

has to overcome. Dampness of the soil not only creates a great deal of trouble in the management, but it prevents the coming up of the finer plants, as well as their ripening. Water-sick arable lands, seldom produce heavy grain in the most favourable seasons. Therefore it is unquestionably one of the agriculturist's first objects to remove all superfluous moisture from the soil, if he expects to reap a profitable crop. I am induced to dwell more at length on the subject of draining, being convinced that the farmer may more frequently attribute a failure in the wheat crops to coldness and dampness of the soil through the influence of superfluous moisture, by which the wheat is kept back in the spring, than to all other causes put together.

The next thing to be taken into consideration is the period of sowing. And I would suggest that it is of the last importance that wheat should be *sown early*. Theory as well as experience is certainly in favour of early sowing, because it gives time for the roots of the grain to establish themselves before winter, and experience proves that grain early sown throws up more lateral stems, than that which is sown late. Wheat sown in time to establish a strong root is not so liable to be thrown out of the ground by frost in the spring, and when sown on elevated land will be profitably forward in time of harvest. And when it is to be considered that early maturity is the grand object to be attained in order to elude the period of the operations of the wheat fly, the paramount importance of early sowing will be duly estimated.

Products of much value to man can only be obtained by corresponding degrees of labour, and with regard to the culture of wheat, much depends on the preparation of the soil, the choice and preparation of the seed, and the time and different modes of sowing it. Our farmers will see the necessity of increased labour and expense of procuring the best and earliest variety of seed. When practicable, seed wheat should be selected from some fine crop of the *preceding year*, which shall have ripened thoroughly and been well preserved. We can scarcely anticipate at present the advantages that will most assuredly result from a well directed effort to procure an early variety of seed. The farmer will find that winter wheat is a much surer dependence than spring wheat. The few unpropitious seasons which have passed, the expectations of the farmer have been blasted as much from the effect of rust, as from the depredations of the insect, and we may reasonably expect more favourable seasons in this respect. Indeed the farmers begin to anticipate this, and a much greater breadth of land will be sown this season than the last.

More uncertainty exists relative to spring wheat; the depredations of the fly can only be evaded by late sowing. In the neighbourhood of the writer, the bearded Black Sea wheat has been cultivated with some success, but not uniformly so; in some cases the injury from the fly has been serious ruin in fields sown contemporaneously with the more successful. Black Sea wheat is not proof against the rust, as has been supposed, as the experience of the writer will testify. There is a much wider range for the selection of seed wheat than is generally supposed. By a report of the Highland Agricultural Society of Scotland, it appears there are

eighty varieties of wheat, "many of which possess superior qualities, so diversified, however, as to afford ample means of selection for sowing on strong or light soils,—in autumn or spring on low or elevated situations, while some of them are suited for greater heights than any at which this species of grain has hitherto been cultivated in Britain." The different kinds of wheat are, like all other plants, modified by circumstances of climate, soil, and cultivation; and winter wheat, by being sown in the spring, from a sort of instinctive tendency of plants to accommodate themselves to their situation, will after one or more sowings become summer wheat, and ripen the same season in which it is sown. The principal distinctions among wheats are into red and white kinds, and into thin or woolly chaffed or otherwise bald or bearded. The white and thin skinned are preferred for bread, and I believe the beardless wheats are much the most prolific, but more obnoxious to the attacks of the insect, and injury by mildew. It would be well worth the while for those interested in the success of agriculture, to be at some pains to procure an early variety of beardless winter wheat, as the same bulk in straw will yield at least from twenty five to thirty per cent more of wheat. The diseases of wheat may be hereditary; and as in animals, they may become aggravated in successive generations, when propagated continually from the same stock, in the same situation; therefore the best cultivators recommend an occasional change of seed. It however appears from the Report above referred to, that Captain Hunter of Tynefield, East Lothian, produced the same variety for sixty years on the same farm without change of seed, weighing from 65 to 65 1-2 per bushel.

#### IMPORTANCE OF CAREFULLY PREPARING A SUMMER-FALLOW FOR FALL WHEAT.

For the Canadian Agriculturist.

It is no more than natural that the farmer should manifest the liveliest interest in the production of that crop which is of the greatest value. Wheat, the staple of Canada, has thus far deservedly stood best in his estimation, and is likely for some time yet to maintain that ascendancy, though the average yield for the last few years has not been without its discouraging feature. Rust seems to be the obstacle most dreaded in the way of a profitable return, and though it is too true that no effectual remedy has yet been discovered by which it can be prevented; still there is no doubt that a careful preparation of the land before the seed is sown may go far to lessen its consequences. We have learned from experience that late ripened grain, or that growing on cold wet soil, is most liable to this disease.

The most common complaint among farmers is that their land after being summer fallowed is too fine. That the furrows run together when ploughed for sowing to such an extent, that it is difficult to get the seed covered a proper depth, and the tender places are therefore exposed to the severe action of the frost during the ensuing winter and spring, when if it is not destroyed altogether, it is kept back several weeks. The grass and weeds taking advantage of this backwardness, the wheat is unable to recover its original vigor, even though