

MR. STEPHEN'S EASTERN TOWNSHIPS NOTES.

Since last writing the hay crop has been all stored, and harvesting is now well under way. We cannot estimate the hay crop at more than 75% of a crop, but it is of excellent quality, and the bulk housed in prime condition. A few late starters had broken weather to contend with, therefore their hay got more or less damaged. If we could point to one mistake made by many farmers, it was in commencing to cut a week too late; consequently, the last got too ripe before being cut, thereby losing much of its food value. Why our farmers will insist on making this mistake year after year I cannot understand. Hay is being marketed for about \$12 per ton for the best quality; several dollars a ton lower than sold for this time last year. We have good reason to believe there remains in farmers' hands, in the hay-growing sections, a considerable quantity of last year's hay still unsold, it being held for a higher price than could have been obtained last spring. This will assist in relieving the situation this season. It is not expected that hay will touch last year's prices, as it is universally a better crop than last year, therefore those who held last season will be losers. "Greed" generally gets its reward.

The grain crop will not be up to the average. The early-sown grain will be short in the straw and only fairly well headed, but contains a grain of fine quality; late-sown grain will give a larger return of straw, but the quality of the grain will be inferior to the early-sown. The period for filling has been blessed with just the right kind of weather, so it has not ripened too quickly. So far grain has been remarkably free from rust, and the straw will be nice and clean for feeding purposes, especially if cut on the green side. It will all be required for feed, consequently there will be a shortage for bedding. What will be utilized in its place will be a problem with many farmers not convenient to a sawmill where sawdust may be readily secured. Corn is the bumper crop this season. With an increased acreage of at least 30 per cent. it will relieve the feed situation very materially. The pastures, while they have been freshened by the occasional rains, have not recovered from the severe scorching of July. Nearly all dairymen provided a soiling crop, and thereby have maintained the milk flow. Concentrates have not been fed quite as extensively as in former years, largely on account of having the soiling crop, and also on account of high prices for millfeeds.

Creameries paid from 85c. to 90c. and cheeseries from 92c. to \$1 per cwt. for July milk. There is now a very noticeable shortage of milk in the Montreal market. As summer visitors begin at this season to return from summer outings, and times improve in the city, the demand for milk increases. This, coupled with a lessened milk flow peculiar to this time of the year, creates a shortage difficult to fill, which is often relieved by the cream shippers turning on to ship milk.

Dairy produce keeps at about the same price. Exporters are paying about all that the Old Country markets will warrant—in fact, our prices have almost been such that would leave a small profit to the exporter. Shipments in both butter and cheese are falling short of 1906 and 1907.

Potatoes and roots are making a steady improvement since August 1st, but do not promise even an average crop. Early apples are a full crop; fall varieties promise fair, but winter varieties will be far short of a full crop.

While 1908 will not give us as full crops as we have been accustomed to reap in former years, yet we will have a sufficiency to meet all our needs; a few may have to reduce their herds, but not so many as last season. On the whole, we have reason for gratitude, and if economy is practiced, the shortage will be only another lesson to be more provident, to husband our resources, conserve our soil fertility, and pay more attention to the care and improvement of our live stock.

W. F. S.

MANITOBA HORTICULTURAL EXHIBITION.

Many applications are pouring in for the prize-list for the Horticultural Exhibition, which will be held in Manitoba Hall, Winnipeg, on September 3rd, 4th and 5th. The prizes offered make a total of a little more than \$1,000, divided as follows: For vegetables, general, \$350; for best collection of vegetables displayed by any agricultural society or horticultural society in Manitoba, \$80; flowers, \$320; fruit, \$200; honey, \$50. This makes an exceedingly liberal schedule of prizes, and the competition should be keen.

Those interested should write to Prof. F. W. Broderick, Agricultural College, Winnipeg, asking for a copy of the prize list.

FALL EXHIBITIONS.

We will require a number of good circulation canvassers at all the leading fairs this fall, and would like to hear from any of our readers who have the time and ability to take hold of this work in earnest. Hustlers, whether men or capable boys, can earn big wages. A few wanted for Toronto Exhibition. Write at once for terms. Address, "The Farmer's Advocate," London, Ont.

In order to save their crops of squash, cucumbers and musk melons from destruction by blight, extensive gardeners have found it necessary to resort to spraying the vines with the Bordeaux mixture.

TEMISKAMING HEARD FROM ONCE MORE.

Editor "The Farmer's Advocate":

Farmers in the Temiskaming district of Ontario are taking advantage of the dry summer, and have gone into clearing. More land has been cleared this year than in any one year of the past. Crops are looking fairly well. Where they were sown and cultivated properly, and in the proper time, they look splendid, and give promise of being prolific. Last year numerous settlers left their farms to prospect for silver and gold, but prospecting being very uncertain, there have been few that succeeded. The bulk of prospectors would have been better off if they had left prospecting severely alone and remained on their farms. This year most of those farmers, learning from experience, are now on their farms, going to work with renewed energy. We have taken off an excellent crop of hay, not quite so heavy as last year, but the quality will make up for the shortage caused by the extreme dry season. The grain and roots are all growing well; barley, oats and wheat are filling well, and potatoes and all vegetables growing very quickly.

Temiskaming withstood quite well the money stringency that was experienced by nearly the whole of America, and seems to have visited even old England with its fabulous wealth. Of course we had to slow up in a good many ways, but here we have the privilege of making the cash come in both summer and winter, which helped the majority to tide over the stringency. As to what caused this financial depression over nearly the whole world, we conclude that one chief cause was the throwing of too much wealth by the speculators into uncertain investments. However, by careful financing, the money market will soon come back to its former prosperous condition. New Ontario, when properly developed, will be a rich asset to the banner Province of Ontario.

There are one or two things that I would like to mention to the farmers of older Ontario. I have been noticing quite a controversy in "The Farmer's Advocate" regarding military drill in the public schools of Canada. This question should not have been dropped so abruptly in favor of Eunice Watts and her false reasoning. Show me where she got the authority to assert if we turned our swords and rifles into plowshares we would have perpetual peace? Poor, weak reasoning! She might just as well have asserted that if we destroyed our fire engines and all our apparatus for fighting fire, we should be also sure of never having any fires. Wars, wars, and rumors of wars, God declares, will be to the end of the world. In my estimation, based upon the facts of this era of our civilization, we find a greater necessity for preparation for war than at any other period of our history. Talk about a peace arbitration to settle all difficulties! Even Christian countries could not be induced to leave all their grievances to arbitration. Asia is peopled by an immense non-Christian population; history asserts the non-Christians outnumber the Christians four to one. This, of itself, is sufficient necessity for preparation for war, especially when these Asiatics are just at present engaged in strong preparation for war.

Another question I would like to mention to the Hon. Master of the Dominion Grange, who headed a large deputation and presented several propositions before the Legislature, including one not to allow military drill in our public schools, and to charge the railways of Ontario a higher rate of taxation. Neither of these things should have been recommended. Military drill in our public schools would surely be a starting point towards making our young men proficient in the art of self-defence; besides, it would bring them up to be useful and intelligent, and every such young man would be worth one hundred not so educated. Higher taxation of the railways should not have been recommended. Examine into these railway corporations, and we find they do not build and operate these railways for their health; instead, it is purely for a profit, for the money invested. Now, if you charge them up a higher rate of taxation, they will charge you up higher freight rates, as well as higher passenger rates, and these higher taxes would come from the pockets of the people. Would it not have been better for the Province, and also the railways, to advocate and charge lower freight rates and passenger rates of travel, say the maximum price of 2c. per mile? This would surely be better than imposing higher taxation on the railways, of which we should encourage more to be built. NEIL A. EDWARDS.

Temiskaming District, Ont.

SCOTTISH AGRICULTURAL COMMISSION TO CANADA.

Canada is being visited by a Scottish Agricultural Commission of 22 practical farmers, and others interested in agricultural education and development, who are pursuing in the Dominion the course of observation and inquiry which a similarly-constituted commission followed in Denmark in 1904, and in Ireland in 1906, and will publish a report on their findings.

The main subjects of study are: Land Settlement; the Constitution and Operations of the Ministry of Agriculture; Agricultural Education and Research; Experimental Farms; Live Stock; Mixed Farming; Wheat Farming; Dairying; Ranching; Fruit and Vegetable Farming; Agricultural Co-operation; Transit, Cold Storage and Markets, etc.

They are to tour all the Provinces from Atlantic to Pacific, the visit in Canada comprising about a month and a half, August 13th to October 2nd.

LIME-NITROGEN FACTORY AT NIAGARA FALLS, ONTARIO.

A FERTILIZER FROM THE AIR.

The first factory in America for the manufacture of the new nitrogenous fertilizer, called cyanamide, or lime-nitrogen, is being erected at Niagara Falls, Ont., by the American Cyanamid Co. Some hundred men are employed in erecting the first of the permanent buildings, which is 150x150 feet, with an elevation of 66 feet in its highest part. Three other buildings started, or about to be commenced, will each measure in the neighborhood of one hundred feet square. The company have purchased 26 acres of land in the north-west part of the city, all of which is to be used, the buildings in course of erection being but one-eighth what is planned for the complete factory. The capacity of the Niagara plant is to be 10,000 tons per annum of lime nitrogen, worth in the neighborhood of \$70.00 per ton. The works are to employ three shifts of men, working eight hours each, with about one hundred and eighty on each shift, or between five and six hundred all told. And this is regarded as but the beginning of an immense industry in America in the manufacture of this new fertilizer. Plans are already under way for the establishment of a 40,000-ton plant at some point in the United States. The product is already being manufactured in Europe on a large scale.

A GERMAN DISCOVERY.

The American Cyanamid Co. is the exclusive owner of American patents for the manufacture of calcium cyanamid (lime-nitrogen). The inventions which gave rise to the industry, stand to the credit of two eminent German chemists, Adolph Frank and Nicodem Caro, who, after many years of laborious experiment, have, within the past few years, succeeded in developing a practical process by which, through the use of electricity, nitrogen can be fixed in combination with lime in such a way as to be of use as a fertilizer. Their method has been developed under the auspices of the great electrical manufacturers of Europe, the Siemens-Halske interests, and the Deutsche Bank of Berlin. These interests largely own the Societa Generale per la Ciana-mide, of Rome, Italy, which holds basic letters patent protecting the invention in all the first-class nations. The American Company secured its rights covering the United States and her territories for a consideration of \$100,000 in cash, together with a one-eighth interest in the American Company, which is to be allotted from time to time until the investment reaches \$4,000,000.

HOW IT IS MANUFACTURED.

The method of making lime-nitrogen is briefly this: Coke and lime are combined at a high heat by means of an electric furnace into a chemical compound, called calcium carbide, which is then pulverized and combined in a second furnace with nitrogen gas, secured from the atmosphere by means of a liquid-air process. The material thus obtained is lime-nitrogen, containing twenty per cent. in weight of nitrogen, the balance being the coke-and-lime compound, which serves for holding or "binding" the nitrogen. When sown in the soil it decomposes and dissolves in contact with the soil moisture, and the nitrogen is then absorbed through the roots of plants and built up into their tissues. A prime essential in the commercial success of the industry is abundant water-power for the generation of cheap electric energy. In this respect the Canadian plant is fortunately situated, in proximity to the great electric plants, from one of which (the Ontario Power Co.) a supply of power has been leased.

SOLUTION OF A GREAT AGRICULTURAL PROBLEM

The three fundamental elements of soil fertility of which land stands in danger of depletion are nitrogen, phosphorus and potassium, and if a fourth were to be named it would be lime. All these, as well as some others of minor importance, which usually exist in ample quantities, are essential to plant growth. Let there be a lack of any one in available form and plant growth is arrested. One can no more take the place of another than water can supplant bread in our daily diet. The three last named are mineral, or ash elements. Nitrogen is normally a gas, constituting about 80 per cent. of the atmosphere, being mixed with another gas (oxygen), which constitutes practically the balance. While abundant in the air in a gaseous form, nitrogen has been none too abundant in the soil, especially in old worn-out soils, and the great agricultural problem of the age has been how to increase the supply of available nitrogen in the soil. This has been the more difficult because the nitrogenous compounds are very soluble, and subject to leaching; also to loss in the form of ammonia, as a result of fermentation of manures, city sewage, and other decomposing substances, while in undrained soils a process frequently goes on which breaks up nitrogenous compounds, resulting in the escape of this valuable elusive gas nitrogen into the air. The principal means of restoring it to the soil—apart from the small annual precipitation of ammonia and like compounds, in the form of rain and snow—are the leguminous crops, such as clover, alfalfa, peas, beans, vetches, etc., on the roots of which dwell bacteria which capture nitrogen from the air circulating through the soil, and afterwards pass it on to the plant tissues. Ultimately, such of this nitrogen as is not wasted returns to the soil as manure or decaying vegetation. On stock farms, where legumes are largely grown, manures carefully saved and good farming practiced, the nitrogen problem is readily solved, but the immense waste of combined nitrogen that annually occurs, together with the obvious need for supplementing fertilizers on farms devoted largely