England for all that desire it; agricultural skill would be developed, and many enterprising persons would be retained on farms through life to ennoble the pursuits of their earl years, to enlighten by their instruction and example their fellow-laborers, while they are now driven to shops, to merchandize and to professional life, only to be baffled at every turn of fortune.

No one thing, at this time, is more detrimental to the farmers of New England than their propensity to till too much land. It is making whole counties poorer every year. So great has been this impoverishment that it is estimated that a thousand million of dollars are now needed to bring back the soil of the Free States to the high fertility it possessed when the woodman's axe first felled the forests and let in the sun —and this same process must go on till we learn that first lesson in farming; that our income does not depend upon the scanty tillage of many acres, but upon the liberal tillage of a few.

There is an intimate connection between large farms and scanty crops—the earth makes just returns. She yields sparingly or bountifully as we trust her. As most men having large farms, no capital besides their land, buildings and stock, they are not able to introduce more expensive but tried modes ofculture, to make experiments or to reclaim their waste lands. When they are urged to make such and such improvements, their plea invariably is, "We cannot afford it. The best we can do is to support our families and pay our taxes. Improvement is out of the question." So they go on, year after year, in those old ways of culture by which a large part of New England soil has become so profitless.

I would suggest to these large land-holders that they turn part of their land back again into capital, and that they use that capital in tilling as they ought to till the rest. Or if they have sons, to divide a portion among them. Then they would be compelled to limit their own strength and skill to a smaller surface. Their net income would be greater, their lands would become better, the withered pasture lands would receive attention, and the meadows, those mines of agricultural wealth, would be drained and recovered.

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Draining with Tiles.

BY H. F. FRENCH.

Enough has been said, and written, and observed, to convince all enlightened farmers that a great proportion of the lands in New England which prove in the end most valuable, require to be first relieved of surplus water. This is true of all our low meadows, and a great deal of upland, especially springy hill-sides.

Thorough draining with tiles is, without doubt, the cheapest and best mode of doing this, and, although I remarked in a recent article, that we have not yet arrived at the luxury of using drain tiles, I find that our farmers are resolving that they will act in this, as in other matters, on the principle that what is worth doing, is worth doing well; and will not be satisfied till the best mode of draining is adopted. To keep up with the spirit of the age, I have myself opened some hundred rods of drains, on my farm, and procured tiles all the way from Albany to lay in them. This being my first attempt, I can only speak now from observation, and the information I have gathered from men and books, on the subject. As this subject must occupy the attention of our farmers more than any other, for many years to come, it being the next great step to be taken in the march of improvement on all our old farms, it will be deemed excusable to begin at the beginning in our discussion. Though milk be "for babes," it cannot injure full grown men to taste it occasionally. So let us first answer.

What are Drain Tiles?

Drain tiles are made of clay, similar to brick clay, moulded by a machine into tubes, usually fourteen inches long, and burnt in a kiln, or furnace, to be about as hard as what are called hard burnt bricks. They are of various forms and sizes. Some are round, with a sole or flat bottom, moulded with the tile, others are horse-shoe formed, open at the bottom, to be laid on the *hard* bottom of a ditch without a sole, or in *soft* places with a sole or flat bottom, of the same material with the tile. The size varies from 1½ to 6 inches calibre, according to the quantity of water to be conveyed. It is a question of expediency, whether to use very large tiles, or to lay two or more courses of smaller size, side by side, when the flow of water is very great.

How are Tiles Laid.

Trenches are opened to the requisite depth, as narrow as convenient for men to walk in. Green hands at ditching will declare they cannot trench three feet deep without breaking the ground 2½ feet wide, but with proper tools, I have found no difficulty in going 4½ feet deep in a trench but two feet wide at top. The English books say that men who work by the rod, always open very narrow trenches. My tools are, first, a common shovel; next, a common spade, and lastly, a long-handled spade, cut down at a machine shop with shears, to 3½ inches width at the point, with a true taper from the heel, making a wedge shaped spade.—With this the ditch is finished, with just comfortable room to lay the tiles straight, and lay in a chip of brick or stone on each side, where a joint is too open. Then having laid the tiles end to end, with a true descent in the trench, commencing at the top, cover them first with something that will exclude sand, which I take to be the worst enemy to contend with. I use spent tan as a convenient and very perfect strainer. The books say turf with the grass down is commonly used. Hay, straw, or pine or hemlock boughs are also used. Having thus covered the tiles, put into the trench next that part of the earth thrown out, which lets the water pass through most readily, as sand or gravel, or in a clay soil, the top soil. It is perhaps possible with pure clay puddled in, to stop water from getting into the tiles, and no person of common judgment would put pure wet clay immediately on to the tiles. Finally, fill the trenches and make all level, making allowance for what the earth over the drain may settle. The first question that is asked by a novice in the art of draining with tiles always is.

How does the Water get into the Tiles?

The answer is, it gets in at the joints, and thorough the pores of the burnt clay. Professor Mapes says that if you cork up both ends of a common drain tile, and put it under water empty, it will fill by water passing through the pores in two minutes. A Scotchman with whom I recently conversed, who is familiar with the practical operations of tile draining, said that you might stop one end of a tile, and pour in a quart of water every day in the year, and it would all go through. There need be no fear on this point. In any soil but pure clay, you cannot keep the water out of the tiles, and it is very rarely that clay is found that cannot be thoroughly drained with them. This is no new business, and there is no need of any doubt about the facts as to the operation of tile draining.

One advantage of Agricultural Societies.

In the course of the address which was delivered before the Penn. State Ag. Society, at Pittsburg, by Hon. George W. Woodward, we find, here and there, some suggestions which seem well worthy of consideration, and well adapted to promote the interests of the agricultural fraternity at large. We propose to copy, ot condense, a few of the more important of these suggestions for the benefit of our readers.

In speaking of the want of interest among farmers in general, in State and County organizations for the promotion of good husbandry and rural industry, and of the benefits which flow from the exbibitions of these States and County Societies, Mr. W. mentions one advantage of them which has been probably less thought of than it deserves to be. He says:

"These fairs, besides furnishing many valuable hints in regard to field crops and cattle raising, afford to farmers an opportunity to examine, compare, and test the various improved implements of husbandsy which the mechanical ingenuity of the day is supplying. It is to be expected that an age so fertile in inventions as the present, will be distinguished by some valuable discovery in the application of machinery to the various arts of agriculture, and by the multiplication of implements which are *not worth* possessing. And the fact corresponds with the expectation. There are im-