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NOVA SCOTIA

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To eradicate couch grass requires repeated ploughing, harrowing, and hoeing. It is the same with prejudices, and we intend to keep at them. In last number of the JOURNAL we took the liberty to urge upon our readers, in a very pointed way, the absolute necessity of growing **Root-Crops** in order to make farming pay well in this Province. We did so because it is our belief that no system of farming can possibly pay well in a temperate climate without root cultivation. But we stated that roots cost more to raise than they are worth after they are raised, and we promised to show in what way the profit is obtained. In the recent discussion on cattle feeding at Inverness by some of the most experienced men from the best cattle districts of Scotland, we have produced another paradox like unto that of root cultivation; it was clearly made out that cattle could not be fattened except at a money loss! Yet none of the Scotch farmers there assembled proposed to give up feeding. The profit in this case is in the manure. We know that ideas of this kind are apt to sound strange in the ears of some of our farmers, and they do so simply because the very elements of systematic practical farming have not been acquired. Dexterity in holding a plough, in mowing hay, in hoeing potatoes, in feeding and caring for cattle,—all these, we allow, are most important qualifications,—but men who possess them are apt to arrogate to themselves an exclusive claim to the rank of "practical farmer." We hold that this is a mischievous mistake. If the man who possesses these qualifications does not likewise possess the higher one of capacity to work his farm on an intelligent system, founded upon the relation-

ships of expenditure to income, of profit to loss, of cost of production to returns of produce, then he is not a farmer at all, but merely a farm labourer. He may be trusted to perform the mechanical work upon a farm, but, wherever a large amount of capital is staked, he cannot be trusted to direct the general system of operations.

We have before us the whole accounts of a Midlothian farm for a period of fourteen years, showing every item of expenditure and every item of income. The tenant paid in money a yearly rental of eighteen dollars for every acre of the 305 acres. He seems to have been satisfied that he made a good enough living, and in every way it is to be looked upon as a fair average Scotch farm. Rents are higher now, labour is higher, but prices of produce are also higher, so that the proportion of expenditure and income must be still very nearly the same. The figures we give are the averages for the whole fourteen years.

In these accounts we find that the whole cost of producing an acre of turnips, (mostly soft white and yellow turnips for feeding), is \$46.00; rent \$18.00—total cost to the farmer of 1 acre of turnips, \$64.00. The value of the crop is \$37.25,—so that there is a loss of \$26.75 on every acre of turnips grown. An acre of grass costs, including \$18.00 of rent, \$19.75, and yields \$12.50,—loss \$7.25. The expense of cultivating one acre of potatoes, including rent and seed, is \$109.00, whilst the value of the produce is \$116.00, leaving a profit of seven dollars. It will be obvious that turnips cannot be continuously cultivated in the same land except at an annual loss of twenty-six dollars per acre, and that potatoes will only yield seven dollars per

acre. Such farming, if confined to grass and turnips, cannot possibly pay, however wisely the produce may be marketed or fed to stock. But the cultivation of these crops has left the fields which they occupied in excellent condition for grain crops. One acre of barley costs for cultivation and rent \$48.00, and gives a return of \$59.50, yielding a profit of \$11.50. One acre of oats costs \$33.50, and gives a return of \$45.50, leaving a profit of \$12.00. One acre of wheat costs \$37.00, and gives a return of \$89.00, yielding a profit of \$52.00.—After paying rent and all expenses, including interest on capital employed, the net annual profit on this farm of 305 acres was \$680.00. We have put all the money in dollars for convenience of comparison.

Now we would like our practical farmers to compare the above figures with the results obtained on their own farms, and then consider whether the oft-repeated statement is true or false that "Nova Scotia is no country for farming." In Britain those who cultivate tens of acres instead of hundreds, are simply laboring peasants, and are now well nigh extinct. Farming is remunerative only on a large scale. If it pays at all in Nova Scotia, on a small scale, how different would be the results with the proper use of capital. We ought to have mentioned that the capital required for the *working* of the Midlothian farm was \$62.50 per acre, so that \$19,200.00 had to be expended before the sales of the first crop could defray any part of the expense.

The complaint we hear most frequently is that our lands won't yield grain, that this is not a grain country. How can we expect our lands to yield grain, how can we expect this to be a grain country,

without a proper system of rotation? If we don't grow roots how can we ever have the land in a condition for grain. The thing is impossible. But, on the west coast of England and Scotland, the difficulties connected with grain growing are much greater than with us. Then we can grow grass and make hay at a profit, instead of at a loss, as it must be done in Britain, and hay may with us take the place of grain to a large extent. With a proper system of rotation, founded upon a sufficient extent of heavily manured green crops, there is no limit to the quantities of oats and barley, and hay, and beef, and mutton, and wool, and cheese, and butter that this Province might produce. If we can't sell coal, let us try to find labour for our unemployed people in extracting food from our own soil, and not send all the money out of the country.

Let our Nova Scotian farmers read the free and unprejudiced opinion of an American farmer who went to England and made a critical examination of "High Farming":—

"I am thoroughly confirmed in my old faith that the only good farmer of our future is to be the "high farmer." There is a widely prevailing antipathy among the common farmers of our country against, not only the practice of high farming, but against the use of the phrase by agricultural writers. This is wrong, and should be at once corrected. Through some misconception of the meaning of the phrase, and of its application, they have come to believe it synonymous with the theoretical 'book farming,' 'new fangled notions,' boasted progress, followed by disappointment and final failure. This is all an error. High farming simply means thorough cultivation, liberal manuring, bountiful crops, good feed, and paying profits therefrom. It is not strange that misconceptions have arisen in the minds of doubting farmers who have been eye witnesses to some of the spread eagle experiments of enthusiastic farmers, better supplied with money obtained in a business they knew how to manage than with practical experience on the farm. Bountiful crops and paying profits, of course, are what all farmers who are depending upon the farm for an income, are striving to obtain, and every year as it passes is re-confirming the opinion that profits are small, and will grow beautifully less where high farming is not practiced."

Our few remarks in last number on Mr. Morrow's "Green Bush" from Ship Harbour seem to have fallen like a refreshing and fertilizing summer dew upon the political papers. The *Morning Herald* has budded out into a profuse blossoming of *Rhododendron maximum*. No fewer than seven letters on the subject have appeared in that paper, and we have care-

fully noted the information they contain, but, as there are still a few points to be determined, we defer an analysis of them till additional facts have been obtained. The Rev. Dr. Forrester, Colonel Chearnley, Mr. Morrow, Mr. Jack, and Mr. Barron, together with their correspondents, Messrs. Archibald, Balcom, and Mackenzie, and probably others, all participate in the "discovery." We are glad that, through the exertions of Messrs. Archibald and Balcom, instigated by Messrs. Morrow and Jack, all doubt on the main point has been set at rest.—Professor How and Mr. Buskirk have suggested some historical points for consideration. A gardener, who is too modest to allow his name to appear in print, suggests very properly that, with native Holly, Heather, and Broom, and this Rhododendron, in our woods, and many other plants comestable, there is an opportunity of changing the aspect of our gardens, parks, and promenades; and, lastly, Mr. Power, of the Public Gardens, with his usual readiness for an emergency, points out clearly how and in what manner all this may be done. Mr. Jack's original idea, some years ago, was to get a large clump of these "green bushes" transferred from Ship Harbour to the Public Gardens, that our people generally might have in view one sample, at least, of how rich our Nova Scotian Flora really is. We suppose he may have been actuated by a desire to put down that too prevalent, and far from patriotic, notion that no good thing can come out of the Nova Scotian woods, except an occasional stick of ship timber, and a few baskets of huckleberries. That Rhododendrons grow and blossom profusely in our climate is shown very well in Mr. Jack's own garden at Bellahill, where Ghent Azaleas likewise thrive. We have seen healthy Rhododendrons through the fence in a garden in Pleasant Street. We are informed that in Mr. Falconer's garden at Dartmouth there are some very old and healthy bushes. Principal Ross has one or two at Morven. There used to be a large one in the Horticultural Gardens, which is now in the Public Gardens, but it is a rather tender sort, and has to be tied up in winter. Mr. Mott has a nice collection of perfectly hardy varieties at Dartmouth. At our own farm, Lucyfield, there is a bank of 300 Rhododendrons and 50 Pontic Azaleas that have stood the winters without the slightest protection of any kind for five years, and any one who would like to see how beautiful they really are when in full bloom, should take a drive out (four miles beyond Bedford) during the last week in June.

The Rhododendron controversy has not been without its joke. A gentleman in Water Street, whose name had been men-

tioned in one of the letters, was waited upon by a customer, whose enquiries brought forth samples of "Strong Baker's," "Patapoco," "Bridal Rose," and such like. The customer, surprised and puzzled, looked at the samples, but at length, as light dawned upon his mind, replied, "I don't want any flour, I want to ask you about that particular f-l-o-w-e-r you found down east when moose-hunting."

The following nominations to the Central Board of Agriculture, by the officers of Agricultural Societies, have been received:—

District No. 1. Halifax County.

Halifax County Agricultural Society, Col. J. Wimburne Laurie, Oakfield.
Lower Musquodoboit Agri. Society, Col. Laurie.
Upper Musquodoboit Agri. Society, Col. Laurie.
Salmon River, Beaver Harbour, Agri. Society, Col. Laurie.

District No. 2. King's, Annapolis, Digby, Union Agri. Society of East Cornwallis, John E. Starr, Starr's Point, Cornwallis.

King's County Agri. Society, Lower Horton, J. E. Starr.
Aylesford Agri. Society, John E. Starr, Starr's Point.
Central Agri. Society of King's County, John E. Starr, Starr's Point.
West Cornwallis Agri. Society, John E. Starr, Starr's Point.
Farmers' Agri. Society of North Eastern Cornwallis, (application for recognition received but not yet submitted to Board), W. E. Starratt, Paradise.
Eastern Annapolis Agri. Society, W. E. Starratt, Paradise.
Bridgetown Agri. Society, W. E. Starratt, Paradise.
Paradise Agri. Society, W. E. Starratt, Paradise.
Township of Clements Agri. Society, W. E. Starratt, Paradise.
Annapolis Agri. Society, James Horsfall, Annapolis.
Port Williams, Ann., Agri. Society, W. E. Starratt, Paradise.
Digby Central Agri. Society, John Dakin, Digby.
Weymouth Agri. Society, John Dakin, Digby.
Clare Agri. Society, John Dakin, Digby.
Union Agri. Society of Digby, St. Mary's Bay.

District No. 3. Lunenburg, Queen's, Shelburne, Yarmouth.

Mahone Bay Agri. Society, Charles E. Brown, Yarmouth.
New Ross Agri. Society, Benjamin Zwicker, Mahone Bay.
Mutual Benefit Agri. Society of Queen's.
North Queen's Agri. Society, Caledonia, C. E. Brown.

Kempt Agri. Society of Queen's County.
Shelburne Agri. Society, Chas. E. Brown,
Yarmouth.

Clyde River Agri. Society.

Barrington Agri. Society, Chas. E. Brown,
Yarmouth.

Barrington West Passage Agri. Society,
Chas. E. Brown, Yarmouth.

Yarmouth County Agri. Society, Chas.
E. Brown, Yarmouth.

Yarmouth Township Agri. Society, Chas.
E. Brown, Yarmouth.

*District No. 4. Hants, Colchester, Cam-
berland.*

Windsor Agri. Society, William H.
Blanchard, Windsor.

Fenwick Agri. Society of Noel, Israel
Longworth, Truro.

Nine Mile River and Harwoodland Agri.
Society, Wm. Blair, Onslow.

Newport Agri. Society, W. Henry Allis-
son, M. P. P.

Utton Agri. Society of Hants County,
Maitland, Israel Longworth, Truro.

Upper Nine Mile River Agri. Society,
Samuel Blois.

Enfield Agri. Society, Israel Longworth,
Truro.

Onslow Agri. Society, Israel Longworth,
Truro.

Shubenacadie Agri. Society, Israel Long-
worth, Truro.

Lower Stewiacke Agri. Society, Israel
Longworth, Truro.

Tatamagouche Agri. Society, Wm. Blair,
Onslow.

Stirling Agri. Society of New Annan,
Israel Longworth, Truro.

Brookfield Agri. Society, Israel Long-
worth, Truro.

Earlton Agri. Society.

Parrsborough Agricultural Society, Israel
Longworth, Truro.

Malagash Agri. Society, Alexander Mac-
kenzie, Malagash.

Minudie and Barronsfield Agri. Society,
Israel Longworth, Truro.

Wallace Agri. Society, T. M. Morris.

Union Agri. Society of Pugwash, Israel
Longworth, Truro.

Scotia Agri. Society of Fox Harbour, I.
Longworth.

*District No. 5. Pictou, Antigonish,
Guysborough.*

Pictou Agri. Society, David Matheson,
Pictou.

River John Agri. Society, D. Matheson,
Pictou.

Egerton Agri. Society, David Matheson,
Pictou.

Merigomish Agri. Society, D. Matheson,
Pictou.

Millbrook Agri. Society, David Matheson,
Pictou.

Morristown Agri. Society.

St. Andrew's Agri. Society, John A.
Chisholm, St. Andrew's.

Arisnig Agri. Society.

Guysborough Agri. Society, Wm. Harts-
horne, Guysborough.

Millford Haven Agri. Society, T. W.
Ferguson.

Glenclyde Agri. Society, Cross Roads, St.
Mary's, David Matheson, Pictou.

*District No. 6. Cape Breton, Richmond,
Inverness, Victoria.*

Boularderie Agri. Society, John Ross,
Grove's Point, Little Bras d'Or.

Sydney Mines and Little Bras d'Or Agri.
Society, John Ross, Grove's Point,
Boularderie.

North Sydney Agri. Society, John Ross,
Grove's Point.

Mahou and Port Hood Agri. Society, John
Ross.

North East Margaree Agri. Society.

St. Ann's Agri. Society, David McCurdy,
M. P. P.

Middle River Agri. Society, John Ross,
Grove's Point, Little Bras d'Or.

WE are glad to be able to record another botanical discovery of considerable interest. Mr. A. W. H. Lindsay, B. A. Dal. Coll., has found the rare anthelmintic fern, commonly called in England the Male Fern, (*Aspidium (Lastrea) Filix-mas*), near to the Salt Well at Whyecocomagh, on the banks of the Bras d'Or Lake, in the Island of Cape Breton. This fern was discovered some years ago at Owen Sound, on Lake Huron, by a very successful lady pteridologist, Mrs. Roy, of Royston Hall, previous to which time it was not known to be a native of the Dominion. In fact, it had only been found shortly before, for the first time in America, somewhere in the northern part of the mountains of New Mexico. Mr. Lindsay has succeeded in adding several very interesting plants to the Nova Scotian Flora, and it is very gratifying to us to be able to add *Filix-mas* to the number of his discoveries, as this is the only fern that is really entitled to a place in the *Materia Medica*. We hope he will be as successful in eradicating tape-worm from his patients in future years, as in the past he has been in discovering that the proper remedy is to be found in our own woods. We are speedily learning to rely upon our own resources, and there is no good reason why we should not grow our own medicines as well as our own flour, and oats, and beef, and mutton, and wool, and raise our own fresh turkeys for Christmas, instead of bringing stale ones from Ohio and Michigan, as was done last year.

Among Mr. Lindsay's ferns, discovered during the past season in the neighborhood of Whyecocomagh, we find the *Woodisia Ilcensis*, a rare species of great beauty. It was likewise found, we believe, during the summer, somewhere about Mahone Bay, in the County of Lunenburg, by another active pteridolo-

gist, the Rev. E. Ball, who is acting at present as Curate of St. Luke's, and whose very interesting collection of native ferns,—no doubt the best that has ever been formed in Nova Scotia,—we hope to be able to give some account of before long.

A NEW Agricultural Society has been formed at Oxford, in the County of Cumberland. The number of Societies throughout the Province is much greater now than at any former time in its history. There are about four times as many now as there were when the Board commenced operations twelve years ago, and twice as many as at the close of the first year of the Board's operations, when strenuous efforts were made to organize Societies in every County. Our Societies are likewise much stronger now, many of them possess valuable thoroughbred Stock, others have funds in hand, and some have real estate.

WE learn by letter from Mr. John Thornton, the London Short Horn Auctioneer, that American ports are now closed against English Live Stock, on account of disease. This will, no doubt, lead American breeders to land their stock in future at Dominion ports, and, as the most convenient ports for them will be Halifax, St. John, and Montreal, it is desirable that the authorities should be prepared for any emergency that may arise. Suppose, for example, that a herd suffering from foot-and-mouth disease were to be landed at any one of our ports. The effect would probably be to spread the disease throughout the country, and to close the United States markets against all Dominion Stock. We had to think over this matter very carefully in view of the possible outbreak of foot-and-mouth in the recent importation of cattle by the Board of Agriculture. Fortunately no trace of disease appeared in any animal, from the time it was first purchased in England, and consequently no difficulty occurred. Had disease appeared on board, the alternative would have presented itself of either having to throw the whole of the animals overboard before coming near the mouth of the harbour, or of landing them on McNab's Island, or some other isolated spot, where they could be cared for, and kept apart from other Stock, until recovered. We do not know whether Pilots, Quarantine Officers, or Harbour Masters take any cognizance of foot-and-mouth or other cattle diseases. If not, some provision should be made in time to ward off, as far as we can, any calamity to our Herds. Total exclusion of importations is, we think, a great mistake in any country, and has completely failed in England. It simply resolves itself into

a protection policy for home stock raisers. Here, where our cattle are always so healthy, and with only two or three great seaports to guard, we do not see any difficulty in preventing the importation of the disease, by a few simple regulations, and well-timed provision for carrying them out. The report telegraphed from Ottawa some time ago, to the effect that foot-and-mouth had appeared at Guelph, was entirely without foundation.

THE decline of SHEEP HUSBANDRY in this Province is a subject deserving of serious consideration. The Editor of the *Colchester Sun* very properly calls attention to the discouragement of this desirable branch of industry by the frequent destruction of sheep by dogs. He cites a proposal made in the *Maine Farmer* to impose a tax upon dogs, and to apply the resultant fund to the payment of owners for sheep killed. It is well observed that sheep husbandry ought to be one of the most important and profitable branches of our agricultural industry, instead of one of the most neglected and insignificant. We see it stated in the *Toronto Globe* that eighty thousand sheep are reported killed during the past year, and an estimate is made that, as many are not reported, the whole number will be four hundred thousand. Need it be wondered that, in the South-West, where dogs do most abound, sheep farming is becoming a thing of the past. This is a reason why we here in the North-East, with hills and valleys, and a cool maritime climate, specially adapted for sheep, should increase our flocks. We don't think that payment should be made to farmers for losses, because that might tend to make careless shepherds; the owners of dogs that kill sheep are the proper parties to pay for them; but we do think that every dog in the country should be registered, and wear a collar with his number and owner's name. A small fee would cover the expense of registration. We regard the watch-dog as a valuable animal,—in many cases a domestic necessity, in the humble, lonely cottage, as well as in the fashionable villa, and entitled to exemption from special taxation like any other useful animal. But, at the same time, the farmers are entitled to reasonable security from his depredations. If properly registered and collared, destructive dogs could be identified, as regards ownership, in a reasonable number of cases,—in numbers sufficient at least to discourage persons from keeping such pests. We are further of opinion that dogs would not have such a bad reputation if flock-masters looked better after their flocks. The unprofitableness of sheep is owing more frequently, we believe, to the owner's neglect than to destruction by dogs, but yet we feel very

strongly that sheep farmers should have every reasonable provision for the protection of their stock, which, from its very nature and habits, is more exposed to accident than any other description of rural property. For various reasons it is desirable to encourage sheep husbandry, which, whilst it might enable our people, in many districts, to derive profit from otherwise useless hill pastures, would likewise provide profitable domestic labour in the idle winter season in spinning, weaving, and knitting, and tend to encourage habits of thrift and industry; but, without reasonable protection from destruction, no efficient encouragement is possible. We respectfully commend the whole subject to the attention of Members of the House of Assembly, and the Sessions.

PLEASANT recollections of Margaree are aroused by a descriptive account of a recent visit to that lone region in the *Dalhousie Gazette*:—"The road along the Margaree is one of the best in Nova Scotia, and the scenery is exquisite. * * * * The farms are generally good, some of them very superior, and several of the farm houses are tastefully built and picturesquely situated, but everything is picturesquely situated in Margaree. * * * *

"We remained a fortnight, a memorable fortnight, 'a joy forever.' We fished late and early, and, oh! such basketfuls of trout! We went forth beetle-hunting, and entrapped flies of divers sorts. We captured and dissected a huge snake. We threw off our coats—seldom on—and worked at the hay. We explored the ravines with hammer in hand, and roamed through the woods. The hottest part of the day usually found us in the coolest spot on the premises, to wit, the dairy, where, seated on empty butter tubs, we 'biped the flow of longicaudate kine,' as the Autocrat hath it. And in the evenings Mac gloried in showing off the paces of his 'gallant grey' as we drove down the valley for a few miles, or returned, singing snatches of songs, in the moonlight and the dew.

"One day we went to the Barrena. A stiff ascent of from three to five miles through very thick woods brought us to the edge of a wide plateau almost destitute of trees. The vegetation is short and scrubby, and everything is covered with lichens. Here and there are deep gloomy gorges, their sides shaggy with sombre firs, and black peaty looking streams silently stealing along in their dark mysterious depths. But the greater part is high table land, bleak and bare. From one point we could see Margaree Island, 25 miles to the west, the Baddeck mountains 30 miles to the south-east, and to the north the highlands and bar-

rens of Cape North 40 or 50 miles away; and as far as the eye could reach in all directions there was not the faintest trace of a human habitation, not a tree cut, nor a track but those of the bear and the cariboo. We were struck by the great abundance of the *Rubus Chamaemorus*, the 'cloudberry' of Scotland, the 'boke apple' of Nova Scotia. We saw no flowers, but in one spot the bright orange colored fruit was so plentiful that we could not step without crushing some.—We ate *ad lib*, and saw that bruin had a liking for them too, as his huge paw had left a frequent mark on the soft and mossy soil. Blueberries are also abundant on these barrens, and bears are particularly fond of them. We spent several hours out on the barrens and then returned through a tremendous ravine, along the rugged and slippery sides of which we floundered, in danger of smashing not only our guns but our heads."

We recommend our Halifax friends, who are wont to scour the surface of land and sea from Niagara to Naples in search of scenery, to get off the beaten track for once, and try the glorious Island of Cape Breton next summer. We know that they may go farther and fare worse. A good summer hotel there might bring birds of passage from all parts of America. Let a few patriotic capitalists lay their heads together and the thing is done.

A DISCOVERY of very great interest to chemists and mineralogists, and of practical importance in the useful arts, has just been made in California. It appears that an extensive deposit of borax, (tincal, or sodium borate), has been found in the bed of a dry lake in the Slate Range mountains. It extends over an area of 15 miles long by 6 wide, with saline crystals to a depth of 6 or 8 feet. An ancient beach mark shows that the water had formerly stood 60 feet deep over the area. In its middle there is a tract 5 miles long and 2 wide of common salt, on the outside a deposit of borate of soda 3 feet thick, and under this latter a stratum of sodium sulphate and tincal mixed, from 1 to 3 feet thick. It is expected the Thibetan tincal will be driven out of the market, as the Californian tincal can probably be used without refining for glazing fine pottery. Those who take an interest in such subjects will recollect of Prof. How's researches on the Borates of the Windsor plaster beds.

A NEW Agricultural Society has been formed in Lunenburg County, at New Ross, of which Mr. John Prat is Secretary. They have commenced operations by advertising for an Ayrshire Bull, having been too late in collecting their subscriptions to get forward to the sale of imported stock.

Mr. PETER J. GRANT, Secretary of the Egerton Agricultural Society, Springville, County of Pictou, writes to us as follows:—"Would you be so kind as to give us the Post Office address of the Secretaries of Agricultural Societies in the first JOURNAL published this year.—Even in Pictou County I do not know the address of one of the other four Secretaries, and letters addressed to me sometimes take two weeks to find me." The addresses will be given in the Annual Report to the Legislature.

Mr. A. H. MCKAY, B. A., Principal of the Academy at Pictou, has discovered a very interesting addition to the Flora of that region in the beautiful northern Fern, *Cystopteris fragilis*. He has found it at Mount Dalhousie Lime Rock, West River, and at Springville, East River, both in Pictou County, growing in damp clefts of rocks, and on the sides of deep rocky ravines, near waterfalls. These are precisely the situations in which the plant grows in Britain and on the Continent of Europe. In western Canada it is found sparingly in swamps. It is often mistaken for *Woodsia obtusa*. We have a Philadelphia specimen named by a good American botanist "*Woodsia Perrenniana*," and corrected by one of the best botanists in Europe to "*Woodsia obtusa*," which is after all *Cystopteris fragilis*. It is a remarkably variable plant, and there are many named varieties in cultivation. Mr. McKay's specimens are more like some of the European forms than any we have seen in America,—long and narrow, the pinnae far apart, and all strictly vertical. We name it provisionally *Cystopteris fragilis* var. *McKayi*.

THE following paragraph from the *Colonial Farmer* contains a hint well worthy of attention:—"The special capacity of women for caring for pets is so well established that it is a matter of surprise that a larger number do not make their natural inclination a matter of profit in the raising of poultry. There is no reason why women may not be as successful as men in this branch of productive and profitable industry. Indeed, when it is considered that the business requires close attention to minute details, patience, and gentleness of manner, woman seems to be peculiarly fitted for the business. The Danbury man's humorous description of the different ways in which woman and man attempt to get a hen into the coop, and the superiority of the former's method, is as true as it is funny. After the hennery or coop is built there is no department of the work that a woman cannot perform without exhausting labor or too heavy demands upon her time.—'Down South' poultry raising is woman's special department, and one need not go

farther South than Baltimore or Washington to find the markets thronged with the female vendors of their own feathered products. That the business is profitable the experience of hundreds testifies, and that it is healthful, and may be attractive, is susceptible of demonstration."

ON THE PRODUCTION OF BEEF AT THE INVERNESS AGRICULTURAL SOCIETY.

Mr. Colvin, Essich, read a paper on the best and most expeditious way of fattening cattle, and producing good beef. In the first place, he remarked that the first thing required to produce good beef was a thoroughly good calf, and a thoroughly good calf could only be got from a good dam and sire. If the calf was a cross, the mother and sire should be respectively pure of their kind. A cross between a pure Shorthorn bull and a pure polled cow or a pure Highland cow would answer the purpose; but, for some cause of which he had seen no explanation, a cross between a pure Highland bull and a pure Shorthorn cow would not do. In his opinion, allowing the calf to suckle its mother was preferable to giving it its milk from the pails. He also thought that the longer a calf was allowed to be on its mother's milk alone the better. The length of time during which milk is supplied varies considerably, but he had read that Mr. McCombie insisted on the calf being allowed to suck, or to be fed from the pail, for six or eight months. It has then strength to stand weaning, and, if properly cared for, will not be checked in its growth, but will retain the good calf flesh it has put on. The loss of the calf-flesh can never be made up, and, if lost, the animal will never yield first-class meat.

An indispensable requisite is a well-ventilated, comfortable house, with plenty of clean, dry bedding. The calves, on being weaned, should be turned out to grazing about the end of July, and an allowance of half a pound of oilcake apiece until they are housed in winter, would materially improve their condition. The calves should be housed for the winter early, and certainly not later than October 1. The houses should be roomy enough to contain six or eight calves.—They should be supplied with oilcake the first thing every morning, then with some fresh straw, and, by-and-by, with a regular and uniform supply of sliced turnips. Cattle at this age will consume from 4 to 5 stone each of turnips daily, and experience has proved beyond all doubt that a regular supply of artificial food is indispensable. As Mr. Pringle says, this will not only prevent waste of flesh, but keep the animal in a profitably progressive state. Further, a low temperature must be avoided, else progress will be re-

tarded, and a great additional expenditure of food incurred. This treatment should be continued until the animal is turned out in spring, and I have found this to be a very critical period with year-olds. When first turned out to graze they are very subject to grass staggers. I believe the cause of this to be the too sudden change of food, and I am informed that if a little laxative medicine were given before sending out the cattle to graze it would materially lessen, if not entirely remove this danger. There can be little doubt, too, that the kind of grass on which the animals are fed, has a great deal to do with it, which shows how careful we should be in regard to the grasses which we sow. It is of the utmost importance, too, that pasture fields should be well supplied with pure running water. The cattle being well summered, the next era in their progress is the wintering; but before taking them in for the winter, the farmer must determine whether he is to fatten them up for the butcher by the time they are two years old, or whether he is to keep them on for another summer and winter. On this point my own experience is that it pays better to feed off at once, and prepare the animal for the butcher by the time it is two years old. I have, no doubt, however, that better and more matured beef would be obtained by keeping the animal on until it is three, or even four years old.

Having, however, determined to follow the course which I think the most profitable, the next point is what is the best mode of treatment during the fattening period; and first, whether stall-feeding, box-feeding, or hammel-feeding is the most profitable and best? My own practice has been to stall-feed, and I have little doubt it is the quickest way to produce obesity and fat; but the result of my reading on the subject within the last day or two leads me to think that I am wrong, and that the most profitable and best way is box-feeding. You will find a very interesting experiment on the subject in the volume of the *Transactions of the Highland Society for 1873*, by Mr. Moscrop, of Yorkshire. The animals selected from were 12 bullocks. On November 4 they were divided into lots of four each. One lot was tied up in the stalls of a byre, another lot was placed in boxes measuring 10 feet by 10 feet; height 9 feet; cubical space when empty, 1100 feet; and the third lot was placed in hammels or sheds having open yards in front. After narrating in great detail the temperature, mode of feeding, &c., the writer gives the quantities and value of the different descriptions of food consumed by each lot during the experimental period of 14 weeks, and as it is not long, I may repeat this part of the experiment. Lot 1 consumed of swedes,

19 ton 19 cwt. ; of straw chaff, 1 ton 16 cwt. ; of linseed cake, 8 cwt. 2 qr. ; and of meal, 7 cwt. Total value of food consumed, £17 15s. 10d. Average cost per head per week, 6s. 4½d. Lot 2, of swedes, 24 ton 17 cwt. ; straw chaff, 2 ton 2 qr. ; linseed cake, 8 cwt. 2 qr. ; meal, 7 cwt. Total, £19 10s. 11d. Average cost per head, 6s. 11d. And lot 3 consumed of swedes, 29 ton, 18 cwt., 2 qr. ; straw, 2 ton, 9 cwt., 2 qr. ; linseed and meal, the same as the others. The total cost, £22 5s. 11d. Average per head, 7s. 11d. This shows that the least consumption of food was by the cattle in the stalls, the next by those in the boxes, and the most by those in the sheds. In round numbers the cost per head per week of lot 3 was 1s. more than lot 2, and 1s. 7d. more than lot 1. Further particulars as to increase of weight, &c., are given, the results being that the greatest profit from a given consumption of food was from the cattle fed in boxes, while the least profitable mode of consumption was by cattle in open yards. Judging, then, from the experiment, I should say that box-feeding is the most profitable way, but this is one of the points raised by this discussion, as to which we may have opinions and experiments as valuable as those I have quoted.

Having, then, determined on box-feeding, the next most important thing is the regular and plentiful supply of the proper kind of food ; and as this depends in great measure on the cattleman, great care should be taken in the selection of the right kind of man for this post. He should have his heart thoroughly in his work. An apathetic, careless cattleman is most objectionable. He should be good-tempered, patient, observant, and active. His whole soul should be in the beasts. He should never be in bed after five in the morning, nor before ten at night ; and he never should be absent beyond a few minutes from his charge. He should, moreover, be cleanly and thrifty, and if to all this you are fortunate enough to have a cattleman with a fair share of general intelligence, so much the better. But I have seen men with very little general intelligence make excellent cattlemen, and what they want are the special qualifications above indicated. Having, then, procured a good cattleman, your next care should be to form a correct estimate of the quantity of food which you have to give, and it is essential to form a correct idea of the time your food is to last. There can be no greater mistake than to lay in more cattle than your supply of food will be sufficient for. The turnips should be taken home and stored by the middle of December. It has been proved by experiments, reported in the *Transactions of the Highland Society*, that the value of

stored turnips was superior to that of those newly drawn from the field. The quantity of turnips consumed by cattle varies. Mr. Pringle, in his work on this subject, says that, as a general rule, cattle which will weigh when fat from 5 cwt. to 6 cwt. will consume from 10 to 12 stone each per day, and cattle that will weigh from 8 cwt. and upwards will use 14 to 16 stone, that is, when fed solely on turnips and straw. The usual rule for fattening cattle is to give them as many turnips as they can eat, with fresh straw or hay, and no doubt excellent cattle are produced in this way, but it will undoubtedly hasten the process if a regular and gradually increasing supply of artificial food is added. The cattle should be fed three times a day, and nothing is more essential than regularity in feeding, both as to time and quantity. The temperature of the byre should be moderately warm, and the regular use of the currycomb is most desirable and advantageous. So much for the treatment. As to the proportion of beef produced to food, as a general rule, it may be stated that 1 ton weight of turnips will produce 14 lb. weight of beef and tallow. The quantity of turnips given per day, of course, varies considerably, as I have already stated. When artificial food is given liberally, 1 cwt. of turnips to 8 stone per day is sufficient. And a very successful rearer of fat cattle in this district has given this as his allowance, 1 cwt. of turnips per day, ¼ cwt. of straw or hay, 4 lb. of mixture, consisting of 2 lb. bran and 2 lb. bruised oats, diluted with treacle water, besides from 2 to 4 lb. oilcake. And he says that, with such treatment, well-bred beasts ought to increase 2 lb. daily.

I have now come to the final consideration of all this fattening and labour being of profit to the farmer, and on this subject I make an extract from a work by J. Coleman on fattening cattle. He says :—" Few pretend to say that house feeding can be made to pay *per se*, but great will be the advantages of the increase in the animals over the outlay in food, and we have the manure as our profit, for that represents a very considerable item. We may calculate that during four months which is about the average time fresh beasts require to be housed, each animal will make from 10 to 12 yards of manure, which, at 6s. a yard, a fair price for such manure, gives a return of from 60s. to 72s. per head." Of course this only refers to the four months of actual fattening ; the profit on the animal from the period of its calving to the time when it is put in to fatten must be added, and if, when the animal is two years old, it produces from £22 to £24, I consider it has been well attended to, and has paid well. I am quite aware that much larger sums

are got, but that involves large expenditure, and not necessarily more profit.

Mr. Paterson, Bahrobert, thought that in putting the price of manure at 6s., Mr. Colvin was too high.

Mr. Mollison, Doehfour, thought in some instances it might be put even higher than the figure mentioned by Mr. Colvin. A young growing bullock would no doubt, extract all the nitrogenous element from its food, but others would not, and the balance, of course, would go to the dunghill, and make it valuable. He strongly advised the careful preservation and protection of manure.

Mr. Elliot, butcher, Inverness, said that the beasts fed in stalls or boxes were preferable to others ; the flesh was better mixed and of better quality than the flesh of animals tied up in byres, though the latter laid on as fast, if not faster.

Mr. A. Macdonald, fletcher, had not the least doubt that a bullock rising three years old was much more valuable in beef than the same at two years old. If the calves did not lose the first fat, it was possible to feed them off as two-year-olds ; but when allowed to lose the milk fat, they seldom fed so sure as the cattle rising three years old.

The Chairman, in closing the discussion, concurred with Mr. Mollison and Mr. Colvin as to the probable value of the manure.—*Agricultural Gazette*.

VALUE AND IMPORTANCE OF THE APPLE CROP.

BY A. WARD LONGLEY, ANNAPOLIS.

(From the Annual Report of the Nova Scotia Fruit Growers' Association.)

The value and importance of the Apple Crop of the Annapolis Valley is now pretty well understood, but there are some features connected therewith which demand some special notice, as they relate, not only to the present, but reach far into the future.

The length of this rich and beautiful valley, is about eighty-five miles, with a breadth varying from three to eight miles—average breadth, five miles, perhaps. It is traversed its entire length by the Windsor and Annapolis Railway, offering a ready means of transit to market.

The Apple Crop of this Valley probably now reaches one hundred thousand barrels annually ; worth, taking one year with another, two dollars per barrel ; equal in value to \$200,000 per annum. This product may be divided between the three Counties of Annapolis, Kings and Hants in the following proportions :—Annapolis 50,000 bbls. ; Kings 30,000 bbls. ; Hants 20,000 bbls.

This quantity is rapidly increasing, and in ten years from this time there is likely to be an addition of fifty per cent. to the present yield.

Already our markets are glutted, and it is quite clear that for the future we must send much of our Fruit to foreign markets, or obtain but small prices for it at home. Before we can send it to a foreign market, however, there are certain conditions to be met, which may be classed as follows :

- (1) The quality of the fruit.
- (2) The best varieties.
- (3) Uniformity of size, and perfection of form, colouring, &c.
- (4) The mode of picking and packing.
- (5) The size and style of the barrel.
- (6) The marketing of the fruit.

It is quite obvious that the fruit sent by us to foreign markets should be large, symmetrical in form, fine flavoured, and well coloured, as the cost of exportation on such would be no more than on inferior fruit; while on the other hand it would be worth one-third more in almost any market to which it might be sent.—The best varieties are those which keep best; are well formed and well coloured.

All Apples intended for barrelling should be carefully handled, but especially those for foreign shipment, as such are usually subjected to changes of atmospheric and other tests, which Apples, roughly handled, seldom bear well.

There are various modes of picking and packing Apples. Some pick from the trees, and put into piles in the orchard, and barrel from the piles the same day. Others pick and carry into the Apple house, letting the apples remain ten days or a week before barrelling. Others again pick from the trees, putting into the barrels at once, and heading up immediately. Lastly, some prefer picking the apples from the trees, putting at once into the barrels, and then allowing them to remain a week or ten days before heading up the barrels.

The last method is, perhaps, the best upon the whole, as time is thus given the apples for shrinking; after which, if they are properly pressed into the barrels, they are effectually prevented from bruising in subsequent handling. Could the apples be sufficiently compressed into the barrel without bruising, for one, I would prefer closing up the barrel as soon as it was filled; and in no other way is it possible to retain so much of the original freshness and bloom of the apple.

The size of our Apple barrels is now established by law, although the law is not strictly observed. Through its instrumentality much greater uniformity is, however, been effected as regards the size of the apple barrel now in use. Before the law was passed, the apple barrels made throughout the Province ranged all the way from $1\frac{1}{2}$ to $2\frac{3}{4}$ bushels, or $7\frac{1}{2}$ to $9\frac{1}{2}$ pecks. The dimensions of the barrel as now prescribed by law are as follows: length of stave 29 inches, 19

inches diameter in the bilge, measuring from the inside of the barrel, and 17 inches across the heads of the barrel, estimated to contain $2\frac{3}{4}$ bushels, or $9\frac{1}{2}$ pecks. For several reasons our apple barrel should be made to contain $2\frac{1}{2}$ First, the Canadian and American apple barrels is made the same size as that of the flour barrel, and contains $2\frac{1}{2}$ bushels at least. While our apple barrel is of a smaller size, we suffer both in money and reputation; as in our case there is not only the absence of any reliable standard size to the barrel, but its roughness and generally unsightly appearance are not creditable to us as Fruit Growers and Fair-dealers. There is also simplicity and convenience in the way of computing quantities with barrels of this size.

Great good would ultimately attend the passage of a law establishing the size of our apple-barrel at $2\frac{1}{2}$ bushels, and the attaching of adequate penalties for any and all violations of the law.

As regards the London, Liverpool and Glasgow markets, it is stated that the prices obtained for apples is strictly regulated by and is proportioned to the size of the barrel in which they are packed. This is as it should be. Why should the same price be paid for a barrel of apples containing *two* bushels only, as for one containing two-and-a-half bushels?

True, in our own markets, about the same price is obtained for the smaller that is obtained for the larger barrel; but, generally speaking, where this species of fraud is successfully practised for the time being, there is most lost than gained, ultimately; for in most cases the deception could not be practised upon the same parties a second time. In reality, this is a penny wise and pound foolish policy, to say nothing about its moral character.

Where Apples are properly put up there is seldom much difficulty in selling them.

To ensure this essential condition, all apples intended for foreign shipment should be subjected to the closest inspection; not after they are put up, but while they are being packed. The packing should be properly done in the first place; indeed, in the nature of things, Apples *badly* put up cannot subsequently be *well* put up. The extra handling is necessarily attended with more or less damage to the Apples.

Were a cargo of Apples to be shipped to the London, Liverpool or Glasgow markets, it would be highly desirable that the whole cargo should be put up by thoroughly competent and reliable parties; or that the shippers should personally, or through agents specially employed, know precisely the contents of every barrel shipped.

There would be gain were every barrel branded and quality thus guaranteed by

some recognized authority, such, for instance, as that of the Nova Scotia Fruit Growers' Association, whose reputation is now pretty well established, both on this Continent and in Europe.

On a variety of grounds it would seem desirable that matters merely touched upon in this article should be fully discussed by those immediately interested, namely, the Fruit Growers' of Nova Scotia; and I would venture to suggest that this matter might with much propriety be taken up by the Nova Scotia Fruit Growers' Association.

In that event, the Secretary could at once correspond with the Council of the Association, and other leading persons in the different sections of the Province, with a view of assembling in some central place, say Wolfville, at an early day, a Convention of the Fruit Growers throughout the Annapolis Valley, at least, and, if practicable, throughout the Province, inviting at the same time all public spirited and patriotic individuals from all parts of the country, to take part in the proceedings of the occasion.

THE ALDERNEY AND GUERNESEY COW.

(Continued.)

CHAPTER III.

It must be apparent to every thinking person that all the before-mentioned qualities, even in the highest perfection, will not ensure an abundant and rich supply of milk, unless proper care is taken to furnish the Cow with the kind of food best calculated to the required purpose. How often is it found that complaint is made by one person that such a Cow is a bad milker, when the same animal, transferred to other hands, has given every satisfaction. This is easily explained by the fact that in the first case the Cow has been kept on foul pasture, or on improper food. It becomes, therefore, peculiarly necessary to set forth the manner of feeding, which experience has proved to be the most advantageous for the production of milk rich and sweet.

The first requisite in feeding is, that the animal should have abundance of food, so as to be able to consume all that she requires in as short a time as possible, as then she will lie down, and have the more time to secrete her milk, and that milk to acquire richness. The pasture should be often changed, and if not in pasture the food should be succulent, otherwise fat instead of milk will be produced; but Cows feed with food of too watery a nature, which roots have early in the season, require an addition of more solid food, such as meal, or good clover chaff, otherwise the milk, although considerable in quantity, will be poor and

whoney, yielding no cream. Roots should be carefully selected as having no symptom of decay or rottenness, and should be mild in flavour, or the butter will be tainted. In very cold weather, and as a change of food, use *crushed* linseed and *bruisel* oats, steamed or boiled.

Mangel-wurzel, which has become, from its luscious qualities, so favourite a food for the dairy Cow, requires much care and judgment in its use, and should never be given before the month of January, as the longer it is kept the less acidity is produced by it; and even then, in my opinion, it should always be accompanied by from four to six pounds of barley meal, or bean meal to every bushel, to correct the irritation occasioned by its sole use,—many dairies of good Cows having, within my own knowledge, been weakened so as to cause disease and barrenness, for want of the adoption of this principle. The best, and, in fact, the only roots that should be given are carrots, the yellow bullock turnip, and mangel, succeeding each other from the time they are required till the Cow returns to pasture.—Both grains and mangel-wurzel are only to be used as creating a large quantity of milk, in which quality is not sought. Many cowkeepers in London feed with these for that purpose, and are, in consequence, though selling a genuine article, wrongly accused of diluting the milk. It must be obvious, therefore, that such food is useless for the purpose of producing cream and butter. I consider grains utterly inadmissible for the dairy Cow, and mangel only to be used in the manner before stated as a change of diet.

The Cow and the Horse can well pasture together, but no other animal should be allowed to run in the same field—pigs and poultry much spoiling and tainting the feed. All rank weeds must be carefully eradicated, and garden refuse kept out of the Cow's reach, especially shrubs, yew-hedge cuttings, &c. these things being often poisonous, and occasioning the Cow to slip her calf. The same remark will apply to dead and putrid matter.

Let the pasture be free from ponds or other dirty drinking places, where the water is fouled and rendered unwholesome by decayed matter, or the drainage from dung-heaps, and the habit which cattle have of standing and manuring in it for hours together. A clean tub or tank should be used for watering the cattle, and kept supplied with clean, sweet water, which, if pumped from a well, should be exposed to the air a considerable time before use.

Cows should be taken in about 9 o'clock, or when forming their night abode, on no account allow them to be hurried to or from pasture, especially when full of milk.

CHAPTER IV.

No less necessary than proper food is the proper management for milking Cows.

It should always be borne in mind that the animal whose capabilities are for milking, becomes lean on the same quantity of food as will make the feeding cattle fat. The consequence of this is that the milking, and therefore lean Cow, is more affected by changes of temperature than the feeding or fat one.

It follows that in the successful management of the milch Cow great care should be taken to avoid rapid and considerable changes of temperature, as well as damp or strong clay land. The climate of England is worse in this particular than that of Newfoundland, or many other much more northerly countries, in consequence of its greater variability. To obviate this disadvantage of climate, there should always be a clean, dry shed in which the cattle may take shelter whenever they feel uncomfortable, either from heat and flies, or from cold and damp. This shed should be so constructed that it may, to a certain extent, clean itself by drainage, to avoid the accumulation of foul water—the floor being constructed of materials of a dry nature.—The aspect should be such as to avoid north and north-easterly winds.

(To be continued.)

WANTED

By the Egerton Agricultural Society, County of Pictou, an AYRSHIRE BULL, thorough-bred. Between the ages of two and four years would be preferred. Send particulars of pedigree, girth, and lowest price, to Professor Lawson, Secretary, Board of Agriculture, or to ROBERT McNAUGHTON, President, Egerton Agri. Society.

WANTED.

An AYRSHIRE BULL, not less than two years old, by the New Ross Agricultural Society. Send description, pedigree, and price to Professor Lawson, or to

JOHN PRAT, Secretary,
New Ross, Lunenburg County.

January 3rd, 1876.

BONE MANURE.

The Proprietor of the Wellington Tannery requests Secretaries of Agricultural Societies, and Farmers generally, will intimate to him as early as convenient the probable quantity of this valuable manure that will be required during the next season; so that the necessary arrangements may be made to meet all orders and thus prevent disappointment. Address

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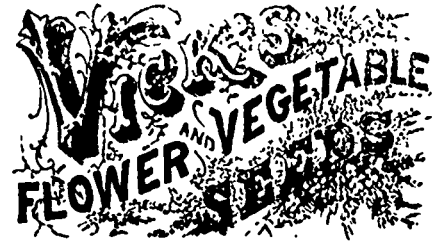
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Two Bull Calves, one a cross of pure Durham and pure Ayrshire, sired by "Favourite," a full blooded Durham, dam "Effie the Second," a full blooded Ayrshire cow, imported by the Board of Agriculture, 1872; weighed a month ago, at the age of seven months, 650 lbs. The other a Grade Ayrshire, sire "Lord Dufferin," a full blooded Ayrshire Bull, imported at the same time, dam improved stock; he weighed when six months old, 600 lbs.; both took first prize at the Yarmouth Exhibition, and are in every respect very fine animals.

For terms and further particulars apply to
JAMES CROSBY,
Sec'y. Yarmouth Township Agri. Society.
Helron, Yarmouth, November 1st, 1876.

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This Society is desirous of purchasing a thorough-bred SHORT HORN BULL, two years old or upwards.

Any person or Society having a suitable Animal to dispose of will please communicate particulars to Professor Lawson, Secretary of the Board of Agriculture, Halifax, or to

C. J. McFARLANE,
Secretary Scotia Agricultural Society,
Fox Harbour, Co. Cumberland.

Dec., 1875.