Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☑ Bound with other material/ Relié avec d'autres documents
- ☑ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

  Title on header taken from:/ Le titre de l'en-tête provient:

- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
									✓		

THE

NOVA SCOTIAN

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. III. **HALIFAX, N. S., JUNE, 1879.** **No. 27.**

HALIFAX, *5th June*, 1879.

Our space is occupied this month, for the most part, with articles on Sugar Beet Culture and Cattle Disease. We know that several farmers have devoted portions of their root fields to the Sugar Beet this year, by way of experiment. It is not to be expected that capitalists will erect a Beet Sugar Factory until our farmers are prepared to grow a sufficient quantity of beets to keep it going. On the other hand, our farmers will not engage in the culture on a large scale until the means of manufacture shall be beyond the stage of mere expectation. To put the matter in a nut-cracker, Beets are not grown because there is not a Sugar Factory, and there is not a Sugar Factory because Beets are not grown. Now we believe that it would be greatly to the interest of our Agriculturists to have the Sugar Beet industry introduced, and the simple mode which we propose for effecting this object is for our farmers to engage at once in the production of Sugar Beets for feeding purposes; as a feeding crop the Sugar Beet can be profitably grown. And it may be expected that when its culture for this purpose shall become general, capitalists will appear ready to buy up the roots for sugar making. We believe that in rich spots mangels are more productive as a feed crop than the White Sugar Beet, but on ordinary soils, and especially those of the poorer class, the advantage is on the side of the saccharine root.

Mr. Morrow again favours our readers with some interesting chapters from the old Dutch Philosopher, Camper, on Cattle Disease.

Next month we hope to present our readers with an ample statement of returns from the various Counties of the condition of the Field Crops and Orchards. We would remind those obliging friends who have, in former years, favoured us with information of this kind, that a renewal of their attentions will be very acceptable. We have had many illustrations of the practical utility, to farmers and business men, of *early, reliable* information as to the actual condition and prospects of crops, the quantities likely to be produced, and other such matters affecting supply and prices, and we are consequently prepared to give up a large portion or all of our space to such communications in summer time.

LAST Saturday the Botanical Class of Dalhousie College, in their weekly excursion, met with an interesting plant, new to the Dominion, Viola primulæfolia. This beautiful sweet-scented violet was found in the swamp behind the Three Mile Church, in small quantity. It had not been observed before farther north than Massachusetts. On the same day, at Prince's Lodge, a number of native English plants, now quite wild in that locality, were collected, including Veronica Chamædrys, Aquilegia valgaris, Cratægus Oxyacantha, Ceatures nigra, Veronica officinalis, also a number of garden plants.

Mr. Cameron, B. A., of Baddeck, has recently made a few interesting botanical discoveries in Cape Breton, and has considerately sent roots to the Public Garden at Halifax, so that the Flora of the Island may be represented at the metropolis. In the list we find Viola pubescens, Menyanthes trifoliata, Calla palustris, Streptopus roseus, Sanguinaria Canadensis, Orchis spectabilis.

HOW TO GROW THE SUGAR BEET.

CHARLES ALLISON, ESQ., of Kempt, Q. C., in delivering the opening address of the South Queen's Agricultural Exhibition, held in October last, strongly recommended the cultivation of the Sugar Beet in the County, and, from time to time during the winter, we have placed before our readers the opinions of different writers on this subject. We are informed quite a number intend giving the Beet a trial, and the following from the *Scientific Farmer*, a leading American Agricultural Journal, no doubt will prove very useful:

"The beet is a plant which, to be profitably grown, requires a careful preparation of the land. The soil should be made deep by ploughing, be rendered friable by repeated stirrings, and the surface should be formed into a smooth seed bed. If testimony is to be believed, scarcely too much attention can be given to those preliminary operations. The

best soil is a deep, mellow, sandy loam, with a permeable subsoil. The land requires to be well manured, and the manure well mingled with the soil; and an additional supply of commercial fertilizer, as rich superphosphate, should be furnished to the drills, along with the seed. About sixteen pounds of seed per acre; and this should be planted in drills, about eight inches apart in the row, (3) and the drills sufficiently apart to admit of one horse with implement to pass between. The nearer these drills are, the better for the sugar yield, as the beets are dwarfed by crowding, and the smaller beets, say from one to one and one-half pounds, are richer in sugar than those of two or three pounds weight. It will always be found desirable to plant this seed with a machine, of which there are many good kinds to be obtained. It is always well to plant considerable seed, so as to escape accidents. When the beets are thinned, as they should be when about three-fourths of an inch high, the surplus plants can be removed more economically than new plants can be grown in the vacant spaces. The depth to plant is from one-half inch to one inch. In Dr. Grovven's experiments, the plants from seed planted from five-eights to one and one-eight inches deep were always the most vigorous. The time for germination depends upon the mean temperature, and various other circumstances. In Haberlandt's experiments, at about 40 F., it required twenty-two days for germination; at about 50 F., the plant was equally advanced in nine days; at 60 F., in three and three-fourths days, and at 65 F., in three and three-fourths days.

There is usually one hoeing or cultivating of the field before thinning, and then cultivations after thinning. Like the corn plant, the beet plant requires frequent stirring of the soil during growth; and unless this be attended to, the farmer need not expect success. It is a maxim in Germany that, "The beet requires much hoeing," and again, "Hoeing makes sugar." Yet care must be exercised not to continue the hoeing too late in the season. The beet plant usually makes leaves before it makes much root, and the leaves elaborate the carbonic acid from the atmosphere, form product, and store the product in the root. Hence there are two stages of growth to be observed—the first that of leaf growth, the second that of root growth. During the first stage frequent cultivation is very beneficial; but when the leaves are formed, then all cultivation should at once stop.

In lifting the beets at harvest, a spade is used to loosen the earth and pry up the root, which is then freed from earth by knocking two roots together, and then thrown into a pile, the leaves having been first cut off by a strong blow with a long knife. The piles are then immediately covered with leaves for protection from the sun, and to prevent the drying effect of wind, so that the beets may not become wilted, which is prejudicial to their value to the manufacturer, as well as diminishing in weight for the grower, who sells by the ton, and is therefore equally interested in preventing evaporation from taking place. Machinery has also been used for the digging, and its action is well spoken of.

When the pulp from the factory is returned to the soil, through the feeding to cattle and using the dung, the beet crop is not very exhausting; and a competent authority, T. T. Fuhling, asserts that the substances resorted to the soil by the manure resulting from the feeding of 2,300 pounds of hay, together with the refuse or pulp, is sufficient to restore the fertility which the average crop has removed, thus:—

	Nitrogen.	Phosphoric acid.	Potassa.
	lbs.	lbs.	lbs.
Substances abstracted by a full sugar-beet crop	36.4	15.8	96.4
Substances returned in the manure from the pulp	19.8	9.5	19.0
Substances returned in 2,300 lbs. of hay fed out	32.0	4.8	33.2

An examination of this table shows that a supply of phosphoric acid and potash is indicated, and that, under circumstances of abundant manure, a supply of phosphoric acid in the form of a superphosphate would be beneficial. Indeed, experience shows that a superphosphate in the drill should generally be used, not only to hasten the early growth of the plant, so as to push it ahead of dangers incident to the young state, but it also acts specifically in increasing the fibrous roots of the plant, and thus renders it better fitted to feed upon the plant food in the land.

The teachings of those who have written on beet culture seem to furnish the following rules:—

1. Use stubble land.
2. Use land of deep and permeable soil.
3. Plough in the manure deeply, and harrow thoroughly.
4. Use artificial fertilizer in the drill.
5. Plant thickly, and as early as possible.
6. Cultivate intensively, *i. e.*, frequently and thoroughly.
7. Harvest as late as the season will allow.
8. Prevent the roots from wilting after they are pulled.
9. Market as early as possible after lifting.—*Liverpool (N. S.) Advance.*

SUGAR BEETS.

(From the Agriculturist, Fredericton.)

The Sugar Beet Seed imported from Germany by the Department for Agriculture has been pretty well distributed, so that farmers can obtain it with as little trouble as possible. Agricultural Societies and others who have not already sent their order to the Secretary for Agriculture should do so as soon as possible. We would urge every farmer in the Province to give the Sugar Beet a fair trial, so that he may know from actual experiment the cost of raising it. This information is necessary before a company would go to the expense of raising a factory. In adopting this course the farmers run no risk of loss, as there is no doubt but that the beets are as valuable as any other root crop for feeding. We would suggest that a correct account be kept of the cost of producing the crop on a given extent of land—which should be accurately measured—all the details should be put down in writing as they occur, so that there may be no guess work.

We have received the following letter from W. D. Perley, Esq, Treasurer of the Sunbury Agricultural Society, which gives the conditions adopted by that Society, and on which prizes will be awarded:—

Maugerville, April 20, 1879.

Dear Sir,—At a meeting of the Sunbury Agricultural Society this day, the farmers expressed a willingness to experiment in growing the Sugar Beet. The following are the conditions: They are to keep an account of the time of sowing, quantity of seed used, the quality and character of the soil as near as possible, the quantity and quality of manure and how applied, if any artificial manure is used state kind, quantity and how applied, the mode of cultivation, the time of harvesting, and the yield by weight and measurement per 1-8 of an acre, with full particulars of cost of cultivation, &c. An accurate account of all the above particulars to be given to officers of the Society on or before the 20th of November.

I am of opinion that thirty or more members of the Society will try the experiment, and I feel satisfied that an honest trial will be made, so that a reliable opinion as regards the cultivation of Sugar Beets can be formed from our experiments. Yours truly,

W. D. Perley.

As many enquiries have been made for information as to mode of sowing and cultivating, we may again give the following as essential: The ground should be a rich mellow loam, well drained, drills from twenty-seven to thirty inches apart, a liberal allowance of well rotted manure spread in the bottom of the drill, as usual for root crops; should special manure be used in addition it may be sown on the manure before covering. After the manure is covered, which should be done by a double mould board plough, the drills should be lightly rolled before making a track for the seed; the seed should be sown immediately after the track is opened, before the earth has time to dry, and

covered with about one inch of soil ; if the soil is dry it may be covered a little deeper. As soon as the plants are well up the weeds should be cut with the hoe or cultivator, and when the plants are about two or three inches high they should be thinned to about ten inches apart; the after cultivation should be sufficient to keep the ground clean and free from weeds. The soil should not be drawn away from the plants as in turnip cultivation.

LUNENBURG AGRICULTURAL SOCIETY.

At a meeting held on the 18th December, 1878, the following were appointed officers for the present year, viz. :—Capt. William Young, *President;* Robert Lindsay, *Vice-President;* John Morash, *Treasurer;* James J. McLachlan, *Secretary;* C. E. Kaulbach, for Central Board.

Directors—Dr. Charles Aitken, John Bailley, sen'r, John Anderson, jun'r, E. L. Nash, Andrew Rodenhiser.

CAMPER ON CATTLE DISEASE.

TRANSLATED BY ROBERT MORROW, ESQ.

(Continued.)

OF THE SIGNS OF CURE AND OF DANGER.

After having heard the symptoms of the disease spoken of, it is natural that you should be curious to know what are the signs of convalescense and of cure. But I have little to say upon this subject. The pestilential sores and eczema (F. gale) which some have observed, are in my opinion very uncertain characteristics. The large quantity of ichorous matter which runs from the nostrils and the eyes, as well as the violent stools, likewise deceive and take place also with those which die. The only and true signs of the convalescense of the animals are when they begin to eat and to ruminate, when the cough decreases, and that from time to time they cough without difficulty. But the desire to eat, which is always feeble at the beginning, may lead to error. Death is certain when the stomach of the animal swells much ; and it is the same when the froth which I have found in the trachea begins to flow from the nose and the mouth. It is possible that they do not die until the eleventh day. I look upon the disease as dangerous as long as they moan, and allow the head to hang and do not ruminate. When they are convalescent, the horns and ears return to their natural heat, because the fever leaves them ; and they then begin to move insensibly the tail and the ears.

Abortion proves nothing, because there are some instances that cows with calf have retained their fœtus ; but these calves are susceptible of being affected with the disease. However, we notice, in general, that calves dropped by cured cows also escape death, or at least there is some hope that this may be the case. In addition, I do not know any sign which may serve to point out that an animal has had the distemper ; for the loss of the tuft of the tail is not a certain proof of it, though some look upon it as such. All the cattle struck with the distemper, which I have seen escape death, have, one only excepted, preserved this tuft of hairs ; and the others lost it in consequence of lying upon it; this mark, although it may sometimes be sure, is very deceitful with such animals. Therefore it is only the honesty of trade which can serve as a guarantee in this respect.

OF THE CAUSES OF THE DISTEMPER.

I pass now to the most difficult part of our researches, to the causes of the distemper. All that I have said up to the present time, we have learned from our own observations or taken from the writings of others ; but who can flatter himself that he may be able to seize upon the secret cause of this contagious virus, which the Supreme Being has been pleased to conceal from our knowledge ? I will follow then the example of Cicero, who, before speaking of the Gods, chose rather to confess his ignorance of their origin, and left to posterity the trouble of making this great discovery.

Some consider as the principal causes of this disease, severe winters, checked perspiration, worms which during certain periods lodge in the blood or in the liver, and lastly corrupt food, of whatsoever nature it may be. I will speak here only of the physical causes abandoning to our theologians those which belong to the moral.

Some have looked upon severe winters as the cause of the contagion, because it was in 1710, after the winter of 1709, that they observed the mortality of the horned cattle, and that that of 1740 was followed by the contagion of 1741, which spread itself very far ; and not to speak of many others, that which prevailed in 1768, after the rather severe winter of 1767. But we have no sufficiently exact observations upon this disease before the year 1711, as I have already said. It must also be remarked that it prevailed for the first time, and with the greatest violence in the southern parts of Europe, in the mountains as much as in the low and cold countries. The great winter of 1727 was not followed by the contagion, so it seems that the great cold or mildness of the winter contributes nothing to it ; this will appear the more evident if we add to it that according to the testimony of the irrevocable Goelicke, (ibid præf. 1, or page 715) the contagion did not cease to prevail in Germany from 1717 until 1730, but that it always made ravages there, either in one part or in another.

Others among whom must be counted M. Engelman,* think that it ought to be attributed to checked prespiration, and that the horned cattle should be covered during the autumn nights, and bedded in the stable during those of spring (ibid., page 312 and 313), etc. Supposing that this was true, the contagion should prevail less, or even not at all in Guelders, in Veluwe, in the Province of Drenthe, and elsewhere, where in order to save the manure, they keep the animals in the stable during the night, as much even during all the summer as in the spring and autumn.

However, according to the observations which the learned and estimable M. Van Lier has been pleased to communicate to M. Van Doeveren and me, it is certain that this has not caused any alteration in the Province of Drenthe. M. Van Doeveren, brother of my colleague, has written the same thing of Dutch Flanders ; and M. De Man, doctor of the town of Nimeguen, has done me the honor of informing me at my request, that in the district of Cleves the cattle generally remain in the stable during the night, and that nevertheless the mortality has there been considerable, having commenced during the summer of 1767, at Hoog. Elten, from whence it spread itself by slow degrees towards Betuwe.

But supposing that this was true, how is it then that there has been no mortality in Switzerland ? where, according to M. Engelman himself (ibid., page 314 and 315), the contagion is not known, although the great Haller of Berne replied to me, the 14th January, 1769, upon some questions which I asked him, "That the horned cattle pass the night in the pastures as long as the season permits." From whence we must conclude that the building of sheds in the meadows, in order to shelter the cattle at night, would be of no service.

Some philosophers have attributed the cause of the distemper to worms which reside in the blood ; such was the opinion of Kirckerus, of Bernardino Bono, of Andry, and particularly of Vallisneri,† upon the occurrence of the distemper of 1713. But all the hypotheses of men have only a season ; at this period they ascribed all diseases to worms, in the same manner as the chemists have attributed all to alkalies and acids. They should begin by showing that these worms really exist in the blood, in order to reason after upon it at ease. It is the same

* Harl. Verh., tom VII., page 297.

† Nuova idea del mal contagioso de'Buoi tom II op. omnia, page 12.

in my opinion, with those who attribute the distemper to flukes in the liver; whereas we know that these worms are found among all herbivorous animals, and even cause their death, without, however, any contagious disease resulting from it.

The field spider, the mould, which is only a cluster of air plants, the mildew, stagnant water, the hay, or such other corrupted fodder ‡ can no longer be considered as the causes of the disease; seeing that they always exist, and that, in all times, the contagion depends upon a viciated atmosphere, and that it slowly spreads from place to place without its course being hastened or retarded by the wind. It was slow in coming from Italy into our country; from 1710 until 1714, and from 1741 until 1744. We can say the same of the contagion now prevailing, which spread itself very slowly in the small extent of our country. But, suppose that the causes of which I have first spoken took place, I will ask if, before the year 1714, there was not as much stagnant water, bad fodder, field spiders, mildew and flukes (distoma hepaticum) as at this period and why the disease was not noticed until after it had penetrated as far as us?

In short, to what must it be attributed that all these causes act only once upon horned cattle? whilst experience obviously proves to us that the cattle which have once had this disease and have been cured of it are never attacked again, although all the causes pointed out, and the impurities of the atmosphere, always have existence, and notwithstanding they permit them to graze in the midst of sick animals, and that they drink from the same vessels and eat the food which is found infected with the slaver (F. bave) of those which die.

You will then ask me what is this distemper? To what must be attributed its first origin; and although we may know that it came to us at first from Asia, and particularly from Persia, from what cause did it there take rise? I will answer, as it is to be wished that all naturalists had done, that I do not know, that it is beyond my understanding, and doubtless that of all men. All that we know of it is that the contagion came from some other place by the ambient air, and that it strikes our cattle with death; that it must not then be attributed to the climate of this country, nor to mould or mildew, neither to stagnant water nor food, nor to our way of pasturing the animals, or to any such other imaginary cause whatever this may be.

Some endeavour to make us believe that the Swiss, who, according to their way of thinking, know so much better than other nations, were the only ones who took the wise precaution to give to their cows, each time they milked them, a little salt and a certain mixture known among them under the name of "geleck," as do our farmers, whose cows certainly surpass in beauty, in abundance of milk and in cleanliness those of all other nations; and could teach them how to protect their cattle from the disease.

I have already shown that the contagion has prevailed in Switzerland as well as in this country; but this question is completely settled by a letter from Haller, of which this is the substance: "They "certainly give here much salt to the "horned cattle to lick; but I do not think "that to this should be attributed their "preservation. I have never noticed "that medicines have done much good. "But we take great care to prevent all "communication with diseased animals. "More than once we have experienced "this ill-fortune; but then we have kept "the stables shut, and prevented the "animals from going out of them. Some-"times even, for the prevention of this "contagious disease, we have killed all "the cattle of a village which were found "to be infected with it, and by this "means we have preserved the remainder "in health."

This is the testimony of an educated man of great reputation, and that in a matter which concerned his own country.

As long as we are not able to prevent this scourge, we must expect to see ourselves attacked by it, even if we should inhabit Arabia Felix, where our lands would be watered only by limpid brooks, and where sea salt would be found naturally mixed among the grass of our meadows.

(To be Continued.)

‡M. H. J. C. Berger shows this very clearly in his "Gedanken von der Seuche des Rundviehes," etc., Konigl. Grosbr. Churfurstl. Landwirthschafs Gezelschaft nachrichten, vierte Sammlung., page 380, where it says: In one place where there were sixty-five cows, they removed from it seventeen at the time when the contagion broke out, to another stable two miles from thence. All had pastured in the same meadow and had eaten the same fodder. The forty-eight which were kept together, all died, and only the seventeen driven elsewhere remained healthy; evident proof that it is not to the food that we must attribute this disease.

CATTLE DISEASE IN THE UNITED STATES.

Among the Parliamentary papers issued on April 5, was "Correspondence connected with the detection of Pleuro-pneumonia among Cattle landed in Great Britain from the United States of America." It begins with a telegram of January 30 last, from Lord Salisbury to the British Minister at Washington, notifying that pleuro-pneumonia had been detected in a cargo of cattle on board the ship "Ontario," from Portland, and that the Government were consequently considering whether they could retain the United States under the exemption of Part IV. of the fifth schedule of the Act of 1878. A large number of communications from Sir E. Thornton, Mr. Archibald (our Consul-General at New York), Mr. Crump (our Consul at Philadelphia), and American agriculturists and others to whom they applied for information, give details representing the extent to which pleuro-pneumonia existed in the United States. The principal centre of the disease seems to be a cowhouse at Brooklyn, where as many as 800 cattle are housed at a time, and are fed with hot swill from an adjoining distillery to increase the production of milk. The cattle never get out of the place in a healthy condition, and but few alive, the pleuro-pneumonia killing them off at the rate of several per day. Professor M'Eachran, veterinary inspector for the Dominion of Canada, who discovered this nursery of disease, also found much pleuro-pneumonia in the State of Virginia. Agricultural officials in the State of New York express a strong disbelief in the existence of pleuro-pneumonia in that State, or anywhere in the United States, in the contagious form, though they believe that cases of the sporadic form of the disease have occurred. From Connecticut the report is to the effect that one herd of cows in that State is plainly affected with contagious pleuro-pneumonia, but the disease is not epedemic. One or two similar outbreaks previously have been controlled by slaughter and quarantine. A veterinary surgeon belonging to the Board of Health of New Jersey reports that in that State pleuro pneumonia has existed, and does exist to a more or less degree at the present time; but has never assumed the epizootic form, and usually occurs in isolated cases. The editor of the *American Agriculturist* says:—"We have occasionally a few scattered cases of pleuro-pneumonia occurring in ill-conducted dairies, but it is not of an epizootic character, and remains in the stables where it originated. Among grazing cattle there is now no disease reported in any part of the country." An official return from the health officer of the district of Columbia states that in October last there were cases of pleuro-pneumonia in farms near Washington, which were described in the papers as an outbreak of "rinderpest." The correspondence contains several remonstrances from the United States Government against the step taken by the Privy Council in withdrawing the States from the list of countries whence live cattle may be exempted. On February 1, Secretary Sherman issued an order making compulsory the examination of all live cattle shipped from any port of the United States, and prohibiting their embarkation until a certificate of their freedom from disease had been given by the inspector. In communicating this order to Lord Salisbury, the American

Minister in London, on February 19, expressed the hope that "these precautionary measures may have some influence in inducing Her Majesty's Privy Council to rescind or modify their Order of the 10th inst." In reply, the Lords of the Council, under date of February 27, say they "are aware, from their own experience, that no system of inspection at the port, however perfect, affords complete security against the introduction of pleuro-pneumonia. So long, therefore, as that disease exists in the United States, their lordships regret that they are unable to modify the Order of February 10."—*Agricultural Gazette.*

SUGAR FROM BEETS.

The sugar trade of the United States amounts in value to $81,000,000 annually. The first beet sugar was made in Germany in the beginning of this century. It has expanded very rapidly during the last thirty years. There are now about fifteen hundred beet sugar factories in Europe. Twenty square miles are planted with sugar beets in Germany alone.

For successful beet sugar making are required, first, the best varieties of seed; second, good tillage; third, proper fertilization. Under these conditions success is possible over all the northern States. A good sugar beet should contain at least twelve per cent. sugar, and as little else as possible. A mellow, deep, rich sandy loam is the best for sugar beets. A heavy clay soil is unsuitable, also a rich virgin soil, full of vegetable matter in an undecomposed condition. The beets should not grow too large, a weight from one to one and one-half pounds is the best. The best yields of sugar run up to six, seven and eight thousand pounds to the acre. The average yield is from eleven to seventeen tons of beets, giving from eighteen hundred to three thousand pounds of sugar, besides molasses. The molasses is not fit for human food, but it is either fed to stock or distilled; after distillation the residue is evaporated and potash salts extracted, one factory alone in Germany making two hundred thousand pounds of saltpetre from this waste substance. The leaves of the beets may be packed in pits, covered over, and kept for winter feeding. Their value is estimated at about six dollars per acre. In addition to this the beet-cake from the factory, left after extracting the sugar, amounts to about four thousand seven hundred pounds per acre, worth for feeding purposes about sixteen dollars. With a proper rotation of wheat, beets, fodder corn, barley, wheat and beets again, with moderate fertilization for the wheat and fodder crops, the land is kept in good heart, and the fertility increases. A sugar factory can be built for $25,000 capable of producing fifteen thousand pounds of refined sugar a day. Sugar beets at a distance from a factory can be dried by artificial heat at a small cost, and will then keep any length of time without injury, and are transported at a cheap rate.

The leaves and beet-cake fed together with a little hay make excellent feed for dairy cows, giving a good flow of milk and communicating no bad flavor to the milk or the butter.—*Prof. Englehardt's lecture before the Vt. Dairymen's Association.*

THE BEET SUGAR INDUSTRY.—ITS RELATIONS TO RATIONAL FARMING.

(From the Country Gentleman.)

The fact that within the last six or eight months from twelve to fourteen joint stock companies have been formed in the United States and Canada for the manufacture of sugar from beets, proves most conclusively the great interest taken in this industry. No doubt this interest has been largely stimulated by the success which the Maine Beet Sugar Company obtained within six months after its organization, and with so surprisingly small an amount of capital. The beet sugar industry in the United States occupies at present a very unenviable position. Nearly everybody hopes it will succeed; very few have confidence that it will, and still fewer have sufficient confidence to risk money and reputation as successful men in it. Nobody denies that the few pioneers in it have up-hill work all the time, and if ever success crowns their persistent efforts, they will deserve the credit for which they work so hard.

What are the difficulties which have to be overcome before the beet sugar industry can find a sound and sure foothold in the United States? In dividing the two parts of this industry which necessarily have to be combined, the production of the raw material, *i. e.* the sugar beet or agricultural part—and the extraction of the sugar from the same bringing it in to a merchantable form—the mechanical part—we find no difficulty or obstacle in the latter. The sugar beets raised here contain as much sugar in the same form, and this is as easily extracted and finds as ready sale as the same from beets grown in any country of Europe. But when we turn to the first part, the picture changes wonderfully and exposes the rock on which every establishment has split which has tried the manufacture of beet sugar. Without sugar beets there can be no beet sugar.

The Maine Beet Sugar Company had no difficulty to take out of beets as much sugar as is done in Europe with the best skill and most perfect machinery; they had no difficulty in doing it as cheaply as it is done in Europe, and the sugar was as good, and being unadulterated, found as ready sale and sold even one-quarter cent per pound higher than the best-looking doctored sugar of New York. But—and here comes the rub—the Maine Beet Sugar Company had contracted with about 850 farmers for the supply of sugar beets and furnished seed to over 1,000 more, without contracting for the delivery of beets, and the whole beet crop raised and delivered to the Company was barely sufficient to supply the works for fifteen days, while two square miles of land, in good condition and properly cultivated, would have given a whole season's supply, say 150 working days; would have given to 150 men during that time remunerative employment, and would have given to the company a fair profit; while under the present farming system most farmers failed even to put their beet seed into the ground, and others would not take the trouble to cultivate them; hence the 150 men in Portland, anxious for work, had to keep idle during the winter, excepting the 15 days, and the Maine Beet Sugar Company held barely their own, instead of making a fair profit.

The first, greatest and, in fact, only difficulty in the way of the beet sugar industry, is a system of farming that has made the ground non-productive and farming unremunerative, and compels the farmer to do a great deal of hard work in order to secure a comparatively small supply of the necessaries and comforts of life. This system of spoliation is the great difficulty to be overcome before the beet sugar industry can flourish here. It has driven a part of the agricultural population of the Eastern States west to practice the same spoliation on new land and on a larger scale, and it has driven another part of the agricultural population into the cities, to become tradesmen, clerks, mechanics and day laborers. It has made the times hard, *and it will keep the times hard*, as long as it is persisted in. Any mechanic or laboring man would be a fool to leave a city if he could have but six months' work a year, at from $2 to $3 a day, where he has to work from 8 to 10 hours per day, and try to find employment on a farm, where he has to work for 50 to 60 cents per day (even if he receives food), and has to work from 12 to 15 hours each and every day, Sundays perhaps half the time (shores.)

In order to equalize the difference of remuneration between farm labor and mechanical or city labor, one of three things has to be done: bring mechanical or city labor in a forcible way still farther down, bring agricultural labor in a forcible way up by strikes of all the grangers, &c., or else improve farming in such a way that the farmer can and does produce more with less labor. The first

two are unnatural, and therefore hardly worth considering, while the third is the only rational way out of our dilemma. Make a fair amount of labor expended on a farm yield a fair amount of comforts of life in return, and our overcrowded cities will soon be relieved of their surplus population.

The beet sugar industry will, in more than one way, help to bring the good old times back to us. Can any one of those who feel called upon to discourage its introduction, and call its pioneers humbugs, point out to the public any branch of farming which really pays, into which any man could put money and have safe and sure returns? Look at the dairy farmers, still worse, or at grain raisers, while fattening cattle is altogether wasting money, investing a dollar to get 75 cents back, and have hard work in the bargain.

Without remunerative farming no lasting national prosperity; without rational cultivation of the soil, no remunerative farming is possible. Where the beet sugar industry flourishes, farming naturally does flourish also, the two are one and inseparable, as every country in Europe proves. Why then not foster them? You cannot help one without helping the other; success in either, means once more prosperity to the whole nation. ERNEST TH. GENNERT.

Alvarado, California, April 21.

BEET SUGAR AGAIN AND AGAIN.

THE following items show that the Beet Sugar enterprise is being taken hold of in several of the New England States:—

Beet raising is attracting much attention since the sugar experiment has been entered upon in Maine. We understand that some of the leading farmers of Hampshire County in this State, sent a delegate to Portland to inform himself as to beet culture and sugar manufacture, and report as to whether the sugar beet can be profitably raised and sugar made in the Connecticut valley. The beet is already raised there in small quantities and there is a growing opinion that enough will be raised to run a sugar factory if the necessary capital is forthcoming.

This reminds us that the farmers of Rockingham Co., N. H., are also moving in the matter of beet sugar, and have made arrangements for a series of lectures on the subject by Dr. U. B. Blackwell of Maine. Large quantities of imported sugar beet seed have been received, to be issued to the farmers by the Portsmouth Grange for planting in this vicinity. This organization proposes to offer liberal premiums for the largest and best growths of the same.

Boston parties have been making inquiries as to the facilities offered for starting a beet sugar factory in the vicinity of Northampton, and whether the farmers could guarantee a sufficient supply of beets in case a factory is started at once. The farmers feel that it is not too late for that enterprise to succeed this year, and there are local capitalists who are ready to share in the investment in case the Boston men appear. A meeting of the Northampton farmers, to hear an address from Dr. Blackwell, on beet sugar making, was to be held at the town hall, April 12.—*Agriculturist.*

NOTES FROM THE RURAL GROUNDS.

EULALIA JAPONICA ZEBRINA is one of the few novelties that has proven of great value. It is one of the hardiest and most striking of grasses, and has here passed three winters in safety without any protection.

"FASCINATION."—This new Coleus, offered this season for the first time, is really beautiful, and seems to merit all that the descriptions in catalogues claim—which is phenomenal.

IN light soil, plant the corms of Gladioli, if large, six inches deep. This will so support the flowering stalk that it will need no stake, unless growing in an exposed situation. A mulch of old barnyard manure, applied about the first of July, will be found to increase the size and durability of the flowers. Scarifying the surface of choice bulbs will induce the formation of bublets which will bloom the second year and bear flowers true to the parent name.

CUT FLOWERS.—For a bed of flowers to make bouquets from during the season, few plants are better than Verbenas and Pinks. Of the latter, Heddewigii, Diadem-flowered, Cut-leaved and the Chinese double are the best. They will bloom (if the seeds are sown early) during the summer, and by the aid of a little protection will again bloom freely another year. Verbenas may be bought for seventy-five cents per dozen, which, if pegged down, will soon fill a bed six feet in diameter. No other colors are more brilliant than those of choice Verbenas. Both the flower itself and its freshness of color endure well. Years ago, thousands were propagated and sold where one is now. But we can do no better than to apologize for our neglect and restore the plant to its old favor.

PANSIES.—The secret of *large* Pansies, like that of large Strawberries, is rich soil, good drainage and moisture. Both are benefited if they escape the mid-day sun. There are many pretty bedding flowers from which to choose, but we should feel lost without Pansies—they are to the garden what the clown is to the circus.

HERBACEOUS PLANTS.—Fashion, like history, repeats itself, and glad are we that there is on every hand a disposition to return to hardy herbaceous flowers. One tires of ribbon beds. They are expensive and monotonous. They are showy—that is all—and it is showiness maintained at a wicked cost. Herbaceous plants give us an endless variety of form and color, and they bloom from earliest spring till latest fall. When once planted, they are planted for years, and need no further care than the circle of earth about a tree. Those of our readers who are yet poor and lazy, and fond of a pretty garden, are advised to procure hardy herbaceous plants. The following are a few which we have selected as suitable for general cultivation:

Phalangium Lilliago, Anemone Japonica and fulgens, all of the Aquilegias, Dicentra eximia and spectabilis (Bleeding Heart), Ipomœa leptophylla, Asclepias tuberosa, Geranium sanguineum, Aster Novæ-Angliæ, Delphinium azureum and formosum, Astilbe Japonica, Campanula rotundifolia, Centranthus ruber (Jupiter's Beard), Gentiana Andrewsii, Chelone obliqua (Turtle-head), Clematis recta, Gillenia trifoliata, Convallaria majalis (Lily of the Valley), Coreopsis lanceolata, Iris Kæmpferi, Cypripedium spectabile (for boggy places), Funkia ovata and subcordata (blue and white Day Lily), Liatris (Blazing Star) scariosa and punctata, Lobelia cardinalis and syphilitica (Cardinal Flowers), Lychnis Chalcedonica (Maltese Cross), Lysimachia Nummularia (Moneywort), for vases, carpets or rockwork; Mertensia Virginica (Virginia Lungwort), Yucca filamentosa and angustifolia, Vinca minor (Periwinkle), which will make a beautiful evergreen carpet where grass will not grow; Spiræa Aruncus (Goat's Beard), Sedum Sieboldii (Siebold's Stonecrop), Pyrethrum tchihatchewii, which will cover the soil if too poor for grass; but it ought to be in every collection on account of the sweetness of its specific name, if for no other reason; an assortment of the French Lilacs (Phloxes), Pentstemons.—*Rural New Yorker.*

[Sedum Sieboldii is not hardy.]

CANNING VEGETABLES.

SWEET CORN.

Corn is considered one of the most difficult things to can, but Mr. Winslow's patented process makes it comparatively easy.

This is Winslow's mode of canning corn:—Fill tin cans with the uncooked corn cut carefully from the cob Scrape the cob enough to get the milk, but not so much as to loosen any of the hulls. The corn must be freshly gathered, and not allowed to be in the sun a moment after plucking; the sooner it is cut from the cob and in the can the better. As

soon as the can is filled seal it hermetically. Put the cans when filled and sealed into a boiler, surround them with straw to prevent them striking against each other when boiling; then cover them with cold water. Set the boiler over the fire; heat gradually. Let them boil, after the water gets to the boiling point, one and a half hours. Then puncture the top of each can to allow the escape of gasses, but seal immediately after, and let them boil two and a half hours longer. In packing the cut corn into the can all the milk that flows out while cutting it must be put into the can with the corn.

CORN AND TOMATOES.

This combination is much liked by many, and, very singularly, when mixed, there is none of the trouble often experienced in canning corn alone.

Scald, peel, and slice ripe tomatoes; they should not be too ripe. About one-third corn to two-thirds tomatoes, or, if preferred, equal parts. Cook the corn in its own juice twenty minutes in a steamer to avoid the necessity of adding any water. Cook the tomatoes in a porcelain kettle five minutes, in only their own juice; then add them to the corn; stir well together till they boil up once, and can seal immediately.

We have never tried this, and should fear the corn would need longer cooking, but it comes well endorsed from several good authorities.

STRING BEANS.

Next to tomatoes string beans are among the easiest vegetables to can. String them by pulling off the rough strings or bindings on either side; break into two or three pieces, and throw into boiling water till scalded all through, but not cooked, then can and seal immediately while boiling hot.

TOMATOES

should be ripe, but not at all softened, and be sure they are freshly gathered. Pour boiling water over them to remove all of the skins. Melt red sealing wax, and add a little lard, as the wax alone is too brittle. Have it all ready in a tin on the stove, if the tomatoes are to be put in tin cans. Put the tomatoes in a porcelain-lined preserve kettle, add no water, but cook in their own juice, taking off all the scum which rises. Stir with a wooden spoon. Have the cans on the hearth filled with boiling water. When the tomatoes have scalded all through over a good fire, and boiled up once, empty the hot water from the cans, set them in a pan of boiling water over the stove, and fill them with the scalded tomatoes. Wipe off all moisture from the top of the can with a clean cloth, and press the cover on tightly. While one presses the cover down hard with a flat knife let another pour carefully round this cover the hot sealing-wax from the cup, which should be bent to lip, so it will flow all around the cover in a small stream. Hold down with the knife a minute till the wax sets; continue in the same way till all the cans in readiness are filled. Now take a flat poker, or the blade of an old knife no longer useful, heat red-hot over the coals, and rub it round on the sealing-wax, to melt any bubles that may have formed. Notice if there is any noise from the tops of the cans like escaping gas. If so, it is not tight enough, and the steam is escaping. Examine if any holes are found anywhere about the can, and wiping them dry, cover with wax, while the cans are yet hot.

Boil down what juice may be left over after the cans are filled, season and use for catsup.

If glass jars are used instead of tin cans, screw the covers tight, wrap in paper, and set in a dark, cool place. We much prefer glass to tin for all such purposes, and especially for tomatoes, because the acid of the tomatoes acting on the tin gives a disagreeable taste, and we doubt if they are as wholesome as glass or stone.—*Christian Union.*

A FARMHOUSE DIRGE.

BY ALFRED AUSTIN.

The following verses—true to nature and to country life—are taken, a few, here and there, from the very touching domestic sketch in the *Contemporary Review* for January:—

I.

"Will you walk with me to the brow of the hill, to visit the farmer's wife,
Whose daughter lies in the churchyard now, eased of the ache of life?
Half a mile by the winding lane, another half to the top;
There, you may lean o'er the gate and rest; she will want me awhile to stop,
Stop and talk of her girl that is gone, and no more will wake or weep,
Or to listen rather, for sorrow loves to babble its pain to sleep.

* * * * *

IX.

"Will you lean o'er the gate, while I go on? You can watch the farmyard life,
The beeves, the farmer's hope, and the poults, that gladden his thrifty wife;
Or, turning, gaze on the hazy weald,—you will not be seen from here,—
Till your thoughts, like it, grow blurred and vague, and mingle the far and near.
Grief is a flood, and not a spring, whatever in grief we say;
And perhaps her woe, should she see me alone, will run more quickly away.

* * * * *

1.

"'I thought you would come this morning, ma'am. Yes; Edith at last has gone;
To-morrow's a week, ay, just as the sun right into her window shone;
Went with the night, the vicar says, where endeth never the day;
But she left a darkness behind her here I wish she had taken away.
She is no longer with us, but we seem to be always with her,
In the lonely bed where we laid her last, and can't get her to speak or stir.

* * * * *

2.

"'Yes, I'm at work, 'tis time I was. I should have begun before;
But this is the room where she lay so still, ere they carried her past the door.
I thought I never could let her go where it seems so lonely of nights;
But now I am scrubbing and dusting down, and setting the place to rights.
All I have kept are the flowers there, the last that stood by her bed.
I suppose I must throw them away. She looked much fairer when she was dead.

* * * * *

5.

"'She never wished to be smart and rich, as so many in these days do,
Nor cared to go in on market days to stare at the gay and new,
She liked to remain at home and pluck the white violets down in the wood;
She said to her sisters before she died, "'Tis so easy to be good.'
She must have found it so, I think, and that was the reason why
God deemed it needless to leave her here, so they took her up to the sky.

* * * * *

7.

"'The young ones don't seem to take to work as their mothers and fathers did.
We never were asked if we liked or no, but had to obey when bid,
There's Bessie won't swill the dairy now, nor Richard call home the cows,
And all of them cry, "How *can* you, mother," when I carry the wash to the sows.
Edith would drudge, for always Death the hearth of the helpfullest robs.
But she was pretty, I could not bear to set her on dirty jobs!'

* * * * *

9.

"'Some day they'll have a home of their own, much grander than this, no doubt,
But polish the porch as you will you can't keep doctors and coffins out.
I've done very well with my fowls this year, but what are pullets and eggs,
When the heart in vain at the door of the grave the return of the lost one begs?
The rich have leisure to wail and weep, the poor haven't time to be sad;
If the cream hadn't been so contrairy this week, I think grief would have driven me mad.

* * * * *

11.

"'Must you be going? It seems so short. But thank you for thinking to come;
It does me good to think of it all, and grief seems doubled when dumb.
'An the butter's not quite so good this week, if you please, ma'am, you must not mind,
And I'll not forget to send the ducks and all the eggs we can find;
I've scarcely had time to look round me yet, work gets into such arrears,
With only one pair of hands, and those fast wiping away one's tears.'"

* * * * *

X.

"Come, let us go. Yes, down the hill, and home by the winding lane,
The low-lying fields are suffused with haze, as life is suffused with pain.
The noon mists gain on the morning sun, so despondency gains on youth;
We grope, and wrangle, and boast, but Death is the only certain truth.
O love of life! what a foolish love! we should weary of life did it last.
While it lingers, it is but a little thing: 'tis nothing at all when past."

The JOURNAL OF AGRICULTURE

—is published monthly by—

A. & W. MACKINLAY,

No. 10, GRANVILLE STREET,

HALIFAX, NOVA SCOTIA.

TERMS OF SUBSCRIPTION:

Fifty cents per annum—payable in advance.

Single copy *five cents.*

Printed at the Office of the *Nova Scotia Printing Company,* corner of Sackville and Gahville Streets, Halifax, N. S.