

that a good deal of underdraining has been done throughout Ontario, but a great deal more could be done with profit.

Secondly. To make farming pay we must keep up the fertility of the soil. We cannot afford to grow grain year after year and only put back the straw to grow the next crop, and some don't do even that. We might as well expent a large flow of rich milk from cows fed on straw alone as to expect a large yield of plump grain from land manured with rotten straw. I hold that to continue growing grain we must give back to the soil an equivalent in plant food to replace that which is taken up in the production of these crops. Now, to do this we must keep stock; yes, sufficient to consume a good portion of the grain raised on the farm. It is not for me to say if you are to go into breeding, feeding or dairying. Some may have a natural gift for one of these and not for them all. We are most likely to succeed in that for which we have the greatest liking. Some will ask, will it pay to feed grain to stock? I can safely say, where we are far from cities or towns and have no other source from whence we can get a supply of manure, unless from feeding stock, it will not pay to farm unless we feed a good portion of the grain raised to keep up the fertility of the soil. We are apt to forget that grain at the ordinary market price and fed through cattle is worth at least 25 or 30 per cent. of the whole cost for manure. Now, I will ask who are the farmers that have been crying out hard times? Is it those that have been feeding grain to their stock for years? No, not a bit of it; it is those who have been growing grain, selling it, and the yield getting less year after year.

Thirdly. It matters not if our land is drained and the soil enriched with manure if we allow the weeds to multiply, disappointment will soon be the result. Just think of a farmer cultivating, harvesting and threshing a crop that is nearly one half weeds. This will cost to harvest and thresh at least \$3 per acre; then it is clearly seen that any person farming in this way will have to expend \$15 for every 10 acres harvested (that is for weeds alone), and there will only be left half a crop of grain, which in these times of moderate prices will pay no farmer to grow. Often summer-fallow is resorted to to rid our fields from thistles or weeds, and how is this

usually done? I can safely say that in six cases out of every ten the land is only sufficiently stirred to ensure a greater growth of weeds the next year. Then again, many of us (instead of summer-fallowing) grow roots which answer a double purpose, that we may have roots for our stock, and at the same time clean our land from foul seeds; but, alas! how often do we see the roots harvested, with the land in a more foul condition than at the time of sowing. I have known some to look with a longing desire to see those good old times return with waving fields of golden grain, but gentlemen, we have robbed our land of its fertility by growing grain and giving little back in return.

To make farming pay mistakes must be guarded against, such as extravagance in the purchase of implements or thoroughbred stock or neglect in the caring for these, but the main principles to ensure the farmers' success are, as I have already stated, underdraining, manuring and destruction of weeds.

Now let me say in conclusion, if any of you have a farm and any portion of it is too wet for the full development of the various crops, by all means drain it. Secondly. Look after the supply of manure, so that you may be able to replace those elements taken out of the soil by growing grain and other crops; and lastly, unless the myriads of weeds are destroyed the farmer will be robbed of his labor, but with these things properly attended to success will surely follow.

### The Future of the Live Stock Industry of Ontario.

Thos. Shaw, Professor of Agriculture, O. A. C.

The value of the live stock in Ontario in 1889 is computed at \$105,731,288. The crops grown in 1889, the greater portion of which was consumed by the live stock of the Province, is estimated at \$111,169,572. The entire farm property of Ontario is valued at \$982,210,664. These figures, which are taken from the Ontario Bureau of Industries, furnish us with an idea of the magnitude of the live stock industry of this country, which probably could not be obtained from any other source, unless it be through the export tables contained in the trade and navigation returns.

These tables inform us that the total amount of the live stock and products ex-