

draining according to the modern practices of older and wealthier countries, that he is altogether impotent regarding this essential means of improvement. He can do something every year in the way suggested, and which will in a short time produce the most beneficial results. In going over any part of the country, the oldest settled districts even, on the breaking up of the spring, how large a portion of the cleared land, much perhaps that is in crop with winter wheat, does one observe partially covered with water,—which even with a spade—provided there were good ditches, might speedily be conducted away into the creeks and streams. A day or two's work in this manner at the approaching season, would frequently be found to afford considerable relief to portions of half drowned fields. To deepen a furrow here and there only a few inches will often discharge several thousands of gallons of stagnant water in a few hours. These are plain suggestions which every man can understand, and if he choose put into practice.

When a farm has got its natural drainage improved by deepening and straightening the water courses where needed, with open ditches and furrows through the lowest and wettest portions, and the surface sufficiently levelled and inclined to allow the surface water to escape freely into the natural or artificial channels thus provided, its owner may begin to think seriously of underdraining. Even when the latter operation is thoroughly carried out, open furrows cannot be safely dispensed with in this country, particularly when hollows or basin like depressions exist on the surface. The water which will be seen to accumulate in such places during the melting of the snow in spring, and not unfrequently during winter, should be conducted away to the highest outlet by surface drains.—The frost in this country often penetrates so deeply that water may be seen to accumulate and remain several days, even

though a covered drain lie beneath. It will take considerable time before a sufficient depth of the frozen surface becomes thawed for the water to find its way into the drain beneath, and when it does this suddenly and in large quantity the drain is frequently injured, if not destroyed. For this and other reasons we strongly urge the improvement of the surface, and the making of open furrows or ditches, preliminary to the commencement of underdraining.

Nor need this latter operation (underdraining) be altogether deferred till the farmer is able to purchase tiles and execute the work in the most approved modern style, such as is now practised in older and wealthier countries. Much may be done towards relieving the land of superfluous water, by making here and there a drain, at the right places, with a view of cutting off the supply from the higher to the lower levels, and conducting the water to the nearest outlet. A single drain, cut to a proper depth in the right direction, will sometimes divert the water of a permanent spring, and thus cut off the cause of wetness from an acre or two of ground, that was before comparatively worthless.

As to the *materials* for making drains, where stones cannot be conveniently procured, and pipes or tiles are too expensive on account of distance of carriage, or otherwise, the farmer need not give up the idea of commencing the needful operation in despair. A trench dug out, gradually narrowing to the bottom, and filled ten or twelve inches with old rails, under-brush, &c., will generally prove effectual for several years. It was in this way draining in England was carried on for generations; even sod in grass lands was often used in constructing drains with great advantage. Such materials, (with the exception perhaps of sod, will be found sufficient in this country, for a beginning, and when no thorough system can be carried out for want of means, or of the necessary preliminary preparations to which we have already adverted. In case of water being so abun-