

then be cleaned and all the chaff and dust separated from it should be burned. From the Wheat which grew on eight acres about four bushels of the Midge larvæ have been thus obtained and burned. This quantity would represent about 150 millions of the insects, and would have been sufficient to destroy the following Wheat crops. By destroying them the Wheat crop of the next year was sure.

This simple method of check-mating our little enemies does not cost much, and it is certain that, if followed, it would, to say the least, greatly lessen the evil, if not completely remove it. Surely our farmers should not give up in despair and admit themselves conquered by a tiny little fly. At present I know of no effect that they are making to resist this plague. They merely sow enough Wheat to feed the Midge, and import what is needed to supply their families. I know of no question so important to our Agricultural Societies as this one of the growth of Wheat, and if they master the subject and succeed in raising enough Wheat in our county to supply us with bread, they will be conferring one of the greatest boons it is possible to confer. Gentlemen, this thing can be done. The rich and cultivated soils of our Province are capable of producing Wheat as good as is found in the known world. Last Summer in Pictou a Mr. Chisholm of East River raised 72 bushels of Wheat from 4 bushels of seed. It is not for want of good soil nor good climate, all we want is a little brainwork, and I trust that the Agricultural Society of Bayfield will look the matter straight in the face.

In regard to the second great enemy of our Wheat crop, viz., rust or mildew, a word or two will suffice. If we examine a healthy straw of Wheat we will find its outer surface smooth, hard, and glistening; it is a firm, protecting coat of silica or flinty matter, which at once gives strength to the Straw and protects it from mildew. But if the plant cannot extract this flinty matter from the soil, if the ground upon which the Wheat is sown is wet and badly drained, or if it contain much undecomposed vegetable matter, then the Straw is liable to have a mould or fungus plant attached to it, whose minute seeds are wafted by the wind or absorbed with moisture from the roots. This fungus takes root in the cells and vessels of the stem and leaf of the Wheat and constitutes rust or mildew.

The best means of preventing rust are:

1st. To use seed which is quite free from it.

2nd. To prepare the soil in such a way that it shall be rich enough and yet shall not contain much undecomposed vegetable matter.

3rd. By attending to *draining*.

Time will not allow me to go into details on these points, but the subject of *draining* is so important, and moreover, so little attended to in this country, that I cannot pass it by. Wheat strikes its roots deep into the ground and suffers more from excessive moisture in the earth than any other crop. In fact wetness in any soil is destructive of healthy and vigorous vegetation, and in no way can labour be better bestowed than in draining off the surplus waters from the surface of the land.

The effects of draining can scarcely be comprehended, until we learn what has been accomplished by it, by referring to history, and this we shall presently do. By a law of physics:

A solid body passing into a liquid form takes up heat—a liquid passing into a gaseous form takes up heat; thus, if, on a hot Summer day, you sprinkle water over the floor of a room, that water quickly passes into the form of vapour, and in doing so, very perceptibly cools the air of the apartment. *The liquid passing into the gaseous form takes up heat.* In like manner, if we place a block of ice in a room, the solid body, ice, soon passes into the liquid form, water, and, in doing so, abstracts heat from the air of the room, and thereby the room becomes cooler.

It is, therefore, clear that if the surface of the earth be saturated with water, the constant passage of the water into vapour will abstract an immense amount of heat from the air. In the present state of our country the woods retain snow and ice beneath them till late in the Spring. The cleared land, for want of means to carry off the water, lies wet and cold, and thus we so often have late, backward Springs. Would you be surprised to hear that the whole nature of our climate could be changed, that instead of the long, cold winters which we now endure, chilly, wet and backward Springs, and the uncertain Summers, we should have a climate like that of Italy or the South of France, our rivers never freezing, our fields scarcely covered with snow, the grape, the orange, and the olive, blooming on our plains, and the cold which we now endure, only known by the records of the historian. Nova Scotia lies between the parallels of 40 and 48 of north latitude. It is therefore in the same latitude as the southern half of France, and the northern half of Spain. Italy, Turkey, Austria, the south of Prussia, Switzerland, and the south of Russia, are also in the same latitude. Now if we can prove that these countries, before their forests were cut down and their land cultivated and drained, were as cold as our country is now, we can fairly assume, that when our land is brought under the same condition as these countries our climate will be equally changed.

The finest portion of France is the southern region that stretches between the Cevennes and Pyrenees, having the Rhone on the one hand and the Garonne on the other. This beautiful vale, where apples, cherries, and several other fruits grow wild, is rich in grain, vines, olives, mulberry trees, oranges and lemons. Such is the country to-day, but when Caesar attacked the Helvii he crossed the mountains of Cevennes, *which were covered with six feet of snow*, and esteemed impassable. His appearance before the enemy took them completely by surprise, as they always thought themselves safe from invasion during the depth of winter. In his second expedition to Britain, he stopped in the midst of his conquest in order to return to Gaul before the autumnal equinox, so much dreaded was the approach of winter, in that country where now winter can scarcely be said to exist.

But let us go further back, as far as 2,000 years ago Herodotus, the father of history, informs us that on the north shores of the Black Sea and around the ancient Palus Mæotis, the duration of winter was for eight months, during which the ground was entirely buried in snow; and that all the countries beyond this line were accounted uninhabitable. Ovid, who was banished to the banks of the Euxine, describes the severity of the weather as insupportable, and distinctly states, that he crossed the Black Sea upon the ice, and that he saw oxen and carriages frequently passing—a circumstance which we would esteem fabulous were it not confirmed by other concurrent facts and testimonies. The ancient historians unite in asserting that all the lakes, marshes and rivers of Gaul, Germany, Thrace and Dacia, were every winter frozen over to a great depth, and presented a firm footing to the hordes of barbarians on which to run down and pillage the southern provinces. Diodorus, Siculus, Strabo, P. Mela, Seneca, Pliny the Naturalist, Herodian and Justin, are unanimous in delineating these countries as of horrid feature, and under the dominion of ice and snow the greater part of the year.

Their accounts are so inapplicable to these now fair regions of the earth that had they not specified the rivers and seas by name, we would have been mistrustful and supposed them engaged in the description of some inhospitable climate such as Lapland or Siberia.

Virgil speaks very positively on this point. He is contrasting the Shepherd life on the plains of Lybia, (that part of Africa bordering upon Egypt) with what it is round the Sea of Azov, on the banks of the Danube, and at the foot of Rhodope—a mountain in Thrace—places situated exactly in our latitude. This is