

they did, though their malt drink is admittedly inferior to that of the Dominion. One cause of this inferiority is the inferiority of their barley to the Canadian. We have in the columns of this journal ere now directed the attention of our readers to the higher price paid in American markets for Canadian barley than that of their own raising. Our barley they must have, despite of prohibitory tariffs and higher prices. So desirous are they for our continued cultivation of this coveted grain, and for our further improvement in its cultivation that it has been made the subject of special premiums at the International Exhibition. In addition to the prizes given for barley by the Centennial Commission, the American Malsters Committee have arranged for a competitive exhibition of barley of this year's growth, in which they offer a prize of seventy dollars in gold for Canadian barley; forty-five for the best barley grown in Ontario, and twenty-five for the best grown in Quebec. These prizes are offered to induce our farmers to take a still greater interest in the cultivation of the cereal, and the selection of the very best qualities for seed. We hope the spirit of emulation, increased by the competition, will have the desired effect, and that the Malsters' Committee will find offered to them for their purchase, barley of a quality even superior to any we have yet grown or exported. The full capabilities of Canadian soil and climate, and Canadian agriculturists have yet to be developed.

The crop of barley has this year been light, but it has been an exceptional season. Owing to the unfavorable weather it was late sown. This and the rapidity of the ripening of the grain accounts for the want of the usual plumpness in the grain and number of quarters to the acre. But we are not discouraged. We have succeeded before and we will try, try again. Such barley as we can grow is sure to find a ready market and remunerative prices.

#### Disease of Wheat—Smut.

It is often necessary for agricultural writers to be guilty of repetition. So often is an article read, laid aside and then forgotten, unless there exists at that time a necessity for the reader to put the lesson in practice, that in this science, as in others, we need repetition to aid our memory. Add to this that every year adds many members to our list of readers, and it will be admitted that if we betimes return to a subject treated of before, it is not without good and sufficient reasons.

Smut, it is generally known, is a fungus, and as such a vegetable possessed of vegetable life. Destroy this vitality and you destroy its power of reproduction. On this basis are founded the various methods proposed for preventing the great injury it would cause if left uninterrupted to draw its nutriment from the filling and maturing grain. This question is one of great importance now, as we may sow the seed of smut with our seeds of wheat. If it be not killed before being sown, it will spring up with the young plant, grow with the flower bud, and finally occupy the whole interior of the grain. It has been said that a grain of wheat contains many millions of sporae, each sporae the germ of life.

Different remedies have been tried for the destruction of this fungus, some of them in many instances thoroughly efficacious, wholly destroying the vitality of the spores, without in the least injuring the germinating property of the wheat. The following remedy has been highly recommended: Make a strong solution of sulphate of soda (Glanber's salts); steep the seed wheat in this solution, and dry it off with powdered quicklime, the effect of which is to decompose the sulphate of

soda, the sulphuric acid combining with the lime to make sulphate of lime or gypsum, while the caustic soda is left behind to destroy the spores of the parasite.

A distinguished Scotch agriculturist, in regard to pickling seed as a preventive of smut, says:—"I have long been of opinion that ball-smut is a fungus propagated by adhering to the seed, and unless this fungus is destroyed before being sown all the grains infected by it will be sure to produce diseased ears. Smut is of two kinds. In one of them the smut or black powder flies or wastes away before the sound wheat becomes ripe, while in the other the powder is enclosed in a skin frequently strong enough to remain unbroken when passing through the threshing machine. The larger number of the balls, however, do get broken, the powder discoloring the sample, giving it a disagreeable smell and a peculiar oily feeling. It is this variety which is destroyed by pickling. The other appears to be propagated in some other way; at least, as yet no remedy has been found for checking it. Many years ago I rubbed smut balls among clean wheat, then pickled part, and sowed both. The result was the pickled seed produced a healthy crop, while of the unpickled portion there was hardly one sound ear. I have again and again seen the sowing of fields finished with unpickled seed tell to the spot where the dressed and undressed seed met. Old wheat should not be pickled, as its vitality will be sometimes totally destroyed by it, and the fungus itself seems incapable of growth when upward of twelve months old. I am far from saying that ball invariably follows when undressed wheat is used for seed, as by a careful selection of seed this may be avoided for years. But the little trouble and expense saved by not pickling seed is trifling indeed in comparison to the security given. I have tried pickling barley for blackheads, where the powder blows off before the grain is ripe, but, as in wheat, without success. Still, I think it is worthy of further trial, as it has appeared to me for the last two or three years that many of the blackheads in both oats and barley are more nearly allied than formerly to the true ball in wheat. I should like to see experiments made by steeping grain different lengths of time in sea water, or in water salted to the strength of swimming an egg. This is said to be a remedy against mildew and rust in warm climates, and possibly it may prove equally efficacious in Scotland."

Our own practice has been one practiced from time immemorial. It is as follows:—Make a strong pickle—strong enough to float an egg; in it steep the wheat for some hours—long enough to kill the spores of the fungus, but not so long as to injure the vitality of the wheat. Then spread the wheat on the barn floor and dry it, as in the case of other remedies, with the powdered quicklime. We never knew this remedy to fail in preventing the growth of smut. Instead of sulphate of soda, or brine, blue vitrol is often used for steeping wheat. We believe it is now more generally used than any other remedy.

#### Nova Scotia Provincial Exhibition.

The Secretary of the Provincial Exhibition has published the General Regulations and Prize List for the exhibition to be held at Truro in October next, and the Nova Scotians are already bestirring themselves, hoping to make it equal to some of those more favorably situated. The province, though not equal to Ontario in her climate or soil, has been making considerable progress in agriculture, and in some productions rivals the most favored parts of the Dominion. This is especially the case with oats and potatoes. The Exhibition is not to be limited to agricultural productions we believe. It is to comprise horses, cattle, sheep, swine, poultry, roots and vegetables, grain and field seeds, grain manufactures, &c.; dairy products, woollen manufactures and straw goods; agricultural implements and machines; fruits, ornamental plants and flowers. In Cape Breton, the part of the Province generally thought the most backward in agricultural advancement, they are entering heartily into the project. A splendid opportunity,

they say, is now offered them to exhibit samples of the excellent fruit and vegetables which are grown on Cape Breton and so little known outside the Island. Cape Breton, in mines and minerals, the *Sun* of Truro admits, excels any part of the Province, and if her agriculturists bear away the prizes from the Provincial exhibition, she will occupy an enviable position among the maritime aspirants for agricultural honors.

#### Orchard and Garden.—No. 7. HINTS FOR SEPTEMBER, BY H. ORTL.

On examining our trees, nothing looks so bad as the appearance of dead limbs, blighted tips, suckers, &c. These at once should be removed as well as the fire blight on the pear and black knot in the plum, their remaining will do no good, offering only harbors and hiding places for all kinds of vermin, while their removal will be a benefit to the tree and will leave a healthy appearance with the orchard. Be careful to burn all your trimmings or dispose of them in some manner as not to leave them lying about in heaps or otherwise—as eyesores and places for mice to congregate and breed only to sally out when other food has been exhausted to girdle and destroy your trees.

Old orchards might be renovated and get a new lease of life by having quantities of lime, ashes, bone dust, old manure, or any kind of rubbish and decaying matter that may be thickly spread under the trees and thoroughly and deeply ploughed in. This will restore in a great measure the plant food and substance for making new wood, and consequently a renewal of former productiveness. The best way we think to renew an old orchard, however, is by planting a new one, planting such varieties as are now known to be the most useful for every purpose and the kinds known to succeed in your locality. The average profitable usefulness of an orchard is about 25 years, with good care longer, which means proper cultivation, good soil, common sense, pruning and hardy varieties.

Hardy varieties of apples. The following varieties we would advise for planting on a large scale, varying the number of trees of each variety according to the ideas intended to be carried out whether for foreign shipment or home markets:—Early Harvest, Red Astracan, and Duchess of Oldenburg, for early ones; Maiden's Blush, Gravenstein, St. Lawrence, Colvert, and Alexander, for fall varieties, and Golden Russet, Snow, R. I. Greening, Baldwin, N. Spy, King J. Co., Blenheim, Orange, Ribston and Fall or Holland Pippin, Swaar and Hubb. Nonsuch for winter keeping and shipping qualities.

The Lady apple and Swazie Pomme Grise commands high prices as dessert apples in old country and American markets. We have found the Swaar to excel all other kinds we have tested in its keeping qualities.

Picking or gathering the fruit is very often done in a careless manner, in fact to much care cannot be exercised so as not to bruise the fruit or injure the fruit buds upon which depends future crops—to guard in a great measure against this you should try the fruit in different parts of the tree by turning them one way or the other, if they quit the tree easily it is a sign of maturity and time to gather them. According as the fruit is picked it should be carried into some convenient dry place and allowed to lay in heaps for about two weeks or so in order to let them sweat, which will make them keep longer, and render them much better for use than if put up finally as soon as pulled.

Exhibiting—As the season for exhibitions is rapidly approaching everyone who grows fruit should exhibit. You will be sure to reap some benefit from so doing, in learning varieties, or