

## SUB-SOIL PLOUGHING.

We notice in the United States agricultural papers that a new era is about to dawn upon the enterprising cultivators of the soil of that country, through a mighty revolution in agriculture that is likely to be produced through the agency of the sub-soil plough: this reminds us of a fallacious document which went the rounds of the same papers only two years since, by which the discovery had been made by a very celebrated French chemist, that ploughing the ground was an unnecessary step to insure a good yield of corn. A mere layer of straw, shavings, or any decomposable substance, laid evenly over the surface, tied down with cords, we presume, was all the management required to warrant a large and profitable yield; and the soil being of so little consequence to the plant, that it was considered that it would vegetate and mature on a *pane of glass* or solid rock, equal to the finest pulverized soils. We are astonished that such articles are tolerated in this enlightened age; but this may be accounted for in part from the fact that nineteen persons out of twenty who write on the subject of agriculture are men of theory, who very probably never saw what they write put into execution, much less practice it. We were told only a few months since, by one of these men who make a livelihood by writing himself into the favourable notice of Canadian farmers—that he positively did not know the difference between an ear of oats and an ear of wheat.

In comparing sub-soil ploughing with the experiment of the French chemist, we do not wish to be understood that no benefit is to be derived from the operation, on the contrary, we are of opinion that much good is likely to result from sub-soiling, but in no way can it be found beneficial unless accompanied with thorough draining.

In introducing or recommending improvements in Canadian agriculture, only such shall receive our countenance that are calculated to bring in their train sure and remunerating profits—all doubtful experiments shall be withheld.

Sub-soil ploughing of itself, is calculated to do more harm than good, but when accompanied with thorough draining is of considerable benefit, and if properly performed is almost a sure preventive of drought. No man who had ever practiced thorough draining, would think of recommending it in this country where labour bears so disproportionate a price to the products of the farm. Thorough draining apart from sub-soil ploughing, would cost at least £6. per acre; and if stone were not in an abundance on the spot, it would even exceed that sum. The average price of cultivated lands in Western Canada does not exceed £5. per acre, and is it likely that a system of farming could be successfully introduced, that would require an expenditure exceeding the prime cost of the farm, to prepare the soil for proper cultivation? To make ourselves perfectly understood on this point, it will be necessary to give a mere outline of what is properly called thorough draining. The drains run most generally parallel with each other, and are from fifteen to twenty feet asunder, and from twenty to thirty inches deep, and filled with small stones within fifteen or twenty inches of the surface, or with draining tiles, then covered with straw or brush-wood, and filled with the surface soil. Sub-soil ploughing, accompanied with this thorough draining, merely consists in the stirring of the sub-soil by

a heavy instrument in the shape of a plough, excepting that no mould-side is wanted. The course to be adopted to carry out the operation, is first to use the common plough, and by which a large furrow of the active soil is to be thrown out, then the sub-soil plough is to follow, and thoroughly break up the understratum or subsoil to the depth of ten inches if possible; then the common plough should follow, and throw as deep a furrow as possible of the active soil, over the last opened furrow of the sub-soil, and so on until the whole work be ended.

By continuing the process of sub-soil ploughing for a series of years, a deep friable mould will be made, which will be equal to the soil produced by the celebrated Irish spado husbandry; but such expensive modes of cultivation are best suited to countries where labourers may be had for sixpence per day, and where wheat is sold for eight or nine shillings per bushel, and we must content ourselves in Canada by practicing such systems of cultivation as are applicable to the peculiar circumstances under which we are placed.

Although thorough draining and sub-soil ploughing are improvements that would not warrant the outlay, in the present infant state of the agriculture of the Province, still less expensive modes may be practiced to drain the land, and give it that desired depth of mould that is necessary to prevent injury to the plant from drought. The following suggested itself to our mind in the fall of 1839, and would have been carried into practice, had not circumstances over which we had no controul, prevented us. The field in question was wheat stubble after summer fallow, which was ploughed with a four by nine inch furrow, in the early part of the month of September. The plan which we intended to have adopted to give the soil a good depth, was to have harrowed the land twice after the above ploughing, and by the first of November to have crossed ploughed it with a furrow six inches deep and twenty inches wide, which would have given the field the appearance of land prepared for the turnip drill. Land prepared in this style would only require once ploughing in the spring to fit it for spring wheat or barley, and would be admirably adapted for laying down to grass seeds. Other cheap and effectual plans may be introduced to attain the same object, which will be noticed in due time through our columns.

In recommending improvements in Canadian husbandry, we trust that the interest we have in the cause in common with our brother-farmers, will be a sufficient check to prevent us urging upon others to practice what we would not be willing to put into practice ourselves. If we occasionally err in our judgment, we would be happy to be corrected by any who may be competent to point out the error.—*Pub.*

## FIRE BLIGHT—DISEASE OF PEAR TREES.

We have received a letter from the Niagara District, signed *A Subscriber*, requesting information relative to a disease called fire blight subject to pear trees.

We beg to state for the information of our unknown correspondent, the little we know about the disease, and would consider it a favour were some of our readers to take up the matter, and give such additional facts as would lead to correct conclusions on the subject.

It is generally understood that the fire blight is caused from a small wire worm, that conceals

itself between the bark and the sappy parts of the wood which girdles that portion of the tree, so as to prevent the circulation of the sap. The most simple and natural cure that we have heard recommended is to cut the diseased parts off close to the trunk of the tree, and burn them immediately: an other plan has its admirers and has been practiced with considerable success by a few gentlemen in this city, which is simply done by boring a hole through the trunk of the tree and filling it up with sulphur and plugging it: the odour from the latter would obviously ebb and flow with the sap, by which means, it is said, the insect will leave the tree almost immediately.

The amount of premium offered for an effectual cure for the disease, is a subject with which we are not acquainted, and would therefore refer our correspondent to more competent authority to obtain the desired information.

The information desired about budding and grafting the plum successfully, will be transmitted in the April number in so clear a light that the greatest novice could not err, if the plan we recommend be carefully followed.

The best stocks for plums are produced from blue plum seedlings or from seedlings from any of the cultivated varieties. The suckers which shoot up from the roots of grown trees of the above sorts, if carefully separated from the trunk and planted properly, will be found to answer for stocks.—*Pub.*

## WESTERN DISTRICT LITERARY INSTITUTION.

We have this month had the pleasure to receive through the kind attention of Major Lachlan, a Pamphlet neatly got up from the press of H. C. Grant of Sandwich, entitled the "By laws of the Western District Literature Philosophical and Agricultural Association." This association instituted by Gentlemen of the highest respectability, talent and influence, in and around Amherstburgh, has for its object, the endeavour as far as lies in its power by its own efforts and by recommending the formation of similar Associations elsewhere, to demonstrate and *practically* illustrate the inestimable value of scientific and otherwise useful information in every station of society; and to aim at *mutual* instruction in the various arts and sciences and in the ordinary pursuits of life.

Appended to the said By-laws is a copy of the admirable discourse read at the first meeting of the Association on the 23d September last, by Major R. Lachlan the President, wherein after a few introductory observations congratulatory of the occasion, he encourages the Members by a rapid sketch of the rise and progress amid difficulties and discouragements of the various similar Institutions throughout Europe—to perseverance in the good plan so auspiciously commenced, then turning to the transatlantic world, he makes brief mention of the several Literary and Scientific Associations already established in different parts of Canada, "bright spots indeed (he says) in our otherwise clouded horizon—but tending alas, to render the prevailing mental darkness only more apparent."