at from ten deg. to 15 deg. in summer—an enormous gain, which places plants on a hotbed—for soil heated ten degrees above the ordinary temperature is nothing else. Deep draining, therefore, not only offers considerable security against the introduction of roots into the water channels, but has the great and unsuspected advantage of considerably raising the temperature of the earth which is in contact with the drains, deep as they may be, for water cannot soak rapidly into earth without carrying warmth along with it. This is now so well understood by men of intelligence, that it is superfluous to dwell upon it.—*Gardener's Chronicle*.

NOVEL MODE OF PROPAGATING APPLE TREES.

We have mentioned almost every mode of multiplying or propagating apple trees that could be devised, but have been cautious about recommending those modes which have not been pretty thoroughly tested from the infancy to the old age of the trees.

Planting the seeds and grafting or budding the young trees, is the old established mode of propagating extensively the various kinds that we need or desire. The following mode we derive from the Patent Office Reports, communicated to Hon. E. Burke, former commissioner of Patents, by Timothy Dudley, of Mendon, in Adams county, Illinois. It seems that the plan succeeded well with him, and as he states that the scions took root, and that by breaking off all other roots, he confined the nourishment of the trees to their own roots, it may be a good method.—We have never seen the mode tried, and only give it to our readers as an item of intelligence in the business of raising trees, which they may try at their leisure or not, as they may deem advisable.

In the spring of 1840, says he, in the early part of March, I procured from the best orchard I could find, two or three large bundles of scions, cut from horizontal branches of the last growth. These I buried in my garden, three inches under ground, till I should want them.

† We should be obliged to Mr. Marston for this, or any other information in accordance with his pursuits.—[Editors of *Agriculturist*.]