

all the winter and carried a fair number of stock. This I largely attribute to drainage.

On the acre which was subsoiled the clay beneath the top-soil is still loose and friable to a depth of 3 in. or 4 in. This plot yielded 84 cwt. 2 qr. 14 lb. pure clover hay per acre. The non-subsoiled plot yielded 55 cwt. 4 lb. per acre. Both plots have also afforded a good deal of grazing. On the subsoiled plot the clover-plants have stout roots and heavy crowns, the roots being dragged out by the plough and broken off at an average distance of 12 in. to 14 in. from the crown. On the non-subsoiled plot the roots are much thinner, and the crowns not as heavy, nor the plants as well developed. They break on an average, say, of 9 in. to 10 in. from the crown. This gives a very good idea of the increased depth at which the clover crop is feeding on the subsoiled plot, and is an indication that the method adopted is realizing its object—namely, gradually increasing the depth of cultivable soil on the Marton area.

The subsoiling at Marton was done in 1914 by a P. and D. Duncan subsoil attachment to an ordinary double-furrow lever plough. One mouldboard was removed and the subsoiler attached, ploughing and subsoiling thus being accomplished at the same time. On the stiff clay lands at Marton a five- or six-horse team is advisable if deep ploughing and deep subsoiling are to be undertaken at the same time. At the experimental area the land was ploughed to a depth of about 6 in. and subsoiled to a further 4 in. or 5 in. With the attachment used it was quite possible to plough both furrows and subsoil same at the one operation. If it is only intended just to loosen the surface of the subsoil it is quite possible to do so with the ordinary team, but when any considerable depth is undertaken a stronger team becomes necessary.

The cost of ploughing and subsoiling land similar to the Marton area, contrasted with the cost of ploughing in the usual way with a double-furrow and a four-horse team, may be stated as follows: If a depth of, say, 6 in. or 7 in. is ploughed, and a further 3 in. to 4 in. subsoiled, five or six horses will be required, according to quality, instead of four, and one furrow will be ploughed while the other is being subsoiled, thus taking as long to plough the acre as if you were using a single-furrow plough.

As to how often it may be necessary to subsoil on the class of country mentioned, I am not able to state more at present than that subsoiling at Marton was undertaken two years ago, and that, as indicated, the clover crop of the past season proves the fact that not only is the subsoil still free to the original depth stirred, but that the clover-roots are now feeding therein. This shows that such cultivated area of the subsoil is now providing plant-food, and that therefore the nature and condition of the subsoil has been changed from what it originally was—namely, inert matter practically of little value to the plant.

The chou moellier plots were disked after the stock were removed, and subsequently ploughed. On the green-manured sections there still remains abundant evidence of the green oats which were ploughed under in August, 1915. Much of this material should now be in condition to afford fertility to the soil during the present season.