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THE NOVA SCOTIA JOURNAL OF AGRICULTURE

Published under direction of the Board of Agriculture of Nova Scotia.

Omnium rerum, ex quibus aliquid adquiritur, nihil est agriculturâ melius, nihil uberius, nihil homine libero dignius.—Cicero: de Officiis, lib. I, cap. 42.

VOL. IV. **HALIFAX, N. S., JUNE, 1882.** **No. 24.**

In next number of the *Journal of Agriculture* it is intended to publish a report upon the state of the field, orchard and garden crops of the several counties of the Province, indicating the extent of acreage as compared with former years, the present condition of the several crops, and their prospects as regards probable extent and quality of yield. We shall feel much obliged if correspondents who have favored us on former occasions, or others, will kindly furnish the information required. Communications should be sent to Prof. Lawson, Halifax, on or before 12th July.

Colonel Laurie writes from Oakfield under date June 24th, 1882, that he has now got in about sixteen acres of horse-tooth corn, and if it works and is kept clean as easily as all reports promise, it will be a most economical crop to raise. I hardly have a fair chance this season, it is so constantly wet that the weeds are mastering us everywhere, and some of my ground is very foul with couch, but I am following up the harrow whenever I get a chance, and the ground looks wonderfully clean.

We have received several applications for Prize Lists of District Exhibitions, and will mail them to all applicants as soon as Secretaries of Committees supply us with copies.

We have an Essay on the "Rise and Progress of Agriculture in Nova Scotia," bearing the motto "Sauerkraut," which was sent in competition for the prizes offered by Members of the Central Board of Agriculture of Nova Scotia, at the last Dominion Exhibition. It was not successful in obtaining a prize, and will be returned to the owner on his sending his address to Prof. Lawson, Secretary, Board of Agriculture, Halifax.

C. E. Brown, Esq., Yarmouth, N. S., shipped on 14th June, to Portland, Me., the young Jersey Heifers "Rose of Draffan" and "Lilly of Draffan," for which Mr. C. B. Lakin, of Augusta, gave him in December $125 each, when they were respectively eight months and two months old. For good registered female Jerseys there is demand in the United States at liberal prices.

A correspondent at Yarmouth, N. S., writes:—"We are having at last fine weather, yesterday was the very first really comfortable day, crops all very late; for many years I have begun to cut my hay on the 20th June, but it will be at the earliest 1st July this year, and so far as it appears now, a very thin crop, and pastures are also thin and late. Vegetation winter killed from unusual cold, absence of rain, the soil dry and winds prevalent."

The Dominion Exhibition will be held this year at Kingston, Ont., in conjunction with the 37th Provincial Exhibition of Ontario.

Toronto, *May 29th, 1882.*

Dr. George Lawson,
Sec'y Ag. Soc'y, Halifax, N. S.

Dear Sir,—I have great pleasure in informing you that the Dominion Government have granted $500 towards the transportation of animals and articles from your Province to the Grand Dominion and 37th Provincial Exhibition. to be held at the City of Kingston from the 18th to the 23rd of September next. Prize lists and posters will be sent you in due course. Hoping your Province will contribute largely.

I remain, yours truly,
Henry Wade, *Sec'y.*

Colonel Laurie, ever vigilant in attending to the interests of our agriculturists, called our attention some time ago to the arrangements in Ontario for announcing Weather Probabilities, remarking at same time that it was just as important for our farmers in Nova Scotia to be warned of the coming weather as those of Ontario. We at once wrote to the head of the Meteorological Department, Charles Carpmael, F.R.S.Ca., who has replied as follows:—

Meteorological Office,
Toronto, Ca., June 20, 1882.

G. Lawson, Esq.,
Sec'y Board of Ag. of N. S.:

My Dear Sir,—We have for some years had arrangements for posting the weather probabilities at post offices and telegraph offices in Nova Scotia exactly similar to

those in Ontario. As, however, our probabilities are made out at 10 a. m., Toronto time, which is a little after 11 Halifax time. I fear that they have proved of little service in Nova Scotia, and that they have accordingly attracted but little attention there. To obviate this difficulty, the probabilities should be issued at midnight, but unfortunately insufficiency of funds has hitherto prevented my doing this. In Ontario the Provincial Government supplements the work done by the Dominion in the collecting of weather statistics, by having a full set of observations taken three times a day at nine high schools, under the Act of 16 Vic., art. 186, sec. 16. By a subsequent arrangement, all these high schools report direct to me, and they are not paid until I have furnished a certificate to the Department of Education of Ontario that the observations have been regularly and satisfactorily taken. In addition to this the Bureau of Industries of Ontario provide observers at a number of stations scattered over Ontario for taking observations of rain-fall, which number will shortly be very much increased. These likewise report direct to me, and in order to insure reliability of the instruments used, they are all furnished from this office. All other expenses, however, are borne by the Provincial Government.

I enclose you a copy of the Agricultural report of the Ontario Bureau of Industries for May last.

I shall be happy to do anything in my power to increase the usefulness of the Meteorological Service to the people of Nova Scotia.

I am, yours, &c.,

CHARLES CARPMAEL,

Superintendent.

N. B.—The report will follow.

[Extracts will be given in our next number.]

HISTORY OF THE PICTOU CATTLE DISEASE.

No. 1.

A local disease affecting horned cattle has been known for many years in and around the town of Pictou, in this Province. Although long and familiarly known to residents of the locality, it is only of recent years that it has attracted attention at a distance. The immense losses sustained in European countries by contagious cattle diseases, and the strenuous efforts made by Governments throughout the world to stamp out such diseases where they have gained a footing, and to prevent their spread into new territory, have led to careful scrutiny wherever cases of illness in cattle have occurred, even where they were not of contagious nature. It thus became necessary in the interest of other countries as well as our own that a searching investigation should be made of the Pictou Cattle Disease, with the view of ascertaining its precise nature, and the remedies that might be adopted for accomplishing its extinction, or at least mitigating its effects in the affected locality and preventing its spread. We intend to give, in a monthly series of articles, a complete history of the disease, and of the efforts made to reduce and exterminate it. To-day we begin by publishing the report made by Dr. Thayer to the Treasury Department at Washington, U. S. A.:—

DR. THAYER'S REPORT ON CATTLE DISEASE IN PICTOU, NOVA SCOTIA.

West Newton, August, 1880.

SIR,—Your letter dated July 14th, with a copy of a dispatch received from the Consul-General of Halifax, also a dispatch from the Consul at Pictou, reporting the re-appearance of a contagious cattle disease, was received on the 16th. In compliance with your instructions I left Boston for Halifax on the 17th, arriving there at 10 a. m. the 21st inst. I at once called at the office of Consul-General Jackson, who informed me that he had not received any further information in relation to the disease in Pictou County since the date of his communication to the department at Washington. I then left Halifax for Pictou, arriving there at 1.15 p. m. The Consul, Oscar Malmros, met me at the landing and accompanied me to the hotel, where we met the Chairman of the Board of Agriculture and several others interested in the subject, among whom was one who had suffered severely from the disease. His statement is substantially as follows:

One of his neighbor's cattle were sick; a cow affected with the disease became delirious, escaped, and ran upon the highway and died near the premises. The body was allowed to remain there until putrification took place. In a short time his cattle became sick and all died, and he ascribes the cause of the sickness in his herd to exposure to the exhalations from the putrifying body of the dead cow. This occurred about sixteen years ago, and the disease has prevailed in that locality to the present time.

On Saturday, the 23rd, in company with the Chairman of the Board of Agriculture, we visited several infected farms. The first animal examined was reported sick this morning. She was standing quietly, the eyes appeared dull, the coat (hair) had an unthrifty appearance, the respiration was normal, pulse 60, temperature 101° Fahr., the discharges from the bowels rather soft, little or no appetite, and the secretion of milk very much diminished. It was stated that the milk had a very offensive odor, resembling the smell of excrement mixed with milk, but I was unable to detect it. The symptoms were those often seen in practice, and where the diagnosis would be functional derangement of the digestive organs.

The next animal examined was a cow belonging to a Mr. Desmond, whose farm was a mile distant from the above. The animal was standing with disinclination to move, the eyes dull, the coat standing, the muscles of the hind quarters trembling, respiration normal, pulse 80, temperature 105° Fahr. Auscultation and percussion of the thorax gave no evidence of pulmonary disease. Percussion of the abdomen denoted the existence of a large quantity of fluid. There was diarrhœa, the stools being nearly black in color. Several other farms were visited, the owners of which had suffered from the loss of cattle by the disease in question.

The description given by one is given in general terms by all, viz: the animal is dull, the coat staring, loss of appetite, secretion of milk diminished, in five or six days diarrhœa sets in—in a few cases extreme constipation—and in two or three weeks death.

In the afternoon, visited the residence of Donald Grant, Warden of New Glasgow—the cow had been ill five days. Examination: Pulse and temperature normal, respiration quiet, diarrhœa present, stools black, and the secretion of milk diminished.

Monday, 25th, again examined Desmond's cow; but little change had taken place; the temperature was elevated two-fifths of a degree. A telegram from Dr. McEachran stating that he would arrive on the noon train was received, and further examination was postponed. In the afternoon, in company with him, the Chairman of the Board of Agriculture, and several physicians, we proceeded to Mr. Desmond's, where the same cow was examined by Dr. McEachran; her condition remained about the same. Blood was taken from the jugular vein and subjected to microscopic examination with 350 diameters. Nothing was found, but afterwards, under 600 diameters, objects (bacteria) were discovered. The animal was then killed by a blow on the head and bleeding; the thoracic viscera were healthy with the exception of a slight pleuritic adhesion, the result of a former pleurisy, the brain was normal, the pleura was quite pale. On opening the abdomen a large quantity of serum, estimated at more than five gallons, escaped; the same pale appearance of the serous membrane was found as was seen in the pleura. The organs were removed separately and examined. The spleen was firm and weighed one pound eight ounces. The liver was of average size and firm. The gall-bladder was enlarged and distended with bile; a portion of the latter was dark, (the butcher stated that he had seen the gall-bladder twice as large, and filled with something as black as tar and as thick as molasses.) The whole digestive tract was laid open and examined, but no trace of disease could be found. The kidneys and bladder were healthy.

Tuesday, 26th, went to Merigomish, eight miles from New Glasgow, where we examined a cow belonging to James Grant. The animal was emaciated; had been sick several weeks. It had the same general appearance as before described. The temperature 104°.2. Pulse not taken, as she had just been driven from the pasture. I would here remark that the pulse in all the cases examined was compressible, not the wiry pulse of inflammatory diseases of serous membrane. This cow was killed in the same manner as that belonging to Mr. Desmond. The brain and a portion of the spinal cord were removed and found to be healthy. The thoracic and abdominal viscera were the same as in Desmond's case, except that in Grant's case the spleen was eight ounces heavier, and there was about one-third less serum in the abdomen.

HISTORY.

It is difficult to form an opinion of the manner in which the disease was introduced into Nova Scotia. There are various theories in regard to it. One of the most prominent is "That many years ago a vessel arrived from Scotland bringing soil in ballast; that the soil contained the seeds of a plant or weed, which has become thoroughly mixed with the grass for many miles in extent, the eating of the weed causing the sickness which almost invariably results in the death of the animal." The plant as seen by the roadside and in the fields, is from 12 to 20 inches in height, has a yellow blossom, the leaves are tough and emit an offensive odor, and is known as "Stinking Willie." The botanical name of the plant I was unable to learn.

CONTAGION.

The question of contagion may be considered as an open one. The fact, as stated to me, that cattle mingle together in pastures during the autumn months and are exposed during the winter in barns, without an outbreak of the disease from August until late in June, would seem to point to causes other than contagion.

E. F. THAYER.

HON. H. F. FRENCH,
Assistant Sec'y of the Treasury.

A VISIT TO BERTHIER.

Berthie, or *Berthierville*, or *Berthier en haut*, is an old settlement, about fifty miles from Montreal, on a branch of the Q. M. O. and O. R. The population, previous to the establishment of a beet-sugar factory, was 1,800, but has since increased to 2,300. The general industries there existing are said to suffice for the immediate requirements of the factory.

A small river emptying into the St. Lawrence borders the town, and places it in easy communication by summer steamers with the important Canadian cities. The only possible or plausible reason that can be given for selecting it as a locality for a beet-sugar factory is that, through the influence of one of the directors of the company, contracts for beets were made with the farmers for a term of years. In reference to this we would say that, whilst beets are of very great importance, there are other elements equally so,—without which success is not assured in advance.

The history of the organization of the factory is simply that Mr. Lavallée, after considerable agitation among farmers, visited Europe, and there met Mr. H. Legru, of an old family of beet-sugar makers.

These gentlemen, by mutual arrangement, matured plans for the forming of the "Union Sucrière Franco Canadienne," with a capital of several millions, which would have for its object the establishment of, not one, but several beet-sugar factories. The final organization for the starting of an experimental 200 ton factory was made in November, 1880. Shortly after that time, on July 1st, $140,000 was paid in cash by the French stockholders, while the Canadians were represented by $60,000.

The farmers gave little heed to the importance of preparing their land by a proper fall plowing, etc., for the coming beet-crop, but they realized their mistake later. This may be explained by the fact that no special guarantee was given to them, in case the factory was not started, that there would be any sale for the beets they might raise.

There were about three hundred farmers who signed the contract for beets, and the largest area contracted for was 50 arpents. The crop at Berthier was by no means satisfactory, for some farmers had only 10 to 12 tons to the arpent, whilst, on the other hand, in the parishes of St. Barthelmy and St. Cuthbert, 18 to 20 tons were obtained. The partial failure of the crop at Berthier in 1881 is said to have arisen from tardy sowing, bad preparation of the land in the spring, and no fall plowing the year previous. In Richelieu River County 6 acres of land were cultivated in beets for the Berthier factory. The greatest distance the beets were grown from the factory was 70 miles, and the delivery in that case was made by cars. The greatest distance from water communication was but 30 miles; and the number of arpents said to have been contracted for was 1,636. As regards the *yield on good land, properly cultivated*, the average was about 15 tons; not more than 8 arpents yielded this last amount; on 300 arpents the beets did not come up, and 500 arpents yielded only 6 tons.

The contracts with the Berthier factory, published in *The Sugar Beet*, were not in all cases fulfilled. They are, notwithstanding, for twelve years, but the new form is for five years only. In special cases of *very poor* land the farmer will be allowed to manure his soil slightly, and must plow it under the fall previous to sowing. As regards this double system of contract we fear it will be the cause of considerable trouble. The director (Mr. Lavallée) in charge of the cultivation informs us, that he expects to make a compromize with the contracting farmers of 1880, diminishing the area they contracted for, and providing that they will do exactly as told and not introduce their special ideas, that have so frequently been ruinous to themselves and disadvantageous to the factory. It is possible that the company will rent or purchase land with the view of cultivating about 1,000 arpents, representing a total of nearly 3,000 arpents. On account of the scarcity of labor, the company does not consider it advisable to extend its operations beyond that point.

Very few of the farmers who grew beets had had any previous experience, beyond raising a few roots for cattle feeding; and the seed was sold to them for twenty-five cents a pound, and was, in reality, several varieties mixed. It had a bad, musty odor, indicating possibly, a slight fermentation. Besides this the soil upon which the roots were grown for the Berthier factory was extremely variable as to quality. It had been previously, as a general thing, planted in wheat or potatoes. The thinning out was effected when the roots were very small.

The expense for beet cultivation, based upon the experience of the farmers who have grown roots for Berthier factory, is as follows: The sowing by drill, three rows at a time, ten acres a day, including man, boy and horse, $4; or, say, 40 cts. per acre. When running the cultivator through, five acres may be worked with a horse and man for $2.50, or 50 cents per acre. For spacing and hand hoeing, $2 an acre. Thinning out after the spacing has been properly done, $3. Hoeing by machine, 50 cents. Harvesting, with a plow, $4 per acre, total $10.40. In reference to the preparation of the land, the season is short, and the numerous hoeings given in Germany are said to be impracticable in Canada. The cost of transportation on Canadian roads is a problem not yet solved, and not likely to be for many years to come. Under the best of circumstances the roads are bad, and when the fall rains and snow appear they are almost impassable; and for that reason many of the smaller contracting farmers were unable to deliver their roots; but, for the most part they lived up to their contracts during the entire growing period. Superintendents made frequent visits to the farms to see that the proper principles of cultivation were adhered to. The free use of superphosphate of lime was allowed, but as this is sold at a comparatively high price, there was little danger of its being used in excess.

As regards the transportation by railroad, the cost is $6 to $8 per car-load of 10 tons, while the very slow delivery, in many cases, necessitates having a man at each station in constant attendance. This latter item raises the cost of carriage to about $1 a ton. It is argued that if large areas were grown in beets along the Richelieu River the roots might be delivered by water at $1 a ton from wharfs of a simple and cheap construction built by the farmers, who would have, as an average, transportation of about one-fourth of a mile, while by railroad the distance averages two miles under the best of circumstances. This water transportation is assured in advance, and the factory can then place reliance on its beets. On the other hand, by railroad,

it is almost practically impossible in Canada, for the reason that transportation is needeed at the very season of the year when all other merchandize is being carried over the road; and railroad companies cannot show special favors to one industry and neglect all others. The time from harvesting until the roots are silotted is extremely limited. Harvesting is done rather late, and, for the proper delivery, several hundred cars would be required, which number is beyond the ability of the enterprising Canadian railroad organizations.

The beets had their necks sliced off before leaving the fields. This practice the farmer dislikes for the reason, as he argues, that it is to him an enormous loss of time and weight of the roots grown. But we again beg to call attention to the fact that the necks contain a large proportion of the salts, etc., taken from the soil. By plowing them under, the supposed exhausting effect resulting from beet-growing is evaded. Efforts, however, will be made in the future to leave the necks on and deduct a certain percentage for their weight. It is argued that they may be then more easily kept in silos, etc. This will increase considerably the cost of working per ton. In Germany this method is adopted, but it is the outcome of their special system of taxation. (We will not here, for the present, discuss the advantages or disadvantages of this custom.) The entire crop of beets last year was placed in a special building just outside of the main factory.

The permanent store-house for the roots is a wooden structure several hundred feet in length, with a capacity sufficient to hold 2,600 tons of beets. This, when we visited the Berthier factory, was entirely filled with beets, being nearly the entire crop. This store-house was supplied by carts which entered it by an inclined plane and emptied the roots into trap doors. Railway cars entered from a siding communicating with the main track. We examined the roots and found them in a tolerably good condition, with the exception of several hundred tons which had been frozen. In this store-house no effort has been made towards ventilation or preservation, other than protecting the roots from the rain or snow by a roof. When we consider that sugar beets to the value of nearly $12,000 were thrown in heaps without regard to their possible decay, we cannot hope for any positive profit from their utilization. The intentions were to build partitions, thus localizing such trouble.

It was not considered advisable to build foundations, as the land is low and wet. Earth has been thrown against the sides of the store-house; this being a poor conductor, will in part protect the roots against the cold weather. But the ends of the store-house being open, the cold naturally froze those roots with which it came in contact. A rather curious phenomenon has been noticed, which is, that in the greater number of cases the action of the frost has been confined to the exterior surface of the roots, its evil effects were consequently not as serious as if the entire beet had been congealed.

As regards the machinery for the factory, the order was given in February, 1881, and the delivery made in July, August and September. The total cost was $85,000. The entire plans were made in Europe; boilers, piping, etc., brought over,—in other words, nothing was made here. The freight by steamer increased the cost, as it amounted to $10,000. The delivery, however, was made with perfect regularity, and the principal obstacles to a complete success of the Berthier factory for the first season were due to the non-arrival of the bone-black. The bone-kiln turned out about half a ton daily. At that rate nearly three weeks would be required before the requisite amount could be obtained. The water difficulty had already commenced. The intentions were to bring it from the river by gravity, but the frosts retarded considerably this scheme. The foundations proper of the buildings were also more costly than was anticipated. The general plans of the roof was changed, as it was argued that the excessive weight of snow in the Canadian climate was such that roofs built after ordinary plans would not answer. It is not anticipated that the fuel question will give any trouble. The beets tested on an average before working about 11 per cent. of sugar. During the few days the factory worked about *150 tons per diem.* The plant of the factory is for 200 tons in twenty-four hours.

It is not yet known what will be done with the pulp; there is some talk, however, of one gentleman in Montreal buying it to aid a cattle speculation. The farmers, having never tried it, can express no opinion as to its value. It is not yet known what will be done with the molasses. At one time, as already mentioned in *The Sugar Beet*, it was intended to suppress it entirely, and work by Legru's elution; but for complex reasons that project was abandoned. Several osmogenes can separate a large percentage of the sugar it contains, and the refuse from the carbonation can be used as a fertilizer. Later we hope to give our readers a plan of the Berthier factory, with a full description of the manner of working.—*From The Sugar Beet.*

In another column we publish an article from the *London Agricultural Gazette*, in which the advantages of *Earliness* are set forth. The English farmers are having a very early season this year, with prospects of early harvest, but even that does not prevent them seeing how much is gained by early work, by selecting early varieties, and generally by holding on to *the forelock of the season.*

There is much in that good old Saxon word "Early." It is the early sun that ripens the corn; the early bird that *catches the worm; the early cabbage that* catches the price; the early lamb that makes the money; the early chicken that pays the henwife; the early gooseberry that commands the market; the early swarm that makes the honey; the early sown wheat that fills the bushel; the early sown barley that pleases the maltster; the early sack of wheat that attracts the miller; the early peas that pay the rent; the early potatoes that fetch the money; the early shepherd that fattens the sheep; the early carter that pleases his master; the early farmer who grows rich; the early housewife that keeps her maids; and the early maid who keeps her place. *Earliness is the true road to* success, and the fact that so few succeed in the race of life is because so few can shake off dull sloth and early rise. There are some avocations in life in which early *rising is not necessary,* but they are chiefly of the kind to which another wise saying applies, that you cannot "burn the candle at both ends."

Such is not the case with farming, and we hold it as positively true that the man who intends to succeed in agriculture must be an early man. Early in rising, early in getting in his crops, early in reaping them, early in meeting his men, early at fairs, early in markets, early at home, and early to bed. Young men, especially, find it difficult to rise early, but this only accounts for the fact that so few of them are good for anything. The youth who cannot rise until he is *"called," who will not get up when he* is called, who comes down to breakfast in embroidered slippers, and cannot move out-of-doors until he has had his pipe, may be a "good fellow," a gentleman, and many other good things, but he is not going to succeed as a farmer, a landagent, or in any other rural occupation. He has mistaken his calling, and is himself a mistake. He ought to have been born rich; or, as they say in the canny North, his friends should have been born before him.

These thoughts respecting earliness in general, have suggested themselves to us as we thought of the great advantages of a few early turnips to the farmer. Also of early rape, and early summer keep for our flock. And they gradually extended themselves as we thought of the advantage of earliness in every way. It has

been objected that the early worm suffers from his earliness, but he must be regarded subjectively as the reward of the early bird. In farming matters it is seldom that we can be too early, although there are cases in which there is luck in leisure, and others in which too much haste brings with it misfortune. Thus roots may be sown too early and run to seed, or run to neck, or become mildewed; and potatoes may be up too early and get cut with the frost, and sows may farrow too early and lose their pigs, and barley may be sown too early and get nipped with the cold. But it is easy to avoid these consequences of precipitancy, and to be in a position to seize the right opportunity when it arises instead of sleeping through it. It is well that farmers should be well forward with their work, and ready to commit the seed to the ground on the first favourable season.

With regard to the root crop, the present early season is a great boon. The recent fine weather has forwarded tillage operations, and in our particular case heavy thunder showers have imparted the requisite moisture to the soil. Early turnips sown now may be relied upon to furnish a good crop by the last week in August. Early swedes got in from June 1 to 10, will probably soon germinate, quickly come up to the hoe, and yield a heavy crop. Mangel sowing was delayed on account of wet weather late in April, but we never remember to have seen the seed germinate quicker. What we sowed on May 8 were discernable above-ground on the 18th; and what we sowed on the 12th were visible on the 21st inst. Early rape is also fast coming forward into rough leaf, and has passed the fly. Where fodder crops are grown to be followed with swedes and turnips, the earliness of the season has enabled us to feed them off in good time, and this is highly favourable to the prospect of more substantial keep for next winter.

An early harvest may now be confidently expected, and this leads us to hope for extra food in the shape of stubble turnips and mustard. We also hope that hay will be won and carried before turnip hoeing becomes urgent, and this will be a great convenience and source of economy in wages. We must apologise if we have been guilty of a diatribe or of moralizing rather than sticking to our "last" and talking of "nowt" and "neaps;" but, in the language of Shakespeare, we may add in extenuation, "if we offend, it is with our goodwill."—*London Agricultural Gazette.*

Lady Jumbo is the pet of the Horse Show at Islington, London. She is a black pony, stands 30 inches high, and was transferred from London Bridge Station to Islington in a cab.

Pink eye is a name applied to a disease which often in spring and fall (especially if the weather is very wet and the climate generally unfavorable to health), breaks out as a sort of epizootic. It will occur largely in some few districts, and not be general. It is then said to be epizootic, and is a species of influenza, developing into a catarrhal form of fever, such as the great epizootic of 1872 and 1873; or it may bring on a diphtheroid or typhoid disease. There is also a type of influenza which affects the cellular tissues of the body, accompanied by more or less of the following symptoms, and this disease is also called "pink eye." The earlier symptoms are dulness, rigors, loss of appetite, swelling of eyelids, discharge of tears down the face, pain in the limbs, and shifting or resting of first one and then another, and so on, the legs one or more are apt to swell, circulation is imperfectly carried on, and they become very cold. The pulse runs from 54 to 84 per minute, and after a few days becomes very feeble. The internal temperature at commencement will be about 102° or 103°. But if the throat is seriously affected or the disease attacks the lungs it may rise to 107°. All the excretory functions are depraved more or less. Pink eye takes its name from the color of the conjunctival mucous membrane lining the eyelids, which is pink, red, or very dark red, according to amount of its blood vessels. It really signifies nothing, inasmuch as almost all fevers and inflammations that affect the general system give rise to higher color of the mucous membranes. Simple cellulitis, or pink eye, when assuming a mild type, requires little treatment. But each year domestication adds to the severity and multiplication of animal diseases, and recently America has experienced a wide spread epizootic in horses that partook somewhat of the nature of pink eye, but with all the symptoms aggravated, many cases coming under my notice being really typhoid pneumonia, others presenting symptoms like those of diphtheria in the human subject. Horses usually cough a good deal when suffering from pink eye, and have discharges from the nostrils, but this year many do not cough, and very few discharge from the nose. Animals having slight attacks require rest, clothing for body and limbs, good strengthening diet (not starvation on bran mashes), a laxative, nitrate of potash, iron and quinine. A combination of chlorate and iodide of potash is also very good. If the throat is sore, give counter-irritation and gargles. But if the internal temperature is high, appetite gone, throat very sore, and the breathing accelerated, they require the experience and judgment of a veterinary surgeon. I consider it wise to give every medicine, that can be so administered, in the form of a ball (bolus), as they do not in this way get any fluid into the lungs, as is often the case where horses are drenched when their throats are sore. Such an accident is apt to be fatal. There is no danger of transmission of pink eye to progeny.—*Country Gentleman.*

AGRICULTURAL INSTRUCTION FOR THE YOUNG.

BY BYRON D. HALSTED, SC.D.

There are few subjects of greater importance, and at the same time more difficult to treat satisfactorily, than that of the agricultural education of the youth of our country. It it assumed that there is a great amount of knowledge for the farmer's boy and girl to acquire. There is the chemistry of the farm and the chemistry of the household; the principles of plant growth; and the principles of kitchen economy—in fact, a thousand questions to be answered and problems to be solved before we can have the great blessing of the most intelligent and educated life upon the farm.

It is not the lack of subjects to teach the young that troubles the thinking man, but the best methods by which those subjects are to be taught. It is here that the philanthropist may well pause for a solution to the problem: How to educate our boys and girls to a higher, better and wiser farm life?

In considering this question it must be acknowledged at the outset that the mind of the child is very receptive, and that it is also easily moulded to this or that way of thinking. The child's eyes are keen to see, and its ears are quick to hear; the great desideratum in its education being, to lead it to see in the right light, and to heed the voicings of the truth.

To many it would seem like folly to put any agencies in a child's education ahead of, or even on a par with, its parents. If we can be sure that the father and mother are governed by their own properly trained minds, all other requisites for the full and rational education of their offspring will naturally follow. But the fathers and mothers are not all that they should be; and they are in need of much of the very training we are endeavoring to put into the heads of the children. The solemn fact must be acknowledged — that the natural teacher of the child is often sadly in need of being taught. In many cases, therefore, the child and the parent must be raised together to a higher plane of knowledge; the best methods for one frequently being the best methods for the other.

Much good and lasting work can be done in agricultural education by the farmers' institutes, winter meetings, &c., of which excellent illustrations may be found in Connecticut, Massachusetts, Michigan, and other states. But at their best the lectures and discussions reach only a small portion of the farming population, and that the most educated; indirectly the boys and girls are influenced, but there is comparatively little that their young minds can grasp. These gatherings are for grown people, and as such are to be greatly encouraged.

Too much stress cannot be laid upon the educational work that can be done for the young by the various state and county fairs, and other agricultural exhibitions.

There are strong advocates for a wider and better knowledge of agriculture through the medium of the common schools. Doubtless if we had the teachers which such a claim pre-supposes, much might be done. There is very little agriculture that can well replace any part of the school instruction of the average scholar in the common schools. The claims of reading, writing, spelling and arithmetic—the fundamentals of all education—come first. Give the masses the foundation principles of education, and upon them let each person build his or her technical education. The common schools, as the name implies, are for all, irrespective of future occupation, and should give the best possible education common to all. This leaves but very little room for agriculture, mechanics, or, in fact, any of the arts.

There are schools that are established especially to impart a knowledge of agriculture; they are doing a good work, and their influence is widely felt, but it does not seem that they are directly for the masses. Where one young man graduates from an agricultural college, a thousand others never see the inside of its walls. Many boys do not go to college because they cannot; others because they have not been raised to that state of mind to appreciate the stores of knowledge that are within their reach. Even the success of the institutions for the higher agricultural education of the people depends upon the more thorough knowledge of agriculture among the masses.

The agricultural press is doing much for the elevation of the farming class, enabling the farmer to become a wiser man, and therefore better able to till his soil intelligently. There is vastly more than can be done in this branch of the means and methods of agricultural advancement. It seems as if there is a field here that is yet but imperfectly tilled; rich ground that has been but little worked.

In the very blaze of the burning fact that the children are eager to learn, yes, even gasping after knowledge when that knowledge is placed before them in the proper shape, let the writer ask this question: How many of the professors in our agricultural colleges write for the boys and girls? Is it because the boys and girls cannot be interested in the principles and facts taught in the school-room, and exemplified in the grain fields and the dairy? Cannot the Youths' Department of every agricultural paper be made a very potent portion of the journal, by filling it with plain and simple matters of farm life in such a way that every child who reads will be interested? With but slight experience in agricultural journalism, the fact seems clear to the writer that the children are eager to read on almost any subject, provided the thoughts are clothed in simple language. If the way is made easy the farmer's boy and girl will follow. Children respond very freely when any proper attention is paid to their inquisitive natures. He who can answer a child's question in a simple, childlike way, is always held in high esteem by the youth, and it may be said, will never lack for questions for them to answer. He can tell them of many interesting and wonderful things, and these are just the ones about which the children are anxious to know.

The child's paper, or "Children's Corner," comes next to such a friend when it treats of simple subjects in a clear and simple way, the writer remembering how blindly he or she saw things when a child, and endeavoring to make the same subjects appear clear to the young readers. The "Youths' Department" can do more than simply instruct. By a system of seed distribution, prizes for the best crops raised, and in many other ways, an interest, and enthusiasm even, can be raised that will go far towards removing any tendency that may exist for the boy to leave the quiet of farm life for the bustle and stir of the city.

If we are to have a truly educated farming class, that education must begin early in life; and there seems to be no more satisfactory way of reaching the children than through the "Youths' Department" of the farm and household journals. With these papers abounding in interesting and instructive matter, the thousands of farmers' boys and girls may at their firesides, oftentimes with their parents as readers, store their minds with knowledge that will make them love the farm and dignify the calling of the farmer.

Then, notwithstanding the great value of all agricultural meetings, with their lectures and discussions and private talks, the various fairs and exhibitions, and the colleges and common schools, we at last come back to the home on the farm, and there find the place for a great educational work by means of the Children's Department of the family papers, a department which deals with farm life, farm science, and farm art, in fact, farm work, in a way that every child whom the parents are anxious to have come into possession of all that they have acquired in knowledge or estate, will gladly read, and add to the inheritance as much as within it lies.

I cannot close this brief paper without appealing to all writers on agriculture to look more to the young mind, that, in the receptive and plastic state, is so eager to be instructed, though sadly lacking the educational food and mental training which will help it all along the pathway of life. As you love your children, and teach them the simple truths of nature and of right living, think of the tens of thousands not so favorably circumstanced by parentage, and reach out the hand to help them through the *Juvenile Agricultural Journal.*

Do not farmers' boys and girls deserve more than they get in their newspaper reading? I hope, Mr. President, this topic is worthy of the consideration of the Society that is organized for the Promotion of Agricultural Science. I only wish I could suggest it in a more forcible and satisfactory manner.—*From the Journal of the American Agricultural Association.*

NORTH-WEST NOTES.

As I suppose the mind's eye of many readers of the *Agricultural Gazette*, personally interested in information relative to the North-West Territories of the Dominion of Canada, is now turned towards that hitherto "Great Lone Land" once ruled by the Hudson's Bay Company, a few notes relative to agricultural prospects in general throughout that vast domain, will very possibly prove interesting and perhaps instructive.

Emigrants from the older provinces are already pouring into it, especially from Ontario; in fact, it has almost become a standing joke to ask a person whether he has yet taken the "Winnipeg fever." Some will doubtless be successful; it is to be hoped many; but the press, where not swayed by political animus, hesitates not to assert that "all is not gold that glitters," even in the North-West, as read the following:—"A correspondent of the St. John *Globe* warns intending emigrants to bring tents with them, or abundance of money to pay the exorbitant charges levied on strangers." This advice was given a month or more since present date (March 41), when other advices state that thousands of immigrants are snow-blocked in Winnipeg, and shifting as best they can in tents and extemporised shanties, with the thermometer where Englishmen never (at home) see it, and the cost of living only comparable with that of a besieged city.

It is also more than ever necessary for immigrants to keep their eyes "skinned;"

the following item to wit:—The Orillia *Packet* says two Barrie men, through the representations of land brokers, were induced to purchase a large quantity of land within 5 miles of Winnipeg, without having seen the property. It now appears that the land is worthless, being an "irrecoverable swamp." As a matter of fact the land speculation in the North-West is more on a par with the South Sea Bubbles and Tulipomanias of the past than anything seen in this present century.

British farmers are not likely to want for information as to the producing capabilities of the modern agricultural Eldorado—40 bushels of wheat, 50 bushels of barley, and 70 bushels of oats to the acre—though it seems strange that these raw materials of life should be so costly under such circumstances. At Fort Saskatchewan, a Capt. Gagnon assured the special correspondent of the *Globe* (Toronto)—the *Times* of Canada—that in that vicinity an average of 50 bushels per acre of barley and 60 to 70 bushels of oats was not uncommon; 25 to 30 bushels of wheat. Yet two days previously, at Edmanton, 51 miles distant, he—the "special"—was charged 2 dol. (8s.) per bushel "for barley that was nearly half chaff;" this for his ponies. Oats were "hard to get hold of at 6½c. per lb." Flour was 15c. per lb., or 36 dol. per barrel of 200 lbs.—over £10. Ten pounds sterling per English sack this latter. Bad roads and no railroads will hardly explain these prices for that which can be raised so plentifully on the spot. But more on this head in future. English farmers perusing this must not feel too envious of their Edmonton brethren; blacksmiths charged 1 dol. (4s.) for each foot for shoeing horses, an' everything else was in proportion. This was in October, 1881.

To continue, as a very good way in hiring a farm is, if possible, to get at what it will do in a bad season—the good seasons will always take care of themselves.—I think, therefore, as so much has been or is being said about what can be grown in the great North-West, a glance at the reverse of the picture, at what cannot to advantage be grown or done there, may prove useful.

1. Sheep cannnot be "grown," except in very small patches, as read the following from the pen of Mr. Wilson, the special correspondent before referred to, who accompanied the Marquis of Lorne in that capacity when he visited the North-West last summer and "fall." Mr. Pratt, who has had considerable experience in conducting a large farm near Westbourne, on the White Mud River, about 20 miles from Portage La Prairie, had every possible appliance for caring for the land, keeping the sheep in a snug, warm pen. In spite of all this, however, the lambs died off in great numbers, on account of the cold season at which they were dropped, and he found that the winters were so long that it was impossible to have the lambs come late enough to escape the severe cold.

It is evident that a frost from 30° to 70°, and even from 80° to 90°, must give such a chill to the advent of all young stock that much greater watchfulness will be required than is common in temperate climes. People accustomed to attend stock will understand all this. To my mind the same difficulties will attend sows in pigging as ewes in lambing during winter.—*E. H. Dalton in London Agricultural Gazette.*

THE MATTER OF PURE MILK.

A letter from the American Consul-General at Frankfort relates how the difficulty of getting pure milk is dealt with in that city. A police inspection had already been established, the lactometer being also in common family use. Out of 309 analyses made in 1880 in Mannheim 245 showed impurity, and 650 reichmarks were collected in a single month as fines, at the rate of 1 mark for each 1 per cent. of water added. But as a means of coping with not only this difficulty, but with unevenness of quality, injury from carrying, dirt and disease in the animals, the Franckfurter Milchkind Anstalt was established four years ago, largely by the medical profession. It is managed by a commission of three physicians, one veterinary surgeon, and one chemist. The cows kept are of two breeds only, carefully selected; they are kept constantly in stalls, fed with care and perfect uniformity on dry food, with every attention given to ventilation and cleanliness. To insure uniformity of quality and dilute the power for harm of a single animal which might possibly become unhealthy, the milk of every ten different animals is poured in together. The milk for delivery is put into quart bottles, stopped with wax, and sealed with the Anstalt seal. So strictly is cleanliness required that the empty bottles are washed twice a week in a weak solution of soda, and the corks (which are only used a short time) are boiled in a soda solution after each use. Spring waggons, with apertures for ventilation, are used for delivery. In hot weather they are covered with cocoa mats, and no waggon must take out more than can be delivered in three and a half hours. The chemist tests one bottle daily. The Anstalt milk retails at 50 pfennigs (about 12 c.) per quart, and it is claimed to have actually diminished the number of nurses employed in Frankfort, and to have produced surprisingly good results otherwise. These are so noticeable, that a benevolent movement has been started to provide the Anstalt milk at half price for all infants supported by artificial nourishment during the first year of their existence. The Frankfort plan is thus simply a milk-producing concern on a large and intelligent scale, and it is obviously useless to discover and condemn poor milk without providing better. Mortality among human sucklings, greatest where poverty and ignorance are greatest, might doubtless be mitigated by a plan of this sort, and it would be of commercial value as well.—*Utica Weekly Herald.*

WEST FARNHAM, (CANADA).

The bounty of $70,000 offered by the Canadian government for the establishing of a beet-sugar factory in a locality selected by one of its officials, is to be paid to West Farnham factory. We are informed that the House of Parliament has voted that $25,000 in cash be paid this year. In other words, the Canadian government has signified its intention of making the West Farnham factory a success. In order to increase its facilities, the company has issued a "preference stock" to the amount of $150,000.

The prospects for this year are very bright. Up to the time of writing, about 1,000 acres have been contracted for, 500 acres of which are taken by four syndicates: one contracts for 200 acres, two for 100 acres each and two 50 acres each. The balance of the contracts is with farmers on areas of one-half to five acres. If the company had intended working its full capacity, 250 tons a day, there would not have been the slightest difficulty in obtaining the desired quantity of roots. But it was, for the present, considered advisable to wait for the third campaign before attempting the handling of some 30,000 tons of roots. No effort will be made by the company this year to grow beets. It is considered advisable, as far as possible, to devote its entire time to working up the roots, which, in itself, is an undertaking requiring every possible attention. It must be said, however, that in some few years hence the conditions will be changed, and the objections now justly offered will no longer prevail.

The Canadian government has offered for two years a bonus of seventy-five cents per ton on beets raised by the company. The contract with the farmer specifies that $5 a ton of 2,000 pounds be paid for roots delivered at the factory, or $4.50 F. O. B. cars, when the contracts are small, say from one to five acres; but to syndicates who contract to raise from fifty acres and upwards, $5 50 delivered at factory, or $5 F. O. B. cars. Our readers will readily understand that by the above arrangement the neighboring farmers are induced to grow roots, as

they would with but little trouble realize fifty cents more for their beets, than those who contracted with the company at distances too great for transportation by horse and wagon. On the other hand, if money can be made in growing small areas in beets, it necessarily can when on a large scale, as the facility of working, by improved agricultural implements, is very much greater. The bonus of fifty cents per ton will encourage the growing of hundreds of acres. The West Farnham Company has promised us regular information regarding its workings, and we are convinced that, when published, this will be of interest to our readers.—*From The Sugar Beet, a Philadelphia journal.*

New Process for Preserving Meat.—A demonstration of a new method of meat preservation was given lately at York Terrace, Regent's Park. Instead of steeping the dead meat in an antiseptic, the preservative chemical is introduced into the live animal, and by the action of the heart is sent through the blood vessels and capillaries into every part of the body. The sheep, which was first stunned by a smart blow on the head given with a wooden mallet, showed no signs of consciousness or sensibility throughout the operation. Mr. W. Hunting, a veterinary surgeon, laid bare the left jugular vein, and using an ordinary surgical trocar and canula drew off about a pint of blood. The preservative chemical, dissolved in warm water and kept at blood heat by a hot water jacket surrounding the tin can in which it was held, was then allowed to flow through an indiarubber tube placed to the orifice of the canula into the vein, about two pints being thus injected. As soon as the charge had run into the animal the canula was plugged and about two minutes were allowed for the injected fluid to pass through the whole vascular system. The sheep was then stuck by a butcher in the ordinary way. Another sheep was then similarly treated, the whole operation in each case occupying from four to five minutes from the time the animals were stunned until they were carried out dead. The antiseptic used is boracic acid, which, it is said, does not in the slighest degree affect the flavour or quality of the meat, while the results of experiments show that meat thus treated will in this country keep perfectly good without the use of ice or refrigerators, for five or six weeks in summer, and two or three months in cold weather.

The British Association for the Advancement of Science will meet this year at Southampton, commencing on 23rd August, under the presidency of C. W. Siemens, D.C.L., LL.D., F.R.S., F.C.S., M.I.C.E.

Effect of Frozen Food upon Animals.—The effect of frozen grass and other herbage is sometimes disastrous to the health of the animals fed upon it. I have been careless enough to suffer from it. Usually my cows spend the forenoon in the stalls ruminating and digesting the morning's feed, and are not turned out until noon, when they have the range of a pasture. But one day they were turned out earlier, and while the frost was thick upon the grass in places where it was shaded by a hill from the early morning sun. The cows fed upon this frozen grass, and on being brought in, in the afternoon, one was found with the udder very hard and hot and inflamed. From 7 quarts of milk at a meal she fell off at once to less than 2 quarts, and half the udder had no milk. After a whole week's care the udder is not well. Here is a week's product of a good cow lost by one little neglect and thoughtless departure from a regular system of management. But a curious effect occurred in churning the cream three or four days after this frozen grass was eaten. The whole churning of 25 lb. of butter was of an unusually light colour and defective in flavour; and, more than that, it required several days completely to recover the quality and appearance of the butter.—*New York Times.*

Great International Fisheries Exhibition, London, 1883.—The project is in a great measure the result of the National Fisheries Exhibition, held in April, 1881, at Norwich, under the patronage of H. R. H. the Prince of Wales, and under State recognition, with the powerful co-operation of the Worshipful Company of Fishmongers. Her Majesty the Queen has graciously consented to give her name as Patron, and H. R. H. the Prince of Wales to act as President. The Exhibition will be opened on 1st May, 1883.

The classification comprises every object adapted for exhibition, illustrative of Sea and Fresh Water Fisheries; the preparation, preservation and utilization of Fish; Fish Culture; the Natural History of Fish, and Literature connected with Fishing. Another department will relate to the Economic Condition of Fishermen. Prizes will be given, and conferences held for reading and discussion.

Advertisements.

Resolution of Provincial Board of Agriculture, 3rd March, 1882.

"No advertisements, except official notices from recognized Agricultural Societies, shall be inserted in the Journal of Agriculture in future, unless prepaid at rate of 50 cents each insertion, for advertisements not exceeding ten lines, and five cents for each additional line."

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