preferential tariff Canada must devise free winter ports and an efficient steamer service.

[Note.—Halifax and St. John, two of the safest harbors in the world, are open all the year round, and the former is 600 miles nearer England than is New York harbor.—Editor.]

To farmers, the year that has passed into limbo has been one of the very worst on record. From every quarter comes the cry of harvests ruined by rains. In many parts of England and Scotland, the harvest operations were only finished the week before Christmas, which is the very latest within memory. The wheat area of the country has declined by 45,000 acres, while the estimated produce is nearly nine million bushels less than last year, and barley about 150,000 bushels less. Oats, though sown on an increase of 80,000 acres, show a decrease of 5,700,000 bushels on last year. Potatoes, too, were worse than last year. Disease was rampant, and the occurrence of this pest has led to increased attention being paid to the development and growth of new varieties. In this connection, on Wednesday, 30th ulto., it is interesting to note that the initial steps for the founding of a National Potato Society were taken.

FARM.

Destroying Wheat Smut.

Enquiries have been received of late asking for the best method of destroying smut in wheat. It is, perhaps, a little early yet for farmers to undertake this work, but perhaps none too early to give the subject thorough consideration. There are two methods commonly used; one known as the bluestone and the other the formalin treatment, and both have been found fairly effective if properly carried out.

For the former dissolve one pound of bluestone in from three to five gallons of water, the amount depending upon the percentage of smut in the wheat. In dissolving this material, a good plan is to place it in an old sack and suspend it in a barrel just below the surface of the water, the amount of which has been previously measured. In this way the bluestone solution sinks to the bottom and allows the clear water to come in contact with the undissolved material.

With a barrel two-thirds full of this solution, then put the wheat in a close sack and immerse it, moving it up and down until it has become thoroughly wet, after which it should be withdrawn and hung over another barrel placed close by to catch the drippings, which may be used again. When the dripping is over, spread out the wheat on a smooth surface to dry. The idea in having it placed on a smooth surface is that it can be quickly and easily filled with a shovel.

The formalin method is used by adding one pound of formalin, which may be obtained at any drug store, to from 45 to 50 gallons of water. The wheat should be spread out two or three inches thick on the floor and sprinkled with this solution until every part is moistened. The proper time to do this work is really just before seeding, but any one who has wheat in any way affected should have the material on hand and his mind made up in good time to carry out the work, as one bushel per acre lost through smut would, on a large acreage, amount to considerable financial loss, as will readily be seen.

Ontario Millers Dissatisfied.

Speaking in Montreal of the necessity of having the grain standards changed, F. W. Thompson, of the Ogilvie Milling Co., reported the condition in Ontario as follows:

The dissatisfaction among Ontario millers in regard to the confusion and uncertainty regarding the matter of standards has increased, if anything, since the first of the year. One of them used some very strong language to me in discussing the matter. "It is well known," said he, "that Ontario flour ground from the last wheat crop is superior to that of the year previous, the Ontario wheat crop of 1902 being very inferior. A considerable proportion of it was sprouted and otherwise damaged, hence the importance of having the standards changed in order to more fairly represent the better qualities of new crop Ontario flour. Owing also to the number of the different grades of winter wheat flour, millers and dealers in Ontario, Quebec, the Lower Provinces and Newfoundland consider it absolutely necessary to have some fair standard fixed every year in October. I can't understand why the Government is throwing obstacles in the way, so much so in event to avoid the confusion and unsettling now existent, it should announce without any further delay, its definite and final conclusion in the matter. Last year after waiting [illegible] found it necessary to fix the standard [illegible] inconvenience and loss to the trade."

The Oka Agricultural School.

"Farmer's Advocate" readers will be interested in knowing something of this "out-of-the-way" establishment, under the care and direction of the Trappist Fathers, situated about forty miles from Montreal, on the north shore of the Ottawa river, in Two Mountains County. The school and farm are one short league from the little Indian village of Oka, in the midst of very picturesque scenery.

The school itself is a three-story building, provided with all modern accommodations, and capable of containing one hundred pupils. It is surrounded by orchards, vineyards and large maple groves, where nearly 2,000 trees are tapped yearly. About 450 acres of different kinds of soil are under culture, of which 300 are in meadows, field culture, gardens, orchards and nurseries, etc., and 150 in pasture and bush land. The orchard covers 60 acres, where at least 100 species of apple trees are to be found; also different varieties of pears, plums, cherries and smaller fruit. The nursery is about 25 acres, the vineyard 8 acres.

Garden and orchard products are intended especially for the market, but the products of field culture are consumed on the premises by a large and varied stock, of which over 100 are Ayrshire, Canadian, Jersey and Holstein cows. This department in particular is given special attention, the milk of each cow being weighed every morning, and often tested; an accurate account is also kept of what each animal eats and costs daily, so that no parasite is kept in the herd. Any cow not forwarding at least 6,000 pounds of milk in the year is done away with. Several of these cows give from 12,000 to 13,000 pounds of milk; one Holstein is yearly credited with about 17,000.

Feeding, as in every other department, is done on scientific principles, still the food given is not extra costly. The secret all lies in the proportioning and also in the preparation of elements furnished as provender. This year 40 acres of corn silage will be fed in the stables. This corn is all hand sown. Not one drop of the liquid part of the manure is lost; all is put on the manure pile, or directly carried to the garden, meadows, etc.

The piggery contains from 200 to 250 animals—Berkshires, Yorkshires, Tamworths and Chester Whites. Special care is given to bacon breeds. The department where hams and bacon were cured and prepared for the market is not working just now. Agricultural clubs and societies buy, as soon as ready to be sold, the surplus pigs.

Horses, about 25 in number, are mostly Percherons. The sheep are Leicesters and Shropshires. All these animals are registered.

The henhouse is a large three-story building, where numerous Plymouth Rocks and White Leghorns, ducks, geese, turkeys, pigeons, and even rabbits, devour the rubbish of the house, garden and farm—waste vegetables, meat, bones, blood from the slaughter-house, etc.; all this is fed to the poultry.

The farm is provided with all kinds of shops, such as blacksmith's, tinsmith's, carpenter and joiner's, shoemaker's and harnessmaker's; also grist and circular-saw mill, with planer, etc., where the products taken from a couple of hundred acres of forest are converted into timber, etc. There are also other shops of less importance, where, in winter time especially, the students can learn useful petty trades and industries. At school the boys have at least two hours of class a day, a few hours of study, and another few hours of manual training in the different departments, under the care of their respective teachers. Tuition is given partly by the Trappist Fathers and Brothers, partly by lay professors. Field culture, stock-raising, garden, orchard and bee culture; butter, cheese, sugar, wine and cider making; bush-land clearing, fruit and vegetable canning, etc., are taught theoretically and practically. A short distance from the school is the main institution, the Trappist Monastery, where about one hundred monks, voluntarily doomed to very strict silence and rule, live by their manual labor.

Strangers, rich or poor, and of all creeds, are kindly received by the Trappist friars, who always invite them to take a frugal but substantial meal, consisting of products of the monks' industry — homemade bread, butter, cheese, honey, vegetables, fruits, etc.

Numerous tourists, in summer time especially, visit this interesting establishment. The Lac-des-Deux-Montagnes and the surrounding mountains are quite fine, viewed from the eminence on which the school is built; the maple grove alongside of the school conceals a pond, on account of which many a pupil, it is said, has had bad marks registered, for catching trout during duty hours in the fall. The unfortunate student is not free even in winter time from this species of temptation, for crossing the same bush going to his work, his attention is often diverted by the rise of a partridge or the springing of a hare, which are there still plentiful enough, in spite of all the guns and snares of the French students.

Farm Implements.

Senator Chas. H. Frost, of Smith's Falls, Ont., contributes to the Queen's (University) Quarterly for January an interesting chapter on "Farm tools and their manufacture." He points out that the outstanding improvement in modern farming has been the employment of labor and time-saving machinery, while in too many or in most cases methods of tilling the soil have improved but little over the ways of our forefathers. This we judge was in the nature of things. As the area of our land under cultivation increased, crops became varied and more extended, and this demanded more and better machinery. We must also bear in mind that the real principles of tillage and plant growth remain the same always, but most men are naturally conservative, and failing to heed the changes wrought by age in soil and other conditions, have not been as quick to vary the application of those principles as the manufacturer was to take advantage of the need for improved and speedier implements. Senator Frost estimates that double the work can now be accomplished with the same number of men and horses compared with 50 years ago.

The Senator discusses at length the plow, which, since the days of Abraham, has developed from a mere point to stir up the ground, into a screw or wedge to lift up and turn over the soil. He points out that some soils require to be turned over completely, and broken or pulverized at the same time, while others, such as soft clay or moist land, should be turned so that the furrows overlap. In this way the air can soften and break up the clay, and the drying of moist soil is hastened. No plow will do the two kinds of work satisfactorily with the same mouldboard and point. That the shape and curve of the mouldboard are important features for efficient service is shown by the great variety of plows in use, one manufacturer alone claiming to make no less than 850 different forms!

Despite all this, are we improving in our methods of plowing? There is a suspicion in many quarters that some modern teachings in regard to cultivation are not working out well in practice. We were reminded of this the other day by an old subscriber who had been reading the "Farmer's Advocate" for 25 or 30 years, that in those good old days, "We were TAUGHT TO PLOW, NOT ROOT." We are bound to confess that in this breathless age there is altogether too much mere skimming and rooting, as our good friend describes it. The "Farmer's Advocate" is inclined to think that our Farmers' Institutes might do worse than take up all over the country the old idea of plowing matches, in which the theory could be discussed and the practice demonstrated of good plowing, prizes being awarded, as is still done in a few localities, to the successful contestants.

The Senator gives us an excellent idea of the infinite care and enterprise displayed in every step of modern manufacture, and he shows the necessity for it when he mentions the fact that there are almost a thousand separate parts in a binder, all put together to stand the tremendous strain of work in the field, and the binding apparatus timed to perform each of its several operations at the exact instant. The manufacturer plans to meet all the varying conditions of agriculture, and to improve his implements in speed and capacity. Senator Frost predicts that in order to overcome the scarcity of farm help the machine that cuts and threshes grain at the same time will eventually supplant the binder. In addition to hard usage, many farmers are neglectful of their implements to a wasteful extent, and Senator Frost condemns also the wasteful systems of long credits. He also observes—and it is well worth bearing in mind by our people—that where agriculture and manufacture flourish together there is a land of law-abiding and highly civilized people.

Before concluding his paper he mentions the fact that Canadian implements are harvesting crops in every corner of the worldwide British Empire, in Russia and in the Argentine Republic. The "Farmer's Advocate" would also add, is it not a remarkable fact to the honor of our Canadian manufacturers that they alone, out of all the Empire, including the wonderful motherland, have been thus able to invade the world. Who ever heard of British or Australian binders appearing on wheat fields of British North America?

A Satisfactory Silo.

Mr. Hector MacIntyre, of Middlesex County, Ontario, reports to us that his cement silo, which he built last summer, is giving splendid satisfaction. It is circular in shape, twelve and one-half feet in diameter, and thirty feet high. The wall is eighteen inches thick at the bottom, and eight at the top. Steel curbs were used in building the walls. Portland cement was used in the proportion of twelve to one. The contractor furnished all materials, including a shingle cottage roof, and did all the work, except the horse labor, required, for a fee of $165.