

Crimson Clover.

Through the kindness of Dr. A. T. Neale, director of Delaware State Experiment Station, I am able to present your readers with some information regarding Crimson clover that I am sure will prove of interest. Dr. Neale and his able corps of assistants have given this clover considerable attention, and have brought out much valuable information.

This clover grows wild in Southern Switzerland and Northern Italy. It was introduced into France about 1830, and is so well liked and so generally used there that the name of French clover is often applied to it. Seed from five different varieties of this clover is offered on the European markets.

These varieties vary in color of blossom and season of blooming, and also in hardiness. The plant is noted for stooling, for deep rooting and for rapid growth. Fifty flower stalks to a single root have been repeatedly noticed, and seventy stalks to one root have been reported. Roots have been followed more than four feet down into a heavy clay so hard that spades had but little effect. The plots at the experiment station made an extremely vigorous growth. During the fall and winter the ground was not only concealed but completely protected against freezing; for with a temperature approximately 14° above zero the soil was found soft and free from frost directly under the clover, while that unprotected was found frozen hard. The plants remained green, and at no time during the winter did they show any indications of suffering from cold. On May 12, the crop was in full bloom. It was then cut and weighed, then plowed under as a green manuring. The maximum yield was 13 tons and 400 pounds per acre. A chemical analysis showed that this amount of green clover per acre was equal to two tons and 600 pounds of very dry hay; also that the 13 tons of green clover contained 115 pounds of nitrogen, 131 pounds potash and 35 pounds phosphoric acid. To secure this plant food in form of fertilizer at market price would have cost \$24. Of this amount \$17, or 70 per cent. of the total, is credited to nitrogen, that element which clover can secure from the air, while 30 per cent. is credited to phosphoric acid and to potash, elements which can only be secured from the soil.

Mr. E. H. Bancroft, one of the most intelligent and successful farmers of Kent county, says of this clover: "It is first-class for soiling, and for ensilage there seems to be no limit to its usefulness. Its season of growth and maturity enables us to fill the silo in May and provide a supply of the best ensilage, and the supply may readily be made adequate to the requirements of the entire year. To plow down for green manuring, no other plant of the same season has yet become known here that can approach it in value, for cheapness of production, for quantity of crop, and for fertilizing qualities. Taking it all in all, it certainly impresses those who know it best as offering possibilities to the agriculture of a vast portion of our country never before anticipated."

Mr. Jacob G. Brown, a veteran fruit grower of Central Delaware, says: I have known this plant during a period of about five years, and each year increase my estimation of it as a forage crop. There is no other adapted to this soil and climate that can in any way equal it. It is the most easily seeded, will grow on the poorest soil, and under conditions when other grasses would utterly fail will produce the largest yields, either for use in the silo or for hay; in quality not excelled. It is the most wonderful restorer of poor or worn out soil in existence. I verily believe that with it land can be brought into the highest state of fertility without the application of a dollar's worth of manure."

The Wynkoop Bros., of Milford, have raised this clover six years, and expect next year to have nearly ninety acres of it. Mr. P. P. Wynkoop says: "Scarlet clover is a first-class forage plant, for use either as hay, as ensilage, or for soiling; as a crop to turn under for green manure, its value is very great."

Upwards of four hundred and fifty bushels of home-grown seed have found an eager market in this little State alone during the past month. This amount of seed if properly used is sufficient to cover an area of more than three thousand acres. This will give some idea of its popularity where best known. E. G. PACKARD.

We have procured a small quantity of the seed of this clover, and will have it sown in different parts of Ontario, and will report results in due time. In the meantime, if any of our subscribers have had any experience with this plant, we will deem it a favor if they will report to us. The seeds are larger than those of red clover, and of a light buff color generally.

Grain Growing in the Eastern Townships.

BY W. A. HALE, SHERBROOKE, P. Q.

Simply because nature has so richly endowed the eastern townships generally with all the requisites so necessary to successful dairy farming should not be sufficient excuse for the sadly neglected state in which we find so many other important branches of our agricultural business. Speaking merely from my own impression, I should say that from seventy-five to eighty per cent. of the untimbered land of the eastern townships is devoted to hay and pasture. Our farming seems literally to have "gone to grass," and we to draw upon other provinces for a large proportion of our grain supply. We seem to be but now emerging from the darkness of the original forests which we have been so needlessly destroying, and upon the products of which we for so many years have been depending somewhat as the profligate sons of the old English county families do upon the patriarchal oaks of the ancestral parks, wherewith to pay their turf and other debts. We are indeed sadly in want of a more extended circulation of some of our best agricultural journals, as a means of encouraging a more intelligent and enterprising system of working our naturally fertile lands, and showing us how, by a proper course of rotation, we can without being exporters at least grow enough of the ordinary staple grains to support the lives of those living within our borders. Taking the city of Sherbrooke for example, a town of about 12,000 inhabitants, and the centre of a large farming section of country, the number of bushels of the various kinds of grains which are annually brought in and retailed to the towns people and farmers within driving distances of the city is appalling. In the year 1889 there were brought into the city for the retail trade, principally from Ontario:—

Wheat.....	180,000 bush. or their equivalent in flour.....	value \$175,000
Oats.....	175,000 bush.....	55,000
Barley, feeding, 135,000 ".....		67,500
malting, 150,000 ".....		75,000
Beans.....	10,000 ".....	17,500
Peas.....	5,000 ".....	4,000
Corn.....	125,000 ".....	75,000
Total.....		\$470,000

Our principal products of export (outside those from our timber lands) are, in the order of their importance: Butter, cheese, beef and lambs. Hay was largely exported to the United States until the McKinley bill happily drove our people into feeding it to dairy cattle, and with beneficial results, but for a large proportion of our cereals we have still to draw upon Ontario and the Northwest. In order to satisfy myself as to what the favorite varieties of our common grains really were, I called upon our leading seedsmen to enquire what varieties of the different cereals they were asked for at seed time, and, as I expected, I was referred to the grain dealers. These latter reported that very little distinction was made, that in oats, for instance, the standard seed asked for was "No. 1. Ontario," and as a cheaper sort "No. 2. Ontario." I fancy I see the progressive Ontario farmer smile who keenly compares the yields one with another of his favorite Prize Clusters, Welcomes, Banners and Black Tartarians, and I can forgive him for doing so. These same "Ontario No. one's" sold here last April for seventy cents a bushel, and their produce fetched but thirty cents when harvested, while the best Welcomes could be laid down here from Toronto for fifty cents a bushel, and would outyield the Ontario's by at least five bushels an acre. There is room for much improvement here, and this increased yield per acre is of far more importance to the country generally, and to the farmer in particular, than one is at first likely to admit. I see by the report of Professor Saunders for 1890 that an increase of one bushel per acre and one

pound per bushel in spring and winter wheats, oats and barley, would give an increased value for Ontario alone of over three and a-half million dollars. I could forgive any section of country for not exporting grain if it only grew enough for its own use, but to be an importer of anything, save Indian corn or seed grain for a change, is paying too high for one's nitrogen. Some years ago, as an experiment, I imported from Edinburgh, Hopetown, Sandy and Birtie, oats weighing from forty-two to forty-four pounds to the bushel, but with all the care that I and some of my neighbors could give them we were unable to ripen sufficiently for seed, and in two years they had entirely disappeared, and this I would suggest as the reason why the Black Tartarian oats reported by Professor Saunders as imported from Scotland did not give a better account of themselves. Probably acclimated seed would have given as good results as they usually do where tried in the townships, and were it not for the foolish prejudice which many have against them on account of their color, I believe they would to-day be as popular and productive an oat for all-round purposes as any that have yet been introduced. The Potato oat, once so highly thought of, has disappeared; its tendency to shell out when mowed with a scythe and its thick hull were against it. As long ago as 1850, the weevil so completely destroyed the wheat crops of the pioneer settlers of the eastern townships that the folly of ever attempting to grow it again became so firmly established that until of late years the experiment was looked upon as visionary, and even though success was the result the confidence so severely shaken in those days has not even yet been established, and many continue to do as of old, viz., to grow buckwheat enough to sell or exchange for what wheat flour they require.

The White Russian is more sought for than any other, unless it be Lost Nation, which, by the way, seems to be one and the same thing. The Ladoga has not held its own, not through any fault it may have, but probably from lack of interest in keeping up new and improved varieties. White Fyfe, though not quite so hardy as White Russian, is preferred by some as producing better flour. The old Red Chaff and Black Sea one seldom hears of now, and winter wheat has not been yet successfully grown. In barley very little six-rowed is grown, and of the two-rowed the name two-rowed is generally all the distinction required. The few who do discriminate prefer Beardless or the Chevalier. Of the latter I have grown as high as sixty-eight bushels an acre, and a small test of Carter's prize barley as issued by the government in 1890, though not measured, must have yielded at the rate of even more per acre. In buckwheat, of which a large quantity is grown in the province of Quebec, the Japanese has not proved as valuable as the original kinds already here, and last spring there was little or no seed asked for. The yellow or rough hulled has been the favorite for many years, but the white or smooth hulled is fast coming into favor. Its blossoms supply a superior quality and quantity of honey; it does not resow itself, as does the yellow in grain or grass the following spring; the flour is superior and the yield in most localities heavier. In peas the Golden Vine still leads the Prince Albert as a useful field pea, it boils better and its straw is of more value for stock. In field beans the White Marrowfat is more universally grown than the White Pea bean, and is largely used in lumber and mining camps.

Of ensilage corn, which is rapidly gaining ground in connection with winter dairying and stock raising, the Red Cob Ensilage grown in alternate rows with Compton's Early gives the most satisfaction of any plan so far tested. But as I have already hinted, we in the eastern townships have yet a deal to learn of the simple but successful method of grain growing as practised by the farmers of our sister province of Ontario. Things are not quite as defective in this respect as they once were, but still there is yet much room left for improvement, and to all who have not already done so I will close by advising them to apply for and read carefully Bulletin No. 8, issued by Prof. Saunders, from the Experimental Farm at Ottawa, in January, 1891, on the comparative results of early and late sown grains.