

Agriculture in the Public Schools of Manitoba.

BY REV. DR. BRYCE.

The experiment of introducing the teaching of agriculture into our public schools has been watched with interest by all educationists. Some five years ago the Legislature gave directions to the Advisory Board of the Province to have this done. It had not, up to that time, been successfully done in Canada. The problem is not to have classes in the principles of agriculture and the sciences on which it rests introduced into intermediate schools, collegiate institutes or even an agricultural college, but to have systematic and compulsory teaching of this subject in all of our public schools.

The Advisory Board came to the conclusion that children of eleven years of age might profitably study plant life, and thus lead up to the more specific study of agriculture. A few persons failed to see the advantage of it. They seemed to think that this plan was simply to add another "ology" and to miss the mark entirely. Despite the doubtfulness of some, the Advisory Board went on with its plan. A book called "Our Canadian Prairies" was prepared and authorized. This book gave a description of a number of the common plants of Manitoba, contained selections for Arbor Day, and had directions for the examination of the ordinary plants. Along with this a portfolio of Manitoba plants was prepared, containing thirty well-known plants and ten noxious weeds. This portfolio contained colored plates of the forty plants. These were from water-color paintings by a clever Winnipeg artist, and were printed in colors by Messrs. Marcus Ward & Co., of Belfast, Ireland.

This portfolio, which has had a very warm reception, is a real work of art. It was provided for the schools by the Department of Education.

The result of the introduction of the text-book, the study of the portfolio, the compulsory study of both on the ordinary school curriculum, and the examination on these, as well as the compulsory examination for teachers on practical botany, has resulted in a remarkable revival of nature study in the schools. From all parts of the Province come accounts of the general study of plants in the schools, and of the greatest interest prevailing among the pupils on the flora of the country.

Prof. Fletcher, of Ottawa Experimental Farm, informed the writer that during this last summer he had visited a number of the public schools in different parts of the Province, and seeing flowers in most cases lying on the desks, he had held them up before the pupils and was surprised to find the pupils well acquainted with them, able to give their proper names and much valuable information about them. This study has also been helped by the care taken by the Department in holding Institutes for the teachers dealing with this subject, and by the greater attention paid in the normal schools to nature study.

In addition to this work, the Advisory Board agreed to carry on in the next grades of the public schools systematic teaching in the principles of agriculture. Believing that nothing real could be done without some practical knowledge of chemical processes, steps were taken to have forty fundamental experiments taught in all the public schools. The utter absence of apparatus in the schools was a serious obstacle to this. It was necessary to obtain a small cabinet at a moderate price to be introduced into each school for the use of the teacher. A number of would-be wise people criticised somewhat the "chemical boxes," but their criticisms soon recoiled on their own heads. In many schools the chemical experiments were popular with the pupils and their value recognized. Teachers' conventions have desired to have the cabinets refilled and have shown great interest in them. The result has been an increased knowledge in many localities quite surprising. These experiments are required for teachers' examinations, and the writer can testify as an examiner that from all parts of the Province candidates come fairly able not only to explain, but themselves to perform the experiments.

In addition, the Advisory Board prepared and authorized a second text-book, known as "Prairie Agriculture." This book, the use of which is compulsory in all the schools, was prepared by experts, and embraces information as to the processes of scientific agriculture, the management of the different crops, the facts of breeding farm animals, the description of harmful insects, of birds, and many matters connected with farm life.

For an agricultural country, both in its towns and country places, it is hard to see how a more useful and at the same time better training subject

could be introduced to the notice of the children of the Province. Every means has been taken to instruct and interest the teachers, and it must be said the teachers have shown a commendable desire to carry out the desires of the Advisory Board.

The increasing value of land, the influx of a larger population, the greater comfort of the farmers' homes, the feeling that farming is becoming a more profitable and more honorable occupation, are calling attention to the farmer's life, and there can be no doubt that the continued effort to keep this subject before the children of the schools will be beneficial and tend towards fulfilling the purpose of the Legislature in its resolution adopted at the beginning of this movement.

The Wonders of Natural Gas.

ITS USE ON THE FARM.

BY FRED PHENNINGSBORG, KENT CO., ONT.

Toward the end of 1893, the interest of the people of Ridgetown and the surrounding district was aroused by the discovery of natural gas on the premises of Mr. Henry Porter. Previous to this time natural gas had been utilized by one Mr. Mead, of Harwich township, but as few realized its value, the people of Howard and Ridgetown were doubtful as to whether it was really a substitute for coal and wood as a fuel until they were brought face to face with it as used by Mr. Porter. During the winter of 1894, one of my neighbors, Mr. Lloyd, a man of rather a speculative turn, ventured to drill a well on his farm, and was successful in securing a flow of gas with a pressure of some forty-five pounds. Mr. Lloyd used the gas as a substitute for wood for fuel, and for kerosene for light, and declared that it had no equal. Seeing the real value of the newly discovered substance for fuel, and having no wood on my farm, in the spring of 1894 I secured the services of Mr. Henry Snider, a man

It is the housewife's friend. Go to almost any home in Howard on churning day and see how the poor woman, perhaps with a child on one arm, tugs and pulls at the dash churn, trying by main strength to knock the butter out of the cream, and when you have satisfied yourself that that is the best way of making butter come to my home and see the modern method of making the covering for your bread. You will see my wife engaged in her dining or sitting room, while out in the milk-shed she has her servant—not a being of flesh and blood, but an inanimate fluid, bubbling up through the cream (being conveyed into the bottom of the churn through a pipe and then opening into several perforated branches) and converting it into firm, yellow, palatable butter. Even during the hot summer season, when other women's butter is, unless ice is used, about as soft as the buttermilk left in the churn, my wife's butter is too hard to mix. This may seem incredible to some people, but I would say that natural gas, on issuing from its subterranean source, has a temperature measuring some 30 degrees Fahr. [NOTE.—Another novel use made of natural gas is to attach a small steam whistle to a gas pipe, say in rear of house, and by simply pulling a string a signal is given for dinner that can be heard all over the farm.]

It may be objected that this gas, of which people generally hear so much and see so little, has some defects, among which is its odor, which is disagreeable and which would taint butter; also, that the gas formed when burning would blacken silverware. These objections are only true with regard to rock gas, but they are false when charged against the gas in this vicinity, as it has no odor and will not tarnish silver.

Mr. Rowe, of Harwich township, the owner of one of the largest brick and tile yards in Western Ontario, has for several years used gas for burning in his kilns, and the results have proved satisfactory—partly because a very great heat can be obtained in a short time, and partly because it is much cheaper than wood, and does not have to be cut. As for accidents with gas, I have heard of several, but in each case they were caused by carelessness. I have used it for about four years and a half, and have never had an accident, so it is clear that it is not very dangerous if properly handled.

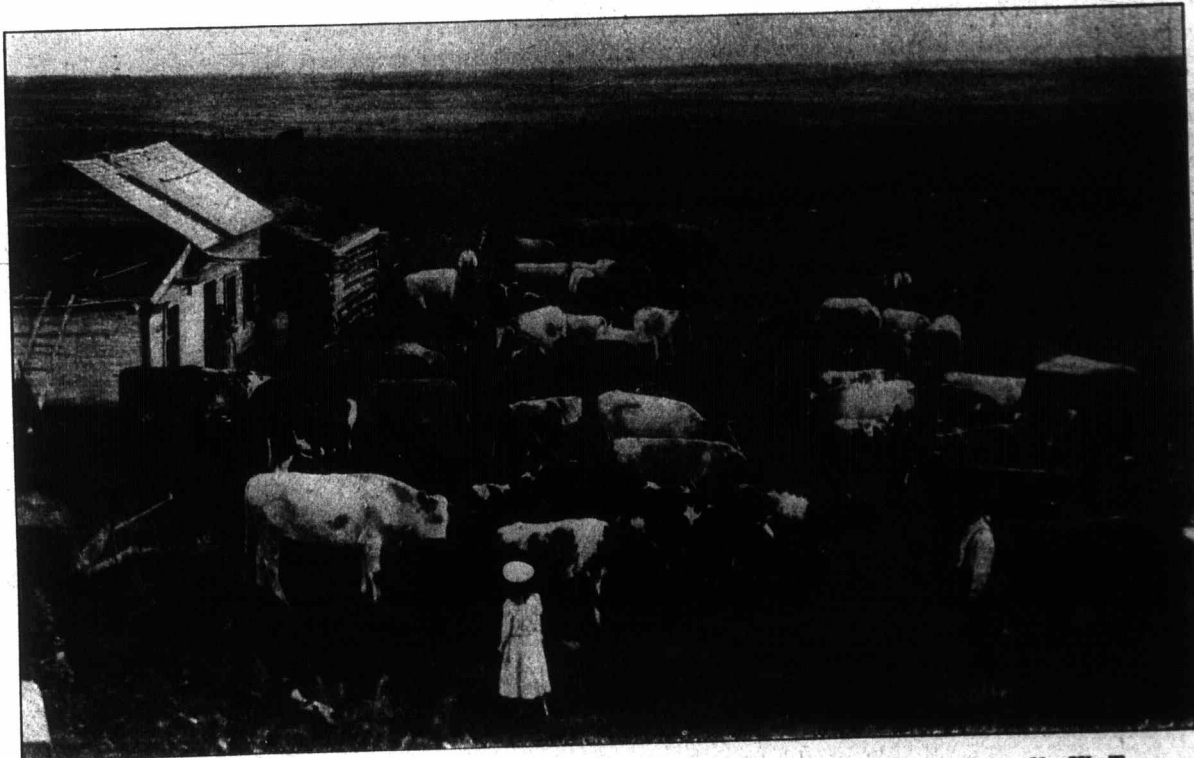
Natural gas seems to exist here and there all through Kent and Essex counties. Everyone is not fortunate enough to get it, but while drilling for water, Mr. Snider and others say they very frequently find traces of gas. I could not give an exact idea of the parts where gas is found, but roughly speaking, would say along the Ontario shore of Lake Erie and in the above-named counties.

The Horses of Manitoba.

Mr. Wallace Cummings writes of "Life in Manitoba."

for the *Century Magazine*, in which he says: Among the first things to impress a stranger are the horses. Descended from horses brought from Mexico, they have become much smaller, while they are also much more shapely. In fact, I have never seen a better-looking breed. There is nothing of the pony about their shape, though in size they range between forty-eight and fifty-two inches. At first it looked absurd to see them ridden by big men, whose stirrups hung down to the horses' knees, but I soon found out that they easily carried a rider weighing 200 pounds. The foreigners have a jockey club which holds two meetings a year at the beautiful turf track at Santa Mesa. To avoid sharp practice, members of the club only are eligible to ride. This necessitates a scale of weights, starting at 132 pounds, and rising up to 164 pounds. It demonstrates the speed and strength of the miniature horses that a mile has been run in two minutes and ten seconds by a pony carrying 150 pounds. Only stallions are used. Mares are not even brought into the city. Nobody walks—everybody rides; and on any special festivals thousands of carriages fill the streets. I doubt if there is a city in the world that can turn out half the number of private vehicles in proportion to the population.

"Raider" writes the *Scottish Farmer* as follows: "A friend of mine the other day met a German, who gave the following account of himself: Age, 53; married 32 years ago; wife has had 24 children—18 boys and 6 girls; has 3 daughters married; eldest daughter been married 11 years, has 8 children. Altogether the German has 11 grandchildren. Malthus would despair of this gentleman. He takes the cake."



HOME OF JOHANNES EMARSSON, ICELANDIC PIONEER, LOGBERG, ASSA., N.-W. T.

skilled in drilling both gas and water wells. After a few days' labor we secured a flow of gas having a pressure of some fifty pounds. In the fall another well equal to mine was sunk by my neighbor, Mr. Jas. Serson. Several other farmers in the vicinity tried their fortune, but their efforts were fruitless.

The cost of drilling and fitting a gas well depends greatly on the material used. A well cased with 2½-inch pipe will cost about two-thirds of one cased with 3½-inch pipe. The cost of drilling, generally speaking, is \$6 a day, and the pipe for the well costs from 12 to 24 cents a foot, while that used in conveying the gas to the place of use costs from 4 to 6 cents a foot. Burners for stoves are worth \$1, and lamps cost from \$3 to \$15. Taking everything into consideration, and equipping a house with four stoves and four lights, the total expense might be covered with \$100. This may seem a large sum to expend in search of fuel, but when we consider its advantages the thought of expense vanishes, never to arise again.

One of the first advantages of natural gas is its usefulness as fuel. Think of having a beautiful red flame tinged with blue without carrying in wood or carrying out ashes! Also think of having your house the same temperature during the winter by the manipulation of a simple brass or iron valve, and then ask yourself the question, Where is the fuel that can be compared with this colorless, odorless, and combustible gas? Water boils in three minutes after the fire is lighted.

For lighting purposes, natural gas rivals very closely, if it does not surpass, electricity. With one burner placed in the center of any common sized room, a person can see to read in any corner. Nor is its use confined to the house or shop. It may be used in the street, and if we wish to see a town beautifully lighted let us visit Kingsville or Walkerville, lighted exclusively with natural gas.