may safely prophecy that the general opinion and practice will be, in all well improved districts, to employ the pipe tile in properly formed drains :- and these will be found in the end, the best and the cheapest.

In all systems of drainage, the Main Drains-their directions and dimensions -must be the first care of the improver. We have sunk pits in different places to test the nature of the subsoil and ascertain the direction of the greatest flow of water-where it could be arrested with the greatest case and certainty, and got Quit of with the greatest facility. We have also run deep drains up the slope at distances from the lowest to the highest level with the same view, making these to serve as the main ducts in the several systems of subdrains connected with each of them. Having ascertained the nature of the strata, then, and the main direction of the flow of the subjacent water,-the whole of the main drains, are laid out and cut-being always placed in the lowest parts of the ground. The depth must in many cases, be carefally regulated by the fall to be obtained for carrying off the water from the whole extent of the drained surface .- The subdrains can be lined out either by drawing a furrow slice with the plough along each line, or by digging a few holes along.-to mark the line - the width of a main drain is best determined by the case with which men are able to work at the bottom.-You have next to determine the distance and direction of your sub-drains. - This may vary from 18 to 40 feet-the nature of the soil regulating the relative dista ce. The direction of the subdrains is important-which should be as nearly as possible in the direction of the fall of the land, and not sloping across it. Science and extensive practice have both proved the correctness of this rule. - If necessity absolutely compels it, let the slope be as small as Possible.—One inch of fall in 150 fect, or 3 feet in a mile is enough to secure the perfect passage of water where well prepared tiles are employed. You will be acting wisely by making your subdrains as deep as the main drains will permit of -In cutting drains for 2 inch tiles, or upwards you need not open them at top beyond from 12 to 14 inches, if intended to be 3 to 4 feet deep .- In strong elay, lay the mould on one side, and the subsoil on the other. - In other soils, the separation will not be necessary.

The throwing over of the surface mould is effected by the man who first breaks the soil or surface :- a second man follows, and shovels off all the loose mould left by the first : — a third loosens the top of the subsoil by a foot pick, or common pick axe, which is shovelled away in its turn,—but to the opposite side of the drain; and this alternate picking and shovelling are continued until the requisite depth is attained; but, towards the bottom, a narrower shovel, called the ditchers shovel,-must be used, as the drain shall then have become too narrow for ordinary tools.

Laying the pipes or tiles would seem to require no instruction. They must be carefully placed in contact-preserving a suitable fall throughout the whole course of the drain; and care being taken that no portion of the loose earth, by any accident, becomes inserted.

The following table may be useful :--

Drains 12 feet apart require 3630 pipes per acre, made in lengths of 1 foot.

do	15 do 🌷	do	2984	do
do	18 do	do	2420	do
do	21 do	do	2074	do
do	21 do	do	1815	do
do	27 do	do •	1613	do
do	30 do	do	1452 ·	do
do	33 do	do	1320	do
do	36 do	do	$1210 \cdot$	do

We have thrown together above a few plain and brief directions on under drainage.—But this is a subject of the first importance, and we shall recur to it, not only with a view to a further explanation of details, but to urge, with all our ina. influence, the more general adoption of this invaluable improvement. J. A.