

Battling with Potato Bugs.

Haying is now being vigorously pushed in all parts of the Maritime Provinces. The hay crop is good. Taking the Province as a whole, it is above an average crop. This will mean a great deal to Maritime farmers. There is more clover showing everywhere in the hay crop this year than usual. This is no doubt somewhat due to more clover seed of better quality being sown last year than formerly; but the winter was also largely responsible. The heavy snowfall favored the young clover plants, which were none too vigorous after the dry summer, protecting them so that not nearly so many were killed by being thrown out, or the roots injured by the thawing and freezing of the ground, which so often happens.

The potato bug is later appearing this season than it generally is. However, it is as plentiful as usual. As is generally the case, much larger quantities of Paris green are being used than is actually necessary if the work is properly done at the right time. This pest is with us every year, and it would well pay farmers to have some sort of a spraying apparatus for applying the poison. One pound of Paris green to 150 gallons of water is plenty strong if rightly put on at the proper time. The vines should be sprayed as soon as the first bugs hatch out. The solution should be kept thoroughly agitated to get an even distribution of the poison, and the finer the spray the better the work can be done.

The leaf of the potato is very easily injured by Paris green. I have noticed fields of potatoes badly scorched. This injury to the foliage must necessarily reduce the yield of tubers. Much of the scorching noticed can be overcome by the addition of one pound of rock lime made into whitewash to the 150 gallons of Paris green water. This burning of the foliage is due to free arsenious oxide, which lime renders harmless.

Some recent investigations go to show that this scorching of the foliage may result from the Paris green having been poorly made; i. e., the component parts are loosely held together, and when such greens come into contact with water, especially water containing carbon dioxide, the arsenious oxide is slowly set free. It will be seen, therefore, that the action of rain, and especially dew, both of which contain carbon dioxide, would have a tendency to continually liberate the element in Paris green that is injurious to foliage, and, consequently, when a large quantity of Paris green is used the burning of the foliage would be still more increased.

It will be noticed that the results from our trial plots of potatoes, where Paris green with lime, as stated above, and Paris green with Bordeaux were compared, that in 1903 the yield was 20 bushels per acre, and in 1904, 37 bushels per acre, in favor of Bordeaux, and yet at the same time there was no blight during these two years on these plots. It is possible, therefore, that the increase in yield was due to the lime adhering to the foliage, in the form of Bordeaux, being able to fix the injurious arsenious oxide, whereas in the other plots the Paris green, as it became broken down by the action of the weather, injured the foliage and resulted in a decrease of yield.

Results obtained at various experiment stations in Canada and the United States go to show that the use of Bordeaux and Paris green on potatoes pays. The results are not so striking when blight is not prevalent, but as stated above, the increase in yield paid well for the expense of applying the Bordeaux.

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Stave Silos.

In a bulletin on the construction of silos, recently to hand from Illinois Experiment Station, some rather puerile objections are raised against the round stave silo. For instance, we are told that the staves shrink during dry weather when the silo is empty, and unless the hoops are tightened there is a possibility of the structure being rocked or blown over, and that if the hoops are tightened when dry there is danger of bursting when the silo is again filled. An example is cited of a silo on which half the hoops burst the morning after filling.

While printing the above for its value as a warning, we do not consider the facts as of serious importance, since a little ordinary care on the farmer's part is sufficient to prevent any such catastrophe. Again, an illustration is presented, showing how the hoops had dropped on one stave silo as a result of the staves shrinking. One would think any schoolboy would know enough to drive a few staples or nails to hold the bands in place. The bulletin contains some practical information, but such things as those noted seem to detract from the character of a bulletin emanating from so pretentious an institution.

The colored illustrations in the August Canadian Magazine are fully equal to anything which this enterprising publication has previously produced. The reproductions of Turner's pictures are pleasing. The illustrated article on Malta will find admirers, as we seldom hear from this fortified British outpost. The fiction in this number is exceptionally good, and every story is by a native writer. In fact, this whole number is packed full of interesting and delightful features, such as the reader can secure in none of the U. S. periodicals which are found on the newsdealers' counters in this country.

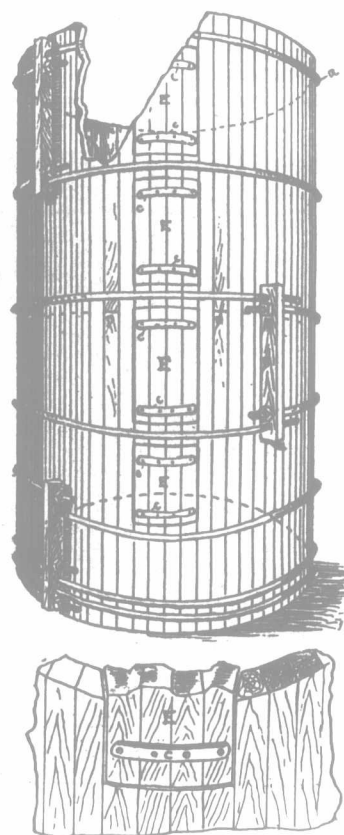
Reader Wants to Build Silo.

A new subscriber in Alberta writes as follows: "Kindly tell me how to build a silo, and how to make the ensilage?"

Ans.—A few years ago, before cement was generally introduced, very elaborate wooden silos were built, but of late the wooden-stave and cement silos have superseded all others, with rare exceptions. The round stave silo has several features to commend it. It is easily built where lumber can be had; it is comparatively cheap, and it serves to tide a skeptical person over the experimental stage of ensilage feeding. On the other hand, they are purely temporary, the juices of the corn causing rot in the wood, and unless carefully built and well anchored, they require considerable care to keep them intact during summer. For these reasons the permanent concrete article is fast coming into general use.

In building a silo, it should be borne in mind that the object of the silo is to preserve the contents from the air, and to this end the foundations should be solid and the walls as close as possible. In stave silos the closeness of the walls is secured by the moisture of the silage swelling the timber, thus closing all cracks. In this connection it is well to finish the inside of a cement silo with a smooth coat of cement, either plaster or whitewash, to exclude the air and to obviate friction as the ensilage settles.

Round silos, whether of wood or cement, are now almost exclusively built. They have the advantage of containing the largest possible amount of contents for the walls employed, and as the pressure is evenly distributed over each part of the wall, they are not subjected to ex-



A Stave or Tub Silo, showing also a Sectional View.

cessive strain at any one point, as in the square-shaped article. An effort should be made in building a silo to have it as high as practicable, to ensure a greater pressure on and closer packing of the ensilage, as this also tends to exclude the air, and ensures better quality of feed. At the same time, it should not be so high as to look like a walking-stick. A good proportion is twelve feet in diameter and twenty-four feet high.

In connection with building a silo, we have a communication from an old reader in Ontario, where silos are in general use, and are highly esteemed. He says, concerning his silos:

"Some years ago we built a tub silo, which chanced to be the first of its kind for miles around, and interested parties came some distance to see and enquire of its construction and efficiency. We always argued that we did not believe it possible to build any other form of silo, of equal efficiency, with anything like the economy at first cost.

"The first silo, however, was not without its faults, chief of which was that it was 16 feet in diameters, which I found quite too large for warm-weather feeding. Desiring more silage capacity, yet less surface exposure, I took down the old structure, and set it up again, reduced to eleven feet in diameter, for a summer silo, which is a very important adjunct to any well-conducted dairy farm. With the remaining staves of the old silo I constructed two hoops, three feet high, between which to carry on construction operations for a round cement concrete silo, thirteen and one-half feet inside diameter, and thirty feet high.

"Our silos are started from four to five feet below the feed-room surface, in naturally open gravel subsoil. The walls begin at the bottom, about thirteen inches thick, and finish at the top about seven inches, the batter all on the outside.

"The outlet doors are formed where desired by placing a frame which, when driven out of the wall, leaves a shoulder of two inches all around the inside of it, against which to place the doors. From the ground level up, about every twelve or fourteen inches, the walls have imbedded within them, near their outer surface, an iron chain, made by hooking together the ends of $\frac{1}{2}$ -inch half-round, three-foot-long irons, bought for 30 cents per hundred pounds at the local metal shingle factory.

"The hoops, when slackened from the wall, were raised by means of poles from the ground, then tightened with about six inches of lap on the wall, and properly spread at the top with sticks. Over the top of the rings or hoops lay three or four stiff, wide planks, which constitute our scaffold to work from.

"The gravel was hauled onto the barn floor from the pit near by, and there mixed in proportion of about seven and a half to one of rock cement, then with the wheelbarrow taken to scaffold on top of the silo, put into place and firmed down, some field stone being used with it.

"When it became necessary to raise the material, we placed a long pole beside the silo, with capstan across the top, over which a rope was run, by means of which, with a horse, the wheelbarrow and its load could be run up and turned in onto the scaffolding.

"With our rings, two feet of a rise each day could be made by three men, with time enough to get the gravel from the pit. Thus, in twelve days thirty feet in height is built, at a cost for labor on the farm well within the fifty-dollar mark. The cement (close upon forty barrels) cost us nigh another fifty dollars. Thus, about one hundred dollars in labor and material gives us a permanent, satisfactory silo, without a roof, which, though desirable, is not really necessary. I purpose roofing my silos, and for this purpose put irons into the last course of cement, with ends projecting out on top to fasten roof to. The manufacturers of the cement and the "Farmer's Advocate" supplied the technical instruction for carrying on the work."

In Alberta, our correspondent's neighborhood, we presume both wood and cement can be had with ordinary convenience. If it is decided to make a round tub silo, we would suggest that two-inch stuff, about six or eight inches wide, be used, and if it cannot be had the full length desired, break joints as much as possible. A silo ten or eleven feet in diameter and from twenty-four to twenty-eight feet high, should answer very well. In the long run, of course, it will be cheaper to build of concrete, as described above, but as yet the growing of ensilage crops is not well established, and may not prove practicable in all districts, so that possibly a cheaper silo would be best at first.

Look Out for Late Blight and Rot.

It is to be hoped potato-growers will not neglect spraying this season to prevent late blight and rot. As has been pointed out earlier in the season, later blight of the vines and rot of the tubers are both caused by the same fungus. The spores ripen upon the leaves, fall upon the ground and are washed through the soil upon the tubers by rains. The remedy for both troubles is, therefore, the same, viz., Bordeaux mixture, sprayed upon the vines in early August, and repeated if necessary, so as to keep the foliage coated until late in the season.

Lest it may not be clear in the minds of all, it may be remarked here that there are two distinct potato blights, caused by two different fungi. The first is the early blight, which attacks the vines only, and affects the tuber, indirectly, by injuring the foliage. The second, or late blight, does a double damage, by decreasing the yield and quality of the tubers, and then infecting them with the spores which cause rot. For these reasons it should be specially guarded against by thorough spraying, as mentioned above. Authorities fear an outbreak of rot this season, and wise growers will take no chances.

Low Trucks and Short-turning Rack.

Three years ago I had an old wagon in good repair, except wheels. I got an agent to send to Toronto for a set of low, handy truck wheels; sent measure of arms, and got a splendid fit—front wheels 26 inches high, hind wheels 30 inches. I then made a flat rack myself: Sills cedar, 4 in. by 7 in., 17 feet long; four cross-pieces 3 in. by 3 in., 8 ft. long, hard wood, and two good boards along side. I now have a rack 16 ft. long and 8 feet wide, with a ladder attached to each end, and the whole completed is just about three feet from ground, having wheels of this size, and put 2-inch piece on top of front bolster; the wheels will go right in below and turn as short as the reach will allow.

A. G.