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NOVA SCOTIAN
JOURNAL OF AGRICULTURE

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CONTENTS:

The Field and Farm Yard.

AGRICULTURAL CHEMISTRY.

Under an enlightened system of Agriculture, a knowledge of the science of Chemistry is essential for carrying on farming operations. The object of Chemical science is to teach the nature of the elementary substances of which the universe consists, and the manner in which these substances or "elements" as they are technically called, enter into chemical combination one with another, so as to give rise to compounds which differ in appearance and qualities from both or all of the substances of which they are composed. Thus the two gases, Oxygen and Hydrogen, when chemically united in the proportion of eight parts of the former to one of the latter both lose their gaseous condition, and form a new substance, WATER, which is therefore a compound substance, although long regarded by the ancients, and still spoken of in common language, as one of the "elements." Chemistry is therefore a most important science, and one of most extensive application, its laws pervading the whole of the organic, as well as the inorganic world. It is not, however, its general topics of interest that claim our attention in the *Agricultural Journal*, but those special phenomena which have a direct relation to the art of farming.—Even here, however, we shall find reason to admire the beautiful manner in which the hidden operations of nature are drawn forth and exemplified by the principles of science.

In the olden time, even in times that in Nova Scotia, are not yet olden, the application of farm yard manure was the only known means of enriching the soil, or of increasing the amount of produce; and this application was made without reference to those principles, upon the efficacy of which all manurial applications depend. But in the present day it is fully perceived by all enlightened agriculturists that a knowledge of the *theory of manures*, and the practical application thereof must proceed upon a knowledge of the chemical composition of *soils*, of *plants*, and of *animals*. The object of the farmer in all his processes of culture and feeding are to bring about certain results which act under invariable laws, or rather to avail himself of the conditions under which those laws are most freely developed. His text book is nature. And as all his processes, both cultural and feeding, are special modifications of general phenomena, having reference to organised beings, in their relation to inorganic matter, he requires to proceed under a full recognition not only of the laws of chemistry, but also of the laws of life. For the purely chemical studies of our agriculturists have resulted in too strong a tendency to regard the plant as a mere machine, to which certain materials are given in the crude state of soil and manure to be manufactured into a desired form. The delicate structures of the plant by which such processes are accomplished, as well as the whole vital phenomena attending them, are not sufficiently considered; but it is essential that these be studied if our object be to facilitate their action, which is indeed the great object of farming. To the agricultural aversion to physiological and botanical studies is no doubt attributable the neglect of those means of improving our farm plants which have in the gardener's hands borne fruit so bountiful, while it is equally certain that the repeated failures to add to our lists of known crops, arises on the one

hand, from an absence of practical knowledge of the real wants of the farm on the part of botanists and horticulturists, and on the other, from the want of a sufficient amount of botanical knowledge on the part of farmers to give them trust in novelties and the means of ascertaining those peculiarities necessary for their successful culture.

The reciprocal relations of Soil Plant and Animal, must therefore be ever kept before us in their physiological capacities while we discuss the relations of chemistry to practical farming.

Professor Daubeny, of Oxford, remarks that one of the most beneficial aids of chemistry is to impart greater precision to the known and familiar methods of culture, by pointing out the causes upon which their efficacy depends, and thus to enable the agriculturist to employ greater discrimination in their use; while another not less important practical end is that of furnishing a clue to the discovery of new and economical sources for materials of acknowledged utility in husbandry, and instructing us how to preserve, in all their integrity, the constituents on which their virtue depends. The diffusion of scientific information among farmers is valuable, not merely as regards the attainment of truth, but likewise in the exclusion of error. While it promotes the progress of agricultural knowledge in a right direction, it guards at the same time against the evils produced by fanciful hypothesis.

How interesting says Johnston, it is to contemplate the relations, at once wise and beautiful, by which organic matter, intelligent man, and living plants, are all bound together. The dead tree and the fossil coal lie almost useless things in reference to animal and vegetable life. Man employs them in a thousand ways as ministers to his wants, his comforts, or his dominion over nature; and in so doing he himself directly, though unconsciously, ministers to the wants of those vegetable races which seem to live and grow for his use and sustenance. How beautiful also does the contrivance of the expanded leaf appear! The air only contains one gallon of carbonic acid in 2500, and this proportion has been adjusted to the health and comfort of animals, to whom this gas is hurtful. But to catch this minute quantity, the tree hangs out thousands of square feet of leaf, in perpetual motion, through an ever-moving air; and thus, by the conjoined labours of millions of pores, the substance of whole forests of solid wood is slowly extracted from the fleeting winds.*

The contrast and antagonism between the processes of animal and vegetable life, whereby they counteract each others effects, and give rise to harmonious action in the phenomena of nature, are well shown in a table given by Dumas and Boussingault:—

An Animal is	A Vegetable is
An apparatus of Combustion or oxidation.	An apparatus of reduction or deoxidation.
Possesses the faculty of locomotion.	Is fixed.
Burns Carbon	Reduces Carbon.
" Hydrogen.	" Hydrogen.
" Ammonium.	" Ammonium.
Exhales or gives off Carbonic acid.	Fixes Carbonic Acid.
" Water.	" Water.
" Oxide of Ammonium	" Oxide of Ammonium.
" Azote.	" Azote.
Consumes Oxygen.	Produces Oxygen.
" Neutral Azotised matters.	" Neutral Azotised matters.
" Fatty matters.	" Fatty matters.
" Amylaceous matters.	" Amylaceous matters.
Gum and Sugar.	Gum and Sugar.
Produces Heat.	Absorbs Heat.
" Electricity.	Abstracts Electricity.
Restores its Elements to Air and Earth.	Derives its Elements from Air and Earth.
Transforms organized into mineral matters.	Transforms mineral into organized matters.

Whilst animals are endowed with organs of locomotion, and other apparatus giving them great powers of *selecting* their food, vegetables are, on the other hand, stationary organisms, dependent for their supplies upon the earth and air immediately around them. Even plants, however, have certain powers of selecting from the substances presented to the absorbent surfaces of their roots, according to the researches of Saussure, although these are not always sufficient to prevent the absorption of injurious matters. We are also required to keep in view that while an animal feeds on food (such as plants and flesh) already organized, and ultimately restores its element to the earth and air, the plant, on the other hand, feeds on inorganic substances, and transforms mineral into organised matters. Soils in different countries and in different parts of the same country present the substances required by plants in varying proportions, these differences arising partly from the peculiar geological character of the district, that is the nature of rock or sub-soil upon which the surface soil reposes. In nature there is a subsisting distribution of vegetable forms, in strict accordance with the varieties of soil constituents, each species of plant flourishing most abundantly on the land richest in its requisite inorganic materials. There are no exceptions to this rule, and modifications occur only where others step in, such as heat, light, and moisture,—for all these are essential to a healthy vegetation.

Plants are composed of two kinds of materials, termed respectively, Organic and Inorganic. When the plant is burnt, the organic constituents are completely consumed, while the inorganic remain in the form of ash, being in fact, incombustible. It must be kept in view, however, that all the organic matters of the plant, which, together with water, form the great proportion by bulk and by weight of its tissues, are originally derived entirely from, or rather consist of inorganic matter.—The plant is, in fact, a living structure reared from a minute seed, which gathers from around it the requisite materials, so far as these are placed within its reach. If these materials are provided in sufficient abundance, and in proper form, the structure will be perfected, the organism will attain the full developement of which its species or variety is capable. But on the other hand, if the materials are not placed within its reach at all, then the seed will germinate, exhaust its own resources, and die; or if they are supplied in inadequate quantity, then it will put forth its shoot to pine out a lingering existance, as is often manifested to us by the starved vegetation of a barren soil.

* Johnston's Elements of Agricultural Chemistry and Geology, 6th Ed. p. 41.

PEDIGREE OF "BEAUTY," A SHORT HORN DURHAM COW.

Roan, calved January 13, 1856. Bred by Thomas Arkell, Little Farnham Farm, Puslinch, near Guelph, Canada West. Imported into Nova Scotia, October, 1866, by G. Lawson.

Got by Kossuth, 619, or 1753 of vol. 3. Dam, Snowdrop, by Durham, 1488.

g. d. Flora by Wellington, 183.

g. g. d. Victoria by Agricola, *alias* Sir Walter, (1614)

g. g. g. d. Beauty by Snowball, (2647)

g. g. g. g. d.—by Lawnsleeves, (365)

g. g. g. g. g. d. —— by Mr. Mason's Charles, (127)

"Beauty" is dam and grand-dam of most of Mr. Arkell's fine herd of Short Horns, at the Little Farnham Farm, including the calf "Nobleman," recently purchased by F. R. Parker, Esq., for $100, and is now in calf to "The Yeoman," a pure Short Horn, bred by Mr. W. F. Stone, of Guelph.

AGRICULTURE AT THE PARIS EXHIBITION.

The Paris Exhibition is not to be a mere "Fancy Fair," as some suppose, but a genuine exhibition of the results of skill and industry applied to the materials and forces of nature. We have in the newspapers a full description of the arrangements for agriculture, of which a brief resume may be given. There is to be an Experimental Farm established in connection with the exhibition on the Ile de Billancourt, a short distance from the Champ de Mars. One part of the farm will be assigned to barn machinery, such as threshing machines, winnowers, chaff-cutters, root-slicers, &c., in operation.—The process of fowl-fattening will go on; the manufacture of starch, sugar, alcohol, butter, cheese, wine, oil, bee-keeping, preparation of wax and honey. There will be forges at work, and artificers making baskets, cooper-work, wooden shoes for men and iron shoes for horses, charcoal, drain tiles, pipes, bricks, artificial manures,

&c.; the process of disinfecting animal matter likewise.

The second part is to be devoted to farm implements in motion by animal or steam power, ploughs, reapers, &c. Periodical sowings will be made, to show the working of sowing and hoeing machines. Measures will be taken so as to represent each month the labours of the season.

The third part will be arranged to exhibit specimens of natural and artificial meadows, drainage, irrigation, raising water, &c.; here the merits of mowers and horse rakes will be compared.

The fourth part will be reserved for culture of beets, potatoes, turnips, and other root crops, with the most improved implements.

The fifth part is to be assigned to special culture, mushroom beds, water-cresses, roses, gooseberries, strawberries, violets and other flowers of which large crops are grown to supply the cities.

Exhibitors in these departments are to arrange beforehand with the superintendent of the department, who will prepare a daily programme of what is to take place. Raw materials, horses, oxen, steam power, &c., will be placed at the disposal of exhibitors at cost price.

Sales of animals will be held periodically on the Ile de Billancourt. Various naval and life boat experiments will likewise be shown.

HISTORY AND CHARACTER OF THE SOUTH DOWN SHEEP.

(Continued from preceding number.)

Mr. Culley, in his *Live Stock*, 1807, notices the exertions "of the ingenious Mr. Ellman, whose flock is already superior to that of most of his neighbours, in carcase, quantity, and quality of wool." This enterprising and skilful breeder did not, however, content himself with mediocrity; and in the *Annals of Agriculture*, vol. xx. p. 224, Mr. A. Young thus speaks of Mr. Ellman's Southdowns:—"His flock, I must observe, is unquestionably the first in the country, the wool the finest, and the carcase the best proportioned. Both these valuable properties are united in the flock at Glynde. He has raised the merits of the breed by his unremitting attention, and it now stands unrivalled." Mr. Ellman's own description of them is very unpretending. He says (*Annals of Agriculture*, vol. xvii.) they "are now much improved both in shape and constitution; they are smaller in the bone, equally hardy, with a greater disposition to fatten, and much heavier in carcase when fat.—They used seldom to fatten until they were four years old; but it would now be a rare sight to see a pen of Southdown wethers at market more than two years old, and many are killed before they reach that age." Doubtless the age is reckoned, as is usual with sheep, not from the time when lambed, but from the time of the first shearing,—a point always to be borne in mind unless the contrary is expressed.

When any spirited individual commences a system of improvement, he communicates a stimulus to others, and if he have the public good at heart, diffuses around him the means by which others may be enabled even to compete with himself. Certain it is, that Mr. Ellman's improvements led to the rapid amelioration of the Southdowns throughout the whole of their range; and now if we look at the quotations in the Smithfield market, we find the estimation in which they are held.

The average dead weight of the Southdown wether varies from eight to eleven stones, but at the Christmas show there are usually some pens in which the sheep average eighteen or twenty stones; but these are picked sheep, and fed high for the occasion.

No sheep are more healthy than the Southdowns. They are seldom affected by the rot, nor do they often suffer from hydatids in the brain. This general good health is owing partly to the nature of their pasturage, their change of food, and the good fresh air of the breezy hills, and partly to their journeys of two or three miles twice a-day from the fold to the pasture, and from the pasture to the fold, a plan of treatment which the Leicesters would not bear, and one of the reasons why they will not succeed on the Downs.

To the alteration in the character of the wool of the Southdowns we have already adverted. We may here add, that the hogget wool, that which is left on the sheep untouched till the second shearing, and which was always used as a combing wool, has decidedly become more valuable since the present system of management; while its length is very considerable, it is finer than the ordinary long wools, is far more disposed to felt, and is applicable to more numerous and more profitable purposes.

Though the Southdowns succeed best on our southern ranges of chalk hills, yet they have penetrated into almost every part of the country, and generally thrive where locality and soil suit them. The northern hills, however, where the Cheviots and Black-Faced breeds prevail, are unsuitable for them. Crosses between the Southdowns and other breeds of middle-woolled sheep have been found to answer very well; and indeed in Western Sussex the prevalent stock is a breed apparently between the Somersets and the Downs, and heavier than the latter. In Hampshire the old black-faced race is crossed by the pure Southdown. The latter has either usurped the place of, or greatly modified the old Berkshire, and this race prevails in many parts of Kent, while the Romney Marshes bred a breed of long-woolled and valuable sheep which has existed there time immemorial. The Wiltshire sheep is but a variety of the Southdown; and in Dorsetshire, Norfolk, Suffolk, and Cambridgeshire, crosses with the Southdown prevail; indeed the Southdowns are contending not unsuccessfully with the old breeds of those counties, and may perhaps, if not supersede them, curtail the extent of their range.

On the other hand, in many parts of Sussex, Somersets and Dorsets are kept for the sake of early lambs for the London market; these lambs are ready for the market often before Easter, while the Down lambs come to the market in June or July. In the vicinity of Petworth (a market town in the hundred of Rotherbridge and rape of Arundel) great numbers of grass lambs are fed for the metropolis. The breed there kept is the Dorset (a horned breed), and the ewes drop their lambs in December, and nearly to the time of yeaning are kept on stubble grounds, then on turnips and artificial grasses. After the removal of the lambs the ewes are fed as high as possible—that is, if the farmer has not expended his food on the lambs—and put with the ram.—Ewes impregnated at this early season are valuable to the house lamb farmer, who purchases them from the field lamb farmer, and if successful may count upon profit.

The great mart for the sale and purchase of wool in Sussex is at Lewes; a stock market is held every fortnight, and a wool fair is held on the 20th of July.—A fair is held at Petworth, on the 20th of November, for sheep; at Chichester, on the 20th of October; at Lindfield, on the 5th of August; and at Finden, on the 14th of September.

Throughout a great portion of Kent, along the range of the North Downs, where the ground is open, and is covered with short pasturage, the Southdown sheep are extensively cultivated. But Romney Marsh and the adjacent tracts constitute the head-quarters of a long-woolled breed known as the Romney Marsh sheep. In some of the more eastern parts of the county a mixed breed is found between these sheep and the Southdowns. They are kept on the upland pasture grounds, and yield a good and serviceable wool. On that portion of Kent called the Weald great numbers of Romney Marsh lambs and Southdown wethers are fed during the winter. At this season of the year the grazing lands are covered with stock of different kinds, but throughout the summer months comparatively few sheep are to be seen.

In the county of Surrey the Southdown breed extensively prevails, and is well suited to the short feed of the chalk hills; but there are smaller varieties of this race on some of the wild and sterile heaths so

abundant in this county. These small *hardy sheep* are celebrated for the excellence of the mutton; and among them the Banstead Heath sheep have long been famous. This small breed is clad in a short, thick, and close fleece—a circumstance of some importance—but the mutton is unrivalled. The Merry Monarch, Charles II., loved Banstead mutton; nor has it yet lost its reputation.—*Martin, on the Sheep.*

OFFICIAL REPORT ON THE SEASON'S CROPS IN THE U. STATES.

DEPARTMENT OF AGRICULTURE,
Washington, D. C., October, 1866.

The condition of corn has suffered some deterioration from early frosts and excessive rains; but the quantity of the crop is larger than the largest ever previously chronicled in the country. A final summary of its amount and quality will be given in the next report.

In the production of wheat, next to corn our most important cereal, our agriculture has been unfortunate for the past three seasons. The crops of 1862 and 1863 in the North were good, and exhibited a gratifying increase as compared with the crop of 1859. The year 1864 witnessed a slightly diminished product, followed by a further diminution in 1865, in quantity as well as in quality. Lest misapprehensions of the extent of this decreased supply should prevail, the returns and estimates of these years should be viewed in a group:

Estimate for twenty-two States.

	Bushels.
In 1859	132,934,782
In 1863	179,404,782
In 1864	160,695,823
In 1865	143,522,829

The estimate for the present year, now nearly complete, will not vary much from 143,000,000 bushels, showing a small per centage of decrease, which is fully compensated by the comparatively superior quality of the grain, as was predicted in a preceding number. This is ten millions of bushels more than the crop of 1859, and is within five millions of a product in proportion to the increased population.

The diminution in the South is more apparent. The estimates point to less than seventeen millions of bushels in the eleven States hitherto unreported—a fraction less than five-tenths of the crop of 1859.

It is worthy of remark, in connection with the diminution of the three past seasons, that the wheat crop of England has been likewise deficient since 1864.

The California wheat harvest, of which little mention has been publicly made in connexion with the present crop, is excessive. In 1860 the product of this young State was nearly six millions of bushels. Now, it is seriously claimed by leading California agriculturists that the surplus for export will be nearly double that quantity.

It is evident that the entire wheat crop will exceed by several millions that of 1859, when the yield was reported at 173,104,924 bushels. Then there were five and a half bushels to each individual; in 1866 the estimates point to five bushels to each inhabitant. There is no ground, then, for apprehensions of scarcity, and little excuse, in the amount of the crop, for starvation prices.

The yield of oats is extraordinary, and the quality excellent. The indications point to an increase from 171,497,072 bushels in 1859 to 271,912,695 in 1866. It is the only crop in the South that maintains an equality with its last census exhibit.

Hay is less in quantity than in the previous year by from one to two tenths, but is better in quality.

An analysis of the southern returns up to October 1st does not warrant a reduction of the former cotton estimate much below one and three-fourths million of bales, though it is too early for final estimates. Increasing severity of damages from insects is reported.

ISAAC NEWTON,
Commissioner.

THE CROP OF 1866 IN SCOTLAND.

We extract the following from the *Edinburgh Evening Courant*, of 23rd November. The season in Scotland has been remarkably similar to our own:

By what might almost be termed an unnatural inversion of the season, there was a severe and protracted drought in the spring and summer months, and an equally protracted course of wet weather during the autumn. The crops suffered from both, though in a less degree than was at one time feared. Hay was undoubtedly a light crop on the whole; specially so in the high-farmed lands of the east coast, but approaching an average in Ayr and Galloway on the one extreme, and Caithness on the other. The wheat crop seemed to thrive in the weather that was so adverse to others, and is reported a full average bulk. The extreme drought appears, however, first to have hindered the full development of the grain, while the subsequent wet and cold prevented it ripening, and the consequence is that many samples look meagre and immature, especially those from latish districts.—Still there is a very fair yield of wheat—as respects quantity we should say an average—but deficient in quality and condition compared with late years, and on an average not over 62 lb. per bushel. Prices have of late rapidly advanced, and we quote white, 62 lb. to 63 lb., at 60s. to 70s.; red, 6 lb. to 12 lb., at 57s. to 62s.

The crop of barley, notwithstanding that in some gravelly soils it was burnt up for want of moisture, and that in other districts it has suffered in harvesting, is admittedly our best crop this year; and being fully an average yield per acre, and the breadth sown being in excess of former years, we may fairly assume that a considerably larger disposable quantity is available for the trade. The quality and condition are also generally satiafactory, for though discoloured, there is little or no sprout, and the barley is found on trial to be superior in malting. A very active demand having sprung up for England, prices began early to advance, and now range for all malting qualities from 54 lb. to 57 lb. at from 40s. to 47s., 48s., and even 50s. per qr. Cheaper distilling qualities, 36s. to 38s. per qr. The average weight is about 54 lb.

Oats are deficient in breadth sown, and very deficient in yield, so that we are justified in estimating them at three-fourths of an average crop in respect of quantity, while there is a great variety in the quality, and much that has been reaped in the western and other late districts will be fit only for feed. Very fine samples, such as we are accustomed to in Scotland, will be scarce; nor can we hope for heavy grain. A fair proportion will, however, be good sound 42lb. to 43lb. oats—the average, we should say, not more than 40lb. Prices are remunerative, and for anything of good quality at 42lb. to 43lb. up to 30s. and 32s., and even 33s. is paid. Cargoes from the northern ports at 27s. to 29s. per qr.

The acreage devoted to beans, peas, and tares, was less than usual, and the yield is also deficient, although none being yet thrashed, a very correct estimate of the result is not practicable.

Potatoes are a very large crop everywhere, and the disease seems to have made but partial progre s. High prices being current—say £4 to £5 per ton—farmers are sending very freely to market.

Turnips.—The dry weather in the beginning of the season rendered a resowing in many cases necessary, and in heavy soils the plants came up very sparingly; and although great progress was made in the autumn months, the crop is very deficient in all the south-eastern counties, but elsewhere fully an average.

ON PEAT CHARCOAL AS A FERTILIZER IN NOVA SCOTIA.

[FROM AN OLD MANUSCRIPT.]

The chief object attainable by the application of manures, is the renovation of the soil; and every substance known to possess fertilizing principles is carefully sought after by every successful cultivator of the ground. Hitherto our chief sources of manure have been derived from animal excreta, and putrescent substances, thus rendering the supply of bread stuffs too much dependent on the keeping of live stock. Every effort to successfully avoid

this dilemma has proved ineffectual; the substances as substitutes for putrescent manures, have generally proved too expensive, too limited in their supply, or transitory in effect, to enable us to extend the cultivation of the soil beyond limited bounds. We now feel happy in the anticipation of a remedy for these defects, and congratulate the agricultural world on the advantages likely to result from Mr. Rogers' discovery of the properties of Peat Charcoal. So numerous are the qualities exclusively assigned to this description of charcoal, that were it not for the highly creditable sources of the evidence in its favour, we might have classed it with the quack medicines professing to cure all diseases. To save its character from such a fate, many eminent practical agriculturists and horticulturists have come forward to testify to the satisfactory results of Mr. Rogers' experiments with Peat Charcoal. Dr. Lindley, in answer to a correspondent, says—"use it for your onions, but it is good for everything." Mr. Rogers says—"it acts upon all that the soil produces, I except nothing." Mr. Fenwick states "that nothing can exceed it as a top-dressing for grass lands;" and adds, "that he will write his name with Peat Charcoal on the best grass and it will be the greenest part of the field in ten days."

We have seen no directions for manufacturing Peat Charcoal, but apprehend there is but one way of charring any substance, namely, to provide a sufficient quantity of the material in as solid a form as possible, and dry it sufficiently to facilitate construction. The mass being thoroughly ignited, cover it with earth to prevent flame, which would reduce the peat to ashes. From the simplicity of the processes, and the great abundance of the materials in Nova Scotia, large quantities might be produced during the summer and autumn, and stored away for use as required. Its well known property of attracting and fixing ammonia, renders it certain that it would not deteriorate by keeping, and could be extensively useful as an absorbent in stables and yards; adding largely to the quantity of manure, and rendering the air pure and healthy, and no doubt becoming an instrument of preventing many malignant dieases to which the animal kingdom are at present liable. As we consider this subject of much importance to the agricultural community, we may state that at a meeting held in the Mechanic's Institute, Southamptor Buildings, Chancery Lane, London, the attendance being large,—the numbers exceeding eight hundred persons, embracing many members of the different scientific bodies,—who at the close of Mr. Rogers' lecture, unanimously passed the following resolution:—"That the experiments have been fairly and openly performed, and that the results have satisfied the predictions and sustained the facts advanced by Mr. Rogers' in his lecture."

GRANTS IN AID FOR 1866,

Made by the Board of Agriculture to the various District and County Agricultural Societies, organized under the Act for the Encouragement of Agriculture.

ANNAPOLIS COUNTY.

Bridgetown Agr. Society,	$61.00
Eastern Annapolis Agr. Soc'y.	57.00
Paradise Agr. Soc'y.	122.00
	$240.00

ANTIGONISHE COUNTY.

Antigonishe Agr. Soc'y.	$162.00

CAPE BRETON COUNTY.

Boularderie Agr. Soc'y.	$89.00
North Sydney Agr. Soc'y.	66.00
Sydney Agr. Soc'y.	85.00
	$240.00

COLCHESTER COUNTY.

Shubenacadie Agr. Soc'y.	$63.00
Stirling Agr. Soc'y.	67.00
Upper Londonderry Agr. Soc'y.	57.00
Upper Stewiacke Agr. Soc'y.	53.00
	$240.00
Onslow Agr. Soc'y. (special grant)	40.00

CUMBERLAND COUNTY.

Amherst Agr. Soc'y.	$53.00
Minudie & Barronsfield Agr. Soc'y.	73.00
Parrsboro' Agr. Soc'y.	76.00
Wallace Agr. Soc'y.	38.00
	$240.00

DIGBY COUNTY.

Clare Agr. Soc'y.	$88.00
Digby Central Agr. Soc'y.	68.00
Weymouth Agr. Soc'y.	84.00
	$240.00

GUYSBORO' COUNTY.

Glenelg Agr. Soc'y.	

HALIFAX COUNTY.

Upper Musquodoboit Agr. Soc'y.	$46.00
Dartmouth Agri. Soc'y.	48.00
Lower Musquodoboit Agr. Soc'y.	48.00
Western Halifax Agr. Soc'y.	98.00
	$240.00

HANTS COUNTY.

Fenwick Agr. Soc'y of Noel,	$57.00
Hardwoodland Agr. Soc'y.	44.00
Newport Agr. Soc'y.	50.00
Windsor Agr. Soc'y.	89.00
	$240.00

INVERNESS COUNTY.

Mabou & Port Hood Agr. Soc'y.	$61.00
N. E. Branch of Margaree Agr. Soc'y.	60.00
S. W. Branch of Margaree Agr. Soc'y.	61.00
Broad Cove Agr. Soc'y.	58.00
	$240.00

KING'S COUNTY.

Aylesford Agr. Soc'y.	$52.00
King's County Agr. Soc'y.	59.00
Union Agr. Soc'y. of E. Cornwallis,	61.00
West Cornwallis Agr. Soc'y.	68.00
	$240.00

LUNENBURG COUNTY.

Chester Agr. Soc'y.	$56.00
Lunenburg Agr. Soc'y.	50.00
Mahone Bay Agr. Soc'y.	61.00
Bridgewater Agr. Soc'y.	73 00
	$240.00

PICTOU COUNTY.

Egerton Agr. Soc'y.	$52.00
Maxwelton Agr. Soc'y.	52 00
Merigomish Agr. Soc'y.	52.00
Pictou Agr. Soc'y.	84.00
	$240.00

QUEEN'S COUNTY.

Caledonia and Kempt Agr. Soc'y.	$80.00

RICHMOND COUNTY.

Red Islands Agr. Soc'y.	

SHELBURNE COUNTY.

Barrington Agr. Soc'y.	$120.00

VICTORIA COUNTY.

Baddeck Agr. Soc'y.	$56.00
Middle River Agr. Soc'y.	69.00
N. Shore of St. Ann's Agr. Soc'y.	56.00
St. Ann's Agr. Soc'y.	59.00
	$240.00

YARMOUTH COUNTY.

Yarmouth Township Agr. Soc'y.	$118.00

Communications.

FIRST ANNUAL REPORT OF THE ONSLOW AGRICULTURAL SOC'Y.

The officers and members of the Onslow Agricultural Society, in making their first report, would express their gratification that a want long felt in this community has now at length been supplied, by the successful formation of this society.

Though scarcely nine months in existence—the organization having been effected on the 13th March last—it affords us pleasure to report that the roll of members already reaches the number of 77, and there is every prospect of a further considerable increase during the coming year.

At the first meeting it was unanimously agreed that our efforts be at once directed to the improvement of live stock, by the purchase of bulls of improved breed; in accordance with which the directors pro-

cured, in the spring, three superior animals of the Durham breed, whose progeny, it is confidently anticipated, will make a change for the better in the appearance of the stock of the country.

One of these having a lump grown on his under jaw, which threatened to be serious in its consequences, was sold at a meeting held in October, resulting in a loss of $50 to the Society. His place, however, was supplied, at the same time, by the purchase of the full-bred Durham "Sir Gaspard," from the Society of East Cornwallis. The services of these animals are given to members at fifty cents, and to non-members at one dollar.

Their cost and maintenance, as will be seen from the subjoined statement, have more than absorbed the whole funds of the Society. Arrangements were made, however, at the meeting in October, by which the keepers have agreed to take the proceeds of service, at the rates above named, as remuneration in full for cost of maintenance for the year commencing at this date; so that, but for the present debt, the whole funds of the coming year would be available for futher improvement, in such way as the Society might determine. We would recommend to your consideration the propriety of making a change in the breeds of sheep and swine.

The directors acknowledge with thankfulness the generous aid rendered by the Central Board of Agriculture, by their special grant of forty dollars,—manifesting thus their sincere desire to encourage us in our efforts.

RECEIPTS.

Subscription from members	$77.00
Provincial grant	40 00
Proceeds of Bull sold in October	10.00
For service of Bulls	129.50
	$256.50

EXPENDITURE.

Cost of three Durham Bulls in April	$176.00
" one " in October	50.00
Expenses of maintenance to date	123.00
Books for Secretary and Treasurer	0.80
Interest on money borrowed	2.25
	$352.05
Deduct receipts	256.50
Balance due from Society	$95.55

At the meeting this day a splendid Boar Pig—three-fourths Berkshire and one-fourth Suffolk—recently brought from Halifax by one of the directors, was purchased for the use of the Society—and located for the season.

Thirty-four new members joined the Society.

The officers elected for the ensuing year are:—*Pres.*, John B. Dickie; *Vice Pres*, Robert Sutherland; *Sec'y.*, George F. Crowe; *Treas.*, Silas Clark; *Directors*, William Blair, Hugh Dickson, T. Perley Putnam, William Lynch, Daniel Ross.

JOHN B. DICKIE, *Pres.*
GEORGE F. CROW, *Sec'y.*

December 4th, 1866.

THE ANNUAL FAIR AND CATTLE SHOW AT WINDSOR.

Windsor, October 30, 1866.

The Annual Fair and Cattle Show of the Windsor Agricultural Society was held on Tuesday the 9th inst. The attendance was better than for several years past. There were several pairs of very fine fat oxen on the ground. The number of working oxen was large and some of them very good.

There was a very good show of bulls and cows; some of the latter particularly fine, comprising specimens of most of the best breeds in the province.

The young stock in two year old heifers, yearling heifers, bull and heifer calves, were very creditable to the breeders and owners.

An unusual number of sheep were on the ground, the whole of which were good, some superior, and affording proof that this description of live stock is properly appreciated, and receives a fair share of attention from the farmers and stock breeders of the district.

The show of pigs was large and all in fine condition and attracted much attention.

The luxuriant growth of after grass enabled the farmers to get their stock in high condition and added much to the general appearance.

The quantity of grain exhibited was much less than usual, the unfavorable state of the weather for harvesting making it a difficult matter to secure grain of any description in proper condition.

The show of roots in turnips, mangel wurtzel, carrots, &c., was respectable in quantity and very good in quality, while the increased breadth of ground under green crop proves that roots as winter food for live stock are beginning to be estimated at their proper value.

I am, sir, your obd't serv't,
SAMUEL PALMER,
Sec. Windsor A. S.

LIST OF PREMIUMS OFFERED FOR COMPETITION AND PAID BY THE WINDSOR AGRICULTURAL SOCIETY, ON TUESDAY THE 9th OCTOBER, 1866.

NAMES OF SUCCESSFUL COMPETITORS:

Best breeding Mare, John Lawrence	$5 00
2nd do. John Wallace	4 00
Bull, Dr. C. C. Hamilton	5 00
2nd do., John Lawrence,	4 00
Bull Calf, Wm. Haley	1 50
Cow, J. P. Pellew	4 00
2nd. do., A. C. Thomas	3 00
3rd. do., A. C. Thomas	2 00
Pair Oxen, John Alison	5 00
2nd pr. do., John Alison	4 00
Pair Working Oxen, Nathaniel Smith	4 00
2nd do., John Reden	3 00
3rd do., John Kehoe	2 00
2 yr. old Heifer, Timothy Kerr	3 00
2nd do., John Smith	2 50
Yearling Heifer, John O. King	2 50
2nd do., James Dill	2 00
Heifer Calf, Charles Sandford	1 25
Ram, Robert Bacon	3 00
2nd do., Lewis W. Hill	2 00
Ram Lamb, Robert Bacon	2 00
2nd do., Samuel Mumford	1 00
Ewe, Hon. R. A. McHeffey	2 00
2nd do., John Wallace	1 50
Ewe Lamb, John Wallace	1 50
2nd do., Samuel Mumford	1 00
Pair Wedder Sheep, David Scott	1 00
Boar, John Kehoe	4 00
2nd do., Robie McLatchy	3 00
Sow, A. C. Thomas	3 00
2nd do., James Dill	2 00
Best 2 bushels Wheat, Nathaniel Smith	2 00
2nd do., James Alison	1 50
2 bushels Oats, John Wallace	1 50
2nd do., John Mixner	1 00
2 bushels Barley, John Mixner	1 50
2nd do., Charles Sandford	1 00
2 bushels Buckwheat, David Scott	1 00
2nd do., John O. King	0 75
Peck Peas, John Mixner	1 00
Peck Beans, James Alison	1 00
Peck Onions, Joseph Alison	1 00
Dozen Indian Corn, John Wallace	1 00
do Parsnips, Samuel Palmer	1 00
do Swedes Turnips, James Reden	1 50
do Mangel Wurzel, P. S. Burnham	1 50
do Yellow Carrots, Samuel Palmer	1 00
do White Carrots, J. M. Geldert	1 00
do Beets, P. S. Burnham	1 00
Pair Geese, John O. King	1 00
Pair Ducks, Samuel Palmer	1 00
Dozen Fowls, David Scott	1 00
20 lbs. Cheese, John Mixner	2 00
30 lbs. Butter, Nathaniel Smith	2 00
2nd do., John Smith	1 50
10 yds. Woollen Cloth (men's) Jn. Alison	1 50
2nd do., Samuel Mumford	1 00
10 yds. Wool. Cloth (women's) Jn. Alison	1 50
2nd do., Samuel Palmer	1 00

SAMUEL PALMER,
Sec. Windsor Ag. Soc.

RAGWORT OR STINKING WILLIE, FINE BEANS, COURASEMO PIGS, AND BAD POTATOES.

HALIFAX, 27th Nov., 1866.

To the Editor of the Jour. of Agriculture.

SIR,—Having read some of the articles in your number for this month with great interest, I had resolved to send you a few lines under the above rather formidable title. Subsequently I found that you had anticipated me, to some extent, by giving the readers of your Journal the benefit of valuable remarks on that most pernicious weed—Ragwort. In the prosecution of my late official tour to the eastern portion of the province, the first town I visited was Pictou. I had not been many hours there before making the acquaintance of "Stinking Willie." Indeed, the impudent fellow would not permit me to take a quiet stroll in the neighbourhood, without intruding himself upon my notice at every step. He was dressed in anticipation of of my visit, I presume, in his gayest habiliments, and I fancied he smelt strongly of brimstone—an indication of the place of his birth. I was informed that the botanical name of this special favourite of the good people of Pictou, whom they have been entertaining for the last fifty years with the utmost hospitality, and who is likely ultimately to become sole proprietor of the soil, is not as you have it, *Senecio Jacobæa*, but *Senecio Balsamitæ*. No matter, however, what name the rogue may assume, his *character* is ever the same. As a rose would smell as sweet by any other name, so would "Willie" stink as pungently! But I must cease to be personal, and go on to say that the result

of my inquiries as to the introduction of Ragwort into Pictou is quite coincidental with the facts you have given; and in my progress through the country I particularly noticed the wide extent to which it is spreading in all directions, as well as its singularly injurious effects on the crops in those numerous fields in which it has located itself. On the coach road from New Glasgow to Antigonish I traced it for about twelve miles. Having a winged seed it is diffusing itself speedily. I noticed especially a field of oats which it had impoverished to a remarkable degree —its peculiar power of absorbing nutriment from the soil being scientifically accounted for by the elaborate analysis of Dr. Anderson. The whole inhabitants of the noble county of Pictou should *instantly* declare an exterminating war against this vile enemy. It seems to me marvellous that a high intellectual people should have allowed it, with perfect impunity, to rear its impudent yellow head in defiant profusion at their very doors, and under their very noses. I question whether the arch sower of tares—Satan himself—has in his extensive and rare botanical collection of noxious weeds, one upon which he looks with poetic favour; and if his satanic majesty were to condescend to offer from that

"Throne of State
Which far outshines the wealth of Ormus and of Ind."

a prize for its best cultivation, the good people of Pictou would be certain to be the successful competitors, and have it formally awarded to them amid the exultant bellowings of the spirits of the vast deep!

As to Beans, on which you have written ably in your last issue, I will only remark that the best common field grown ones in Scotland are produced in great abundance in the "Carse" of Falkirk, twenty miles from Glasgow; and if the Board of Agriculture import a quantity this season—as indicated in your publication—I would respectfully suggest that this class should not be omitted. They can be had through the medium of any respectable seedsman either in Edinburgh or Glasgow.

I come now to speak of animals, for which as a body I have a great respect—partly inspired by the circumstance that the Campbell crest is a boar's head! In order to convince your readers of the fact that I am no mere tyro in Pigology, I will describe good pork, and challenge the most learned of them to specify one quality omitted;—it must be thin in the skin, sweet and thick in the flesh, firm in the fat, and small in the bone. Now, these qualities are wanting, as a rule in the pork furnished by the pigs in Cape Breton. I have much to say respecting that fine island, which during the fall I was for six weeks engaged in exploring; but I am sorry to say the breed of pigs is very inferior. They are large boned animals, with ponderous heads, and most impudent savage looking snouts. Their bristles are very coarse, and along the back are pointed in the form of a mane like the quills of Shakespeare's fretful porcupine! I did see one very fine boar at Mr. Davenport's farm near Sydney.—That gentleman will excuse the liberty I take in introducing his name. I mean to refer more particularly, if spared to write a series of systematic letters in the Province, to the great improvement he has made, as well as to the genuine taste he has displayed in connection with his beautiful property. He has also a very fine bull; and I left the steading sincerely wishing both the bull and the boar the patriarchal distinction of being sires—each after his kind—of large families!

But if the pigs in Cape Breton be wanting in the elements that enter into the composition of good pork, there is one quality in which at least the female portion of them is not deficient, and that is *courage*—as the following amusing incident will prove. In travelling by the mail coach a passenger was accompanied by a dog which delighted in viciously chasing all the farm animals met with on the road. At length our bold canine friend seeing Mrs. Grumphy, whose neck was adorned by a wooden ornament, quietly burrowing by the road side in company with a litter of young ones, made bold to cultivate, by means of his teeth, acquaintanceship with the lady's heels, but she at once faced about with the quickness of a captain of volunteers—presenting a pair of flashing eyes, and formidable ivories—Mr. Dog, on the commendable principle that

"He who fights and runs away,
May live to fight another day;"

whilst

"He that is in battle slain,
Will never live to fight again,"

immediately turned tail and ran for his life, with Mrs. Grumphy following at a pace that would in point of fleetness do credit to the winner of the last Derby!

But I must close this letter, which has already extended far beyond the limits I intended, with a word about potatoes. I only express the result of my own experience, after six months residence in Nova Scotia, having travelled through Halifax, Pictou, and Antigonish Counties, and the island of Cape Breton, where I say that I have *rarely* seen a good potato presented at the dinner table—good in comparison with Scotch potatoes. By a *good* potato I mean a dry, mealy, smiling, well-flavoured article, in contradistinction to the oblong, substanceless, waxy kind so common here. I have never seen, I may here remark, the black potato in Scotland, of which there are not a few grown in this Province. The kind most in favour in Auld Scotland, I speak particularly of the Lothians, a district of country tenanted by the most scientific farmers in the world, are termed "Regents." It is a large, oblong, smooth skinned potatoe, and might prove suitable for the soil of this country.

I have the honor to be,
Sir,
Your obedient servant,
DUNCAN CAMPBELL.

WESTERN HALIFAX AGRICULTURAL SOCIETY.

This Society held its annual meeting on Tuesday, 4th November, in terms of the Act for Encouragement of Agriculture. Amongst those present were V. P. Chas. Hamilton, Esq., in the chair, J. Northup, Esq., J. H. Duvar, Esq., W. C. Silver, Esq., Joseph J. Northup, Esq., Charles Hefller, Esq., S. Tupper, Esq., Henry T. Wright, Esq., and Dr. Lawson.

The Treasurer presented his accounts for the past year, which were examined by Mr. Duvar, the Auditor, and reported correct.

Mr. Silver likewise presented, in the name of Alderman J. D. Nash, a donation of nine volumes of the Journal of the Royal Agricultural Society of England, for which the Society's thanks were voted.

In reference to the live stock owned by the Society, arrangements were made by which city members, as well as those in the country, may in future have the benefit of the animals.

Office-bearers were elected for the ensuing year, viz.:—*Pres.*, Hon. Chief Justice Young; *Vice-Pres.*, Chas. Hamilton, Esq.; *Sec'y*, Professor Lawson; *Treas.*, W. C. Silver, Esq.; *Auditor*, J. H. Duvar, Esq.; *Directors*, Joseph Kaye, Esq., S. Tupper, Esq., Chas. Hefller, Esq., H. T. Wright, Esq., Francis Webber, Esq.

TO CORRESPONDENTS.—Several publications have been received, the notices of which are necessarily deferred till next month.

Miscellaneous.

SMALL TALK.

Warrants have been sent to all the Agricultural Societies in the Province authorising them to draw their annual grants for 1866.—The November number of Mr. Murdoch's History embraces the period (1818) during which Nova Scotians were awakened by the letters of "Agricola" to a due sense of the national importance of agriculture; the Central Society of Agriculture was formed on 15th Dec. of that year.—The editor of the *Canada Farmer* is advocating the increase of goats.—Capt. Hardy read a very interesting paper before last meeting of the Institute on the Beavers and Beaver Dams of Nova Scotia; his infor-

mation had been derived from recent visits to their haunts in Shelburne and Queens.—There are ninety-one millions of rats and mice in England; they consume as much grain as would supply three millions of people daily with a two pound loaf each all the year round.—Minks promise to be scarce this winter, musk-rats are plentiful, foxes and wild cats are increasing, and Halifax county is becoming a perfect bear garden.—The Cattle disease has nearly died out in England.—A substance resembling artificial Tannin has been prepared from bituminous coal and anthracite by the action of nitric acid.—In England the present price of wool is from 34 to 45 cents per pound, and the demand is increasing.—Rat and mole catching was practised as a trade in England in the thirteenth century.—A French chemist has analized the milk of the cat, and finds it very rich in albuminoid (cheese) substance. He may likewise calculate how large a herd of cats will be required to furnish a three-ton cheese such as the Canadian one now on its way to Paris.—Principal Dawson is desirous of obtaining information from Nova Scotians for his new edition of Acadian Geology.—There is a cross between the hare and the rabbit carried out on a large scale in the vicinity of Angoulême, but the owner will only sell his productions in the dead state to hinder discovery of the process employed.—Boussingault has at last proved, by careful experiments, that the under surface of the leaf decomposes more carbonic acid than the upper surface; in some instances the amount being nearly four times as much.—In the Bonn University, the ground floor of the Chemical Laboratory now in course of erection contains 44 rooms, exclusive of vestibule, corridors and closets.—The articles now being collected for the Paris Exhibition are to be shown in January in the Mason Hall for a small admission fee.—The greatest want of our Halifax gardens is in the way of spring flowering bulbs, such as narcissi, crocuses and snow-drops, which give such a charm to English gardens.—Dr. Hassal has obtained a pension from the Civil List for his services in hunting up the adulterations of foods and drinks.—An English nobleman having been treated externally by belladonna by his physician was suddenly seized with cerebral excitement, and the physician found him next day in the hands of a solicitor, three keepers and a mad doctor; beware of belladonna.—The weekly analyses of the water of the different Water Companies in London show the marvellous effects of animal charcoal in removing organic as well as mineral impurities. Formerly there was "meat and drink and physic too in plain cold water;" now it is thin and tasteless.—Dry earth closets in houses are coming into extensive use in lieu of water closets. *Dry* earth has a remarkable power of absorption of offensive matter, and these are economised by the process for agricultural purposes.—As formerly, we expect this month from the Secretary of every Agricultural Society in the Province a concise statement of the crops in his district during the past season, noticing quantity of yield and quality, injuries sustained, &c. All communications of this nature, whether from the officers of Agricultural Societies or others, will be thankfully received, and duly acknowledged in the synopsis of the season's crops to be hereafter published.

EDINBURGH BOTANICAL SOCIETY.

The thirty-first session of this Society was opened on 8th November, when Prof. Balfour, the chairman, made some opening remarks, in which he referred to the death of Dr. Greville, the late president; of Dr. W. H. Harvey, Professor of Botany, Trinity College, Dublin, an honorary fellow of the society, who died on 15th May, 1866, at the age of 55; of Jean Francois Camille Montagne, one of the foreign honorary fellows of the society, a distinguished cryptogamic botanist, who died on 9th January, 1866, at the age of 82; and of Diedrich Friedrich Ludovic Von Schlechtendal, Professor of Botany and Director of the Botanic Garden at Halle, another foreign honorary fellow, who died on 12th October, 1866. It was stated that the following were the number of members on the roll of the society:—Royal personages, 2; honorary fellows, (British), 5; honorary fellows, (foreign), 23; resident fellows, 91; non-resident fellows, 268; foreign and corresponding members, 96; associates, 25; ladies, 11—total, 524. The chairman congratulated the members on the continued prosperity of the society, and alluded to the valuable papers which had been read during the last session, and which are printed in the "Transactions."

ON THE PLANTS OF OTAGO, NEW ZEALAND.

Of tree ferns, 6·81 per cent. of Otago ferns are arborescent. These tree ferns rank, as regards beauty, and frequently as regards height, girth and usefulness, with the exogenous forest trees with which they are generally more or less intermixed. Cyathea Smithii is the most common species in Otago. Dicksonia squarrosa and D. antarctica are also marked tree ferns of the district. In the south island of New Zealand tree ferns are associated with glaciers, snow, and other evidences of an alpine and rigorous climate. There are also found bordering on glaciers, fuchsia trees and cabbage palms, associated with Araliaceæ, Myrtaceæ, and other trees usually regarded as denizens of comparatively warm climates. The largest glacier, Mount Cook, (13,000 feet, in lat. 43½ deg.) which gives rise to the Waivan river, descends as low as 500 feet above the sea level on the west coast of Canterbury, and within eight miles frem the sea. On both sides of this glacier luxuriant forests of tree ferns, Cordylines, Myrtaceæ, and other temperate and sub-tropical types are found. At no great distance from these glaciers are found true palms (Areca sapida). In the mountainous forests and ravines of Nelson, tree ferns ascend to 2000 feet. The acclimatisation of New Zealand ferns in Britain has been lately attracting the attention of horticulturists. Dr. Lindsay, however, doubts whether these plants will be hardy enough to stand the severest British winters without protection. The classification and nomenclature of New Zealand ferns furnish us with some notable instances of the proneness to error in reference to climate, and the definition of genera, species, and varieties. Dr. Lindsay states that thirty species have been made out of Ophioglossum vulgatum, twenty different names are given to Pteris aquilina (the common bracken), and about a dozen species have been manufactured out of Lycopodium clavatum. The variability of the species of New Zealand ferns is remarkable.—*Dr. Lindsay, in Bot. Society's Proceedings.*

TO CORRESPONDENTS.

Literary Communications are to be addressed to Dr. Lawson, Secretary of the Board of Agriculture, Dalhousie College, Halifax. All lists of subscribers and remittances of subscriptions are to be sent to Messrs. A. & W. McKinlay, Publishers, Granville Street, Halifax.

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