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*Omniun rerum, ex quibus aliquid acquiritur, nihil est agriculturæ melius, nihil uberius, nihil homine libero dignius.—Cicero : de Officiis, lib. I, cap. 42.*

VOL. IV.

HALIFAX, N. S., OCTOBER, 1882.

No. 28.

EXHIBITIONS.

- September 16th--23rd, KINGSTON, ONT. :  
Fourth Dominion and 37th Ontario Exhibition.
- September 26th--27th, DARTMOUTH : Agricultural Society.
- October 2nd--5th, ANNAPOLIS ROYAL, N. S. :  
District No. 2, Annapolis, King's, Queen's.
- October 3rd--5th, LIVERPOOL, N. S. :  
Sectional Exhibition for Queen's County, of District No. 2.
- October 3rd--5th, LUNenburg, N. S. :  
District No. 1, Halifax and Lunenburg Counties.
- October 3rd--6th, TRURO, N. S. :  
District No. 4, Colchester, Cumberland, Hants.
- October 10th--12th, ANTIGONISH, N. S. :  
District No. 4 Exhibition, Antigonish, Pictou, Guysborough.
- October 11th--12th, CHARLOTTETOWN, P. E. I. :  
Provincial Exhibition of Prince Edward Island.
- October 12th--13th, YARMOUTH, N. S. :  
District No. 3 Exhibition, Digby, Shelburne, Yarmouth.
- October 17th--20th, NORTH SYDNEY, N. S. :  
District No. 6 Exhibition, for the four Counties of Cape Breton Island.

A. R. FULTON, Esq., Bass River, Londonderry, Co. Colchester, sent us by mail sometime ago, a full box of live Colorado Beetles. Fortunately none escaped on the way, and they are now secured as entomological specimens for the Provincial Museum. We regret to find that this pest has been found in several parts

of Nova Scotia this season,—still we have not heard that it has anywhere made serious depredation. We trust that wherever it appears every effort will be put forth to exterminate it. The potato is rapidly gaining ground as one of our most profitable crops in Nova Scotia, and the feeble way in which it has been attacked hitherto, in our comparatively cool, moist climate, justifies the hope that we may be able to prevent the beetle increasing to any disastrous extent.

PICOU, Aug. 26th, 1882.

As suggested in last issue of JOURNAL, I herewith forward specimens of Potato Bug—supposed to be Colorado Beetle—taken from a farm in Pictou County, about three miles from town, and I am informed that the same species is prevalent over the whole county. Kindly advise if this really is the dreaded Colorado Beetle.

Yours, respectfully,

ROBERT HOCKIS.

[We regret to say that the specimens sent are the genuine Colorado Beetle.]

UPPER CLYDE, Sep. 7th., 1882.

Dear Sir,—I received a circular some time ago from the Board of Agriculture, in reference to a grant of fifty per cent. on amounts subscribed for the importation of sheep. Now, the Shelburne Agricultural Society, of which I am President, have subscribed over one hundred dollars to the fund. Then I am Managing Director of the Shelburne Sheep Raising

Company. I wish to know if I can pay in one hundred dollars to the fund if it will be the same as if it was subscribed from an Agricultural Society, and if the Board of Agriculture would give the grant in that way. We want to import a lot of sheep this fall, and I am anxious to secure all the aid I can. Hoping to hear from you soon.

I remain, &c.,

LEWIS MCKAY.

COPY OF REPLY.

I am favoured with your letter of the 7th, and will bring it under notice of the Board first opportunity. Whilst the Board would no doubt be desirous of affording every encouragement in their power to so important a body of improvers as the Shelburne Sheep Raising Co., yet I fear they have not the power to do what you wish, without authority of the Legislature. The Report of the Agricultural Committee of the House of Assembly

(1.) Limits the grant of 50 per cent. on Sheep purchases to Societies, that is, Agricultural Societies organized under the Act for Encouragement of Agriculture.

(2.) Requires that the payment and expenditure shall be certified by affidavit of the President or Presidents of such Societies. And

(3.) Provides that the sheep shall be sold at public auction to members of such Societies as make the importation.

In these circumstances I do not see how the Directors of the Shelburne Sheep Raising Company can qualify for the grant.

For the Journal of Agriculture.

### CATTLE DISEASES.

I purpose in the following article to offer to the reader some notes and comments upon certain classes of disease with which the cattle in this country are at times afflicted. I will be allowed some credit for courage in an undertaking of this kind while the Report on the Cattle Disease in Pictou has not yet fully reached us, and while in the portion that has so far been published, certain points seem to bear rather strongly against certain views of the matter which I must continue to hold with some favor.

We are informed that "Professor Lawson's report on the soil does not point to anything abnormal or indicate anything which would lead us to suppose that it had anything to do with its production. In fact we find it appearing on all kinds of soil; it prevails on the high rolling land, on the swampy soil, on the uncultivated common, and on the best tilled farms."

In connection with this statement, however we must bear in mind another, which we find shortly before it, as follows: "It would appear that the disease, if not communicable by direct contact, is communicable by immediate agents, notably infected buildings, and by the animal fluids and decomposing bodies."

We find then, that a palpable and definite form of disease exists among us in full force and form; but whence its origin and how its initiation is the problem that still remaineth. My say in the matter only relates to what constitute the supporting causes of (it may be) this and other cattle diseases in this country, and several existing hindrances to the continued health, not only of cattle but other stock as well.

To begin with, then, it is found by intelligent observation, that as perhaps an invariable rule, when the balance of nature is in any degree impaired, then some degree of disease will most surely appear. In other words, if we note much want or much excess of any of the elements constituting a fertile and healthy soil, the same want or excess is most surely to be noted first in the plant growth, then in the state or bodily system of the animals feeding on these plants and drinking the water of such a district. Of course there are several, notably the alkaline and siliceous elements in soils, that may exist in much larger proportion than can be conceived necessary, but yet a full and even growth from these soils be found to continue for a long time, without any difference being detected; but extremes in these, as in other matters, will develop evils. Although Nova Scotia is composed of a great variety of rocks, and her surface presents a good variety of soil,

yet the different kinds of the latter are in many instances rather sharply divided. We cannot be said to possess any great extent of any particular quality or homogeneity of soil. There is the boulder drift, but it is patchy, and in many places indeed very thin, scarcely to be discriminated from the clays of either the metaphoric slate or of the coal districts underlying. As a whole, I should say the greatest want in our soil is lime in a soluble state. In the most of our soils, indeed, we have lime, but it is in the carbonate or silicate form. We have any amount of gypsum in cliffs and isolated masses, as in Hants County; but it has never appeared, to me at least, that it generally exists, distributed throughout our soils in any efficient degree. Phosphate of lime is the scarce element in this country. Magnesia too, must be classed as one of our exceptional elements. We have deposits of it in some shape; but, as in the case of the gypsum, it at present, as an agricultural factor, awaits the aid of business enterprise.

In order to, as far as possible, shorten and narrow down our present subject, let us take a short look at the case presented to our notice in Pictou. Here is a very exceptional kind of soil, covering a coal basin, and for the greater part formed from the gray sandstones and shales of the middle and upper carboniferous formations. No doubt this soil, fifty years ago, contained the requisite elements in good proportion, easily deliverable to the crops of the agriculturist. We have then here, we will say, fifty years of a heavy demand upon the phosphates and sulphates, not only of lime but of other bases, from a soil exceptionally devoid of these elements. There must have been here for a long time a continued cropping of grain, and grazing for the purposes of the dairy, when, all the while, the soil itself has been the party called upon to recuperate itself from sources long since exhausted.

I let us see what are elements mainly predominating in soils of this class. There is but little of the granitic or felspathic element in the boulder drift, which certainly extends to a greater or less degree over these parts. There is to be seen an amount of the quartzite quality in some beds of gravel, resulting from the decomposition of the extensive reefs of conglomerate that are in distant quarters of the country to be found. This, with the sandstones and clays aforesaid form the chief components of the soil about North Pictou, and indeed I may add over good part of all the northern half of Nova Scotia. In all these soil elements how little there is that go to make up the physical constitution of a man or a beast, or any kind of vegetable. The principal salts are mostly the sili-

cates of alumina and carbonates of iron and lime—both insoluble in water. And to mend the matter, in many cases the cattle are kept enclosed on the same fields for long periods—the same fields, the same cattle, the same dung—until the soil becomes sour and bitter and poisonous. And this, I would suggest, is the chief supporting cause of that debility in the animals that affords aid and comfort to the disease. Just at this time, healthy cattle may or do contract this particular form of disease; or, a good number of animals in a week condition may escape. But any Pictou man knows that it is not safe to go to sea with rotten timbers or a sprung mast in his ship; when a storm comes, here destruction takes hold.

If I have so far ever so remotely indicated correctly any important reason wherefore disease has any chance to exist in any part of this country, I may be excused if I proceed to note a remedy, or what may be reasonably suggested as one.

It is well known to every intelligent person, that in countries at present occupied by intelligent agriculturists, a large and constant business is carried on in transporting manures, and their constituents, manurial earths, earths requisite in making up the balance of qualities wanting in the soils of particular localities. With us phosphates are scarce and dear, so is the alkali potash; that want of nitrogen may be to a great extent obviated by improved management. But we have a manurial substance of the very first importance, in inconceivably endless quantities, so vast in extent that the shores and beaches for miles in the Bay of Fundy are composed of it, and whole fleets are loaded with it by merely grounding the vessels and blowing the beach up, at a cost of only a few cents per ton. Moreover, this substance is so distressfully scarce in most soils in this country, and the elements of which it is composed are such a general physical want to the animals of this country, that these elements are nearly always in effect powerfully sanitary and medicinal. This substance, by a very simple preparation, has the effect in most instances, when applied to any of our sour, bitter, poisonous and worn out soils, to render these soils healthful and sweet; so that where only nasty weeds grew, the ground becomes taken possession of by a full rich crop of clover, or other crop of value as may be more suited to the soil elements of any given locality. This substance also, when properly applied to the newly-produced dung, scattered plentifully over the ground where cattle lie, or liberally applied to the ordinary compost heap, has the effect of securing a large proportion of the nitrogenous gases that would otherwise escape. This substance is gypsum. It is used by

the Americans of the eastern coast in very large, and, I think, increasing quantities; and their supply I know comes to them very largely from the Bay of Fundy. I know it is popularly supposed that they use it for altogether another purpose, viz., to render a dry soil moist. According to any theory or knowledge that I am able to circumvent, it cannot have this effect. But let us take the instance of a country which, instead of being drier, is more humid than ours—Scotland. I have been lately informed by a young Scotchman from Midlothian, that the farmers there pay sixteen dollars a ton for this uninteresting looking stuff which we in Nova Scotia get tumbling down about us from the cliffs for nothing. If I am rightly informed then, there can be enough gypsum got in the Strait of Canso, with very little expense, to last the northern and eastern parts of Nova Scotia, for all purposes, for ten thousand years.

But it may be that suggestion is preferable to exhaustion of a subject. If so, I shall add no more at present upon the deficiencies of soils, or diseases of stock.

CLOVERDALE.

E. GILPIN, F. R. S. Ca., Government Inspector of Mines, has prepared a concise account of "The Minerals of Nova Scotia," which has been neatly printed in pamphlet form, and is intended to accompany the collection sent under Dr. Honeyman's care to the Dominion Exhibition at Kingston. A sketch is given of the distribution, extent and working of our gold mines; iron ores and smelting, with analyses; copper ores; lead and silver, manganese, gypsum, paints, barytes, salt, mineral springs, building stones, graphite, infusorial earth, grindstones. The author well observes:

"The mineral resources of Canada, although great and varied, appear dwarfed by her broad boundaries, and her scattered population, engaged principally in agriculture. In Nova Scotia alone does the miner occupy the position of a distinct class in the community. This is due primarily to its mineral wealth, which I have endeavoured to outline in the following pages, but is, perhaps, equally owing to its favoured position. Placed at the mouth of the St. Lawrence, and overhanging the eastern coast of America, its position marks it out as a halting place in the highways of the sea, and its numerous and deep harbours permit the approach of vessels to within a few miles of every locality yielding mineral or agricultural wealth. This facility of access gave rise to an extensive exportation of coal, gypsum, grindstones, etc., to the United States many years ago, and, since Confederation the trade of our mineral

exportation is flowing into Quebec and other Dominion Provinces in a steadily increasing stream. The consequence of this is that our mining industries manifest a steady growth, and their future expansion will be co-equal with that of the Dominion. The natural position of Nova Scotia indicates that she should be the workshop of Canada; that here, more profitably than elsewhere in the Dominion, can sugar be refined, cotton spun, and iron ores smelted and worked into the thousand articles needed by the contractor, the manufacturer, and the farmer. Here alone in the Dominion are found in juxtaposition, coal, iron, fluxes, gold, etc., a boon conferred by nature on very few countries."

[Copies of the pamphlet may be obtained from Dr. Honeyman at Kingston (during the Exhibition), or at anytime on application at the Mines Office, or to the Queen's Printer, at Halifax.]

The following table shows the distribution of the coal sold during the year 1881 by the Nova Scotia mines:

Nova Scotia.....	tons (2,240 lbs.).....	332,413
Ontario and Quebec	" " .....	265,628
New Brunswick	" " .....	123,526
Newfoundland	" " .....	62,174
P. E. Island	" " .....	49,313
West Indies	" " .....	21,600
United States	" " .....	113,728
Other Countries	" " .....	13,612
Total .....		1,035,014

THE PICTOU CATTLE DISEASE.

STELLARTON, Aug. 30th, 1882.

The Editor Journal of Agriculture:

Sir,—I have read with much interest, the Report on the Cattle Disease of this County; but I am inclined to question the prominence given to Ragwort and poor food as possible causes of the disease. I live in a section where Ragwort (Stinking Willie) abounds, where it is impossible to keep it out of the hay, and the pastures are full of it,—though cattle do not touch it—and yet there is no disease here. It cannot be said that many of the cows which have to roam through the woods for a living in summer, are well fed in winter and spring, the reverse is rather the case; and yet, as I said before, the disease is not here.

To one accustomed to stall-fed cattle and well-kept stables, the common feeding in this country may seem poor, but poor as some of it may be, it is nothing like so bad as is to be seen in more easterly districts of this Province. Hence, I conclude that neither Ragwort nor poor feeding can be causes of the disease, though the latter may make cattle exposed to its influence more prone to take it.

Yours, &c.,

H. S. POOLE.

The following observations by Professor Law, V. S., on Anthrax, or what is sometimes called Black Leg in Cattle, may be read with interest in connection with the Reports on the Pictou Cattle Disease, which, although a very distinct form of disease is, we believe, regarded by Dr. McEachran as probably of a similar nature:

There are two varieties of the disease both dependent on the presence in the system of minute vegetable organisms (bacteria) which have acquired the dangerous facility of living and increasing in the blood and tissues of the animal body. One form of the malady is the malignant anthrax proper—the malignant pustule of man—caused by an organism which exists in the blood and vital fluids in the form of microscopic staff-shaped bodies, as well as spherical ones. This type is readily communicable to all species of warm-blooded animals unless they have already been rendered insusceptible by an earlier attack. The second form is associated with a microscopic organism which is found in the spherical form only in the blood and animal fluids, and which has not been found to attack readily other animals than cattle.

Both are equally dangerous to cattle; the first is quite as dangerous to man and other warm-blooded animals. Whether the germs in both diseases are but varieties of the same organism remains to be seen; what is more immediately to the point is that both appear to follow the same law of development, and to depend on the same general conditions for the maintenance of their virulence. This is most inveterate if secluded from air, but is gradually lost in the presence of free air and moisture. Hence the germ once introduced or developed in a soil of a close, impervious, and compact kind, or one over-charged with the remains of animal or vegetable life, or in one habitually water-logged, is preserved indefinitely, while in one which is naturally dry, open, and porous, or which has been thoroughly under-drained, sooner or later loses its virulence. In accumulations of litter or manure, in liquid manure tanks, in close cellars, and the like, it is more likely to be preserved than elsewhere. To check the progress of the malady, therefore, and prevent new attacks, the exposed cattle should at once be moved to soil which is thoroughly drained and pervious to moisture.

The carcasses of the dead and all the products of the sick should be burned, or, if buried at all, should be in a dry porous soil with a covering of quicklime to favour speedy decomposition, and securely fenced in so that no other cattle can approach the place, nor eat the grass grown upon it for several years. If damp or impervious soil only is attainable for burial

then burning the carcasses is far to be preferred. When a pasture has once had an outbreak of blackleg it cannot be considered safe for several years to come. The purification of such pastures may be expedited by placing them under a rotation of crops and stirring the soil as frequently as possible so as to expose the germs to the air and lessen or remove their virulence by changing the medium in which they grow. The grand principle is never to be lost sight of, that it is the habit they acquire of using up little oxygen in their growth which fits these germs for growing in the blood, and it is the habit of using up much air that unfits them for survival in the animal fluids where little air can be found.

The stock which has been exposed to the infection of blackleg, whether from sick animals or infected pastures or places, may attain some measure of protection from taking daily in the food or water some disinfectant which will check the development of any germs that may be present on the mouth, throat, stomach, or bowels. For this purpose one drachm of carbolic acid and three drachms of sulphate of iron may be dissolved daily in the drinking water of each adult animal, or sprinkled on its food. Or one drachm of iodide of potassium and one-half ounce chlorate of potassa may be used in the same way. If there is any tendency to costiveness it should be counteracted by roots, apples, potatoes, soft mash, or by daily doses of two or three ounces of Glauber salts. Constipation usually begets fever and fever strongly predisposes to the reception of the anthrax germ. Young animals are always most liable to the disease, partly because their tissues are soft and impressible, but largely no doubt because they have not had an opportunity to become insusceptible through an earlier mild attack. Young growing animals should therefore be kept apart from pasture where blackleg habitually occurs, and if they must be at any time exposed to even the slightest extent, care should be taken to keep them in the most vigorous health, and to prevent them from becoming suddenly plethoric.

To prevent the evil effect of a rapidly increasing plethora it is desirable to feed well at all times, and never allow the subject to get into too low condition. The use in this connection of linseed cake has the double effect of keeping the beast constantly thriving and counteracting all costiveness and fever. Some seek the same result by giving yearling cattle weekly or semi-weekly doses of half an ounce of saltpetre, or of two ounces Glauber salts; while still others insert tapes or strips of leather or cord through the skin of the dewlap, and smear them frequently with caudal turpentine (pine gum) or other irritants, so as

to keep up a running sore. These are kept in four weeks or even months, and though not an absolute protection against the disease, yet they serve to materially reduce the mortality. Cattle strange to the pasture should be subjected to the same precaution as young growing cattle. After it has once set in, blackleg runs such a rapid course that treatment is rarely of any avail. In mild cases the use of carbolic acid and sulphate of iron, alternately with chlorate of potassa and iodide of potassium, as advised above, for prevention, and to the swelling oil of turpentine, or carbolic acid in oil (1 to 10) may give good results.

We understand that during the past week two cattle have had to be destroyed (assuifering from the Pictou cattle disease) in quarantine, while five others now sick are separated and under medical treatment by Dr. McEachran. The fact of these animals taking sick so soon after entering quarantine would show the necessity of the measures adopted by the Government in isolating all animals which have been in contact with the disease, as these animals belong to different parties and they are confined to one place and under proper control, instead of, as is the general practice, being allowed to roam at large, infecting every place they passed over weeks and even months before they either die or are killed. Up to the present time we have been informed that not more than half the number of cases of the disease have occurred as compared with the same period last year, which we are pleased to learn, as it would tend to show that the sanitary and repressive measures taken by the Government have been so far beneficial that the disease has been kept within bounds and the spread of it to a certain extent stopped, which is something gained, and the fact that these animals now in quarantine will, with very few exceptions, be slaughtered and not allowed to go back on the farms again, will prevent to a certainty the disease being propagated by means of those animals which have been in contact. We would strongly urge on all who have cattle in quarantine to leave them in the hands of the Government, instead of taking them back on their farms with even a possibility of their carrying the seeds of the disease in their systems to be developed next summer. We understand that Professor Osler, the celebrated Pathologist, of McGill University, Montreal, who read three valuable papers before the American Association for the advancement of science, two weeks ago, has been appointed to examine into the disease with a view of arriving at some conclusion as to its nature and cause. He comes to Pictou this week, and will

make as many post mortem examinations as possible, and conduct other experiments necessary.—*Pictou Standard*.

PROFESSOR LAWSON, Lucyfield, has sold to W. P. Colchester, Esq., Ellershouse, a small flock of 9 pure Southdown Sheep. These animals are from the stock imported by the Central Board of Agriculture from England some years ago, and purchased at the public sale by the late Rev. H. P. Almon, of Windsor. Several of them took prizes at the Dominion Exhibition last year.

We are glad to find that the correspondence with the Meteorological Office, Toronto, referred to in our columns some time ago, and which was undertaken at the suggestion of Colonel Laurie, has resulted in arrangements being made for issue of the Daily Forecasts of weather from Toronto at midnight, for the Associated Press, so as to be in time for publication in the Halifax morning papers. Mr. Carpmeal, the Superintendent, deserves the thanks of Nova Scotians for taking the trouble to reorganize his system so as to hasten the daily returns and make the information collected available here.

FARMERS who neglect to provide either carrots, parsnips, beets or turnips for their stock when winter approaches make a serious mistake, if they anticipate the best profit, and large results. We often see the feeding of roots argued from an English standpoint, but many things in this country in an agricultural point are quite different. Nevertheless there is no question of the value and economy of feeding roots in this country to a larger extent than is done at present. Probably the most easily raised, most productive and most profitable root crop for us to raise, is some of the varieties of beet, some of which grow very large and yield 800 to 1,000 bushels to the acre, if the land is well manured and thoroughly tilled. The best way to grow them is to let them follow some deeply worked, highly manured crop, on thoroughly good land, putting on no manure the year the beets are grown. There will then be few weeds to trouble, which is often the plague of root culture.—*Maritime Farmer*.

THE great feature of the Royal Agricultural Society's show in England last month was the "Hay Dryers," showing the various processes for making hay by artificial heat. A wag stuck up a placard "This way to the Hay Dryer," with a hand pointing to the sun. A great many farmers, as well as city men, read the notice, looked at the finger, puzzled, smiled,—and then expressed concern for each others dullness.

HISTORY OF THE PICTOU CATTLE DISEASE

No. V.

Preliminary Report on the Disease of Cattle at Pictou, Nova Scotia, and adjoining Districts, addressed to Hon. J. E. Pope, Minister of Agriculture, by D. McEachran, F. R. C. V. S., Inspector of Stock.  
[Continued from last Number.]

Statistics of Cattle Disease in Pictou, N. S., September, 1881. Compiled by William McEachran, M. D., V. S.

Names.	Residence.	Number Lost.	Number Lost this Season.	Number now Healthy.	Number now Sick.	Length of time on Farm.	How Disposed of.
Town of Pictou	Pictou	300	0	300	2	23 years	Buried (to sea)
Danald Fraser	Carrisbee Road	10	0	10	0	18 do ago	Buried.
Alexander Fraser	do	4	4	0	0	This season	do
John Herrit	do	1	1	0	0	20 do	do
John Herrit, son	do	0	1	1	0	This season	do
Alexander Grant	do	1	1	0	0	15 years	do
Daniel Grant	do	14	4	10	0	This season	Burnt. (to sea)
D. Campbell	do	10	1	9	0	13 years	Buried or cast
Jas. Foot	do	2	1	1	0	11 do	Buried.
G. W. Campbell	do	10	1	9	0	5 do	do
John Fogo	do	2	1	1	0	3 do	do (to sea)
H. B. Lowdon	do	1	0	1	0	12 do	Buried or cast
David Foot	do	20	1	19	0	10 do	do do
John Ferguson	do	15	5	10	0	15 do	This season Buried. (to sea)
Judge Fogo	do	30	0	30	0	20 years	Buried or cast
John Murray	do	0	0	0	1	8 do	do
Johnson Campbell	do	20	0	20	0	7 do	Buried.
M. McGregor	do	2	2	0	0	6 do	do
Wm. McDonald	West River Road	10	0	10	0	3 do	do
John McDonald	do	1	1	0	0	3 do	do
John Harris	do	1	1	0	0	3 do	do
Miss McArthur	do	1	1	0	0	8 do	do
N. McLeod	do	1	1	0	0	8 do	do
D. Reid	do	1	1	0	0	This season	do
Daniel Desmond	do	1	1	0	0	do	do
Wm. McConnell	do	1	1	0	0	1 year	do
Isaac Robley	do	1	1	0	0	1 do	do
Wm. Sobey	do	1	1	0	0	2 do	Buried. (to sea)
Mrs. Hogg	do	2	2	0	0	15 do	Buried or cast
Wm Stevenson	do	2	2	0	0	8 do	Buried.
Thos. A. Cameron	Loch Broom	16	0	16	0	15 do	do
J. D. Cameron	do	6	0	6	0	7 do	do
Simon R. Fraser	do	13	0	13	0	2 do	do
George Hamilton	do	2	2	0	0	4 do	do
Thomas Fraser	Middle River	2	2	0	0	1 do	do
Wm. Lockhead	do	2	2	0	0	1 do	do
Mrs. Conn	do	2	2	0	0	1 do	do
John Douglas	do	2	2	0	0	2 do	do
— Ross	Green Hill	3	3	0	0	2 do	do
Duncan Ross	do	3	3	0	0	2 do	do
Kenneth Forbes	do	3	3	0	0	2 do	do
John Ferguson	Fisher's Grant	3	3	0	0	2 do	do
Samuel Cameron	do	1	1	0	0	This season	do
Mrs. M. Collingwood	do	1	1	0	0	4 years	do
Wm. McKenzie	do	1	1	0	0	This season	do
Geo. Foster	do	1	1	0	0	do	do
A. McPherson	do	0	0	0	1	do	do
T. McPherson	do	1	1	0	0	do	do
G. McPherson	do	1	1	0	0	do	do
A. Smith	do	1	1	0	0	do	do
D. McArthur	do	1	1	0	0	do	do
A. Harris	do	1	1	0	0	do	do
Thos. Hibbits	do	0	0	0	1	do	do
Capt. Foster	do	1	1	0	0	This season	do
A. Tanner	do	1	1	0	0	do	do
S. Cameron	do	1	1	0	0	do	do
D. McGregor	do	1	1	0	0	1 year	do
J. McKay	do	0	0	0	1	This season	do
J. Cameron	do Riv. Station	1	1	0	0	do	do
A. McLean	do	2	2	0	0	This season	do
Wm. McLean	do	1	1	0	0	do	do
Town of N. Glasgow	New Glasgow	300	3	297	3	do	do
Thomas Fraser	Fraser's Mountain	2	0	2	0	9 years	do
Alan Graham	The Glen	13	6	7	0	2 do	Buried.
Mrs. Roy	do	4	1	3	0	1 do	do
D. McClashan	do	6	3	3	0	3 do	Buried.
Wm. Love	do	12	4	8	0	7 do	do
John McArthur	do	7	0	7	0	2 do	do
D. Jackson	do	5	5	0	0	2 do	do
Robert Mitchell	do	4	0	4	0	4 do	Buried.
D. Stewart	do	7	7	0	0	This season	Buried.
Jacob Olding	do	4	3	1	0	3 years	do
Frank Love	Wentworth Grant	9	3	6	0	10 do	do
J. D. Grant	do	3	2	1	0	5 do	do
W. & J. Grant	do	14	3	11	0	4 do	do
Wm. McLaren	do	1	1	0	0	This season	do
Lewis McKenzie	do	4	2	2	0	5 years	do
J. W. Roy	Pine Tree Settlemt.	10	1	9	0	6 do	do
Wm. Rao	do	1	0	1	0	1 do	do
Donald Stewart	do	7	6	1	0	1 do	do
John Wier	do	7	2	5	0	3 do	do
Jas. McArthur	do	5	5	0	0	1 do	Buried or B'rd.
Jas Fitzgerald	do	3	0	3	0	4 do	do
J Sutherland	Sutherland's River	2	2	0	0	This season	do
D. McDonald	do	2	0	2	0	2 years	do
Wm. Cameron	do	1	1	0	0	1 do	do

STATISTICS, Etc.—Continued.

Names.	Residence.	Number Lost.	Number Lost this Season.	Number now Healthy.	Number now Sick.	Length of time on Farm.	How Disposed of.
J. Sam. Copeland	Merrigomish	11	4	7	0	6 years	Burnt or B'rd.
J. D. Simpson	do	9	0	9	0	3 do	Buried.
D. Huggan	do	15	3	12	0	3 do	Buried.
M. Simpson	do	7	0	7	0	1 do	do
Mrs. Wm. Copeland	do	5	1	4	0	7 do	do
Forbes Smith	do	1	1	0	0	This season	Buried.
S. Simpson	do	1	1	0	0	do	do
J. D. Copeland	do	11	4	7	0	7 years	do
Wm. N. Copeland	do	7	1	6	0	6 do	do
Maurice McDonald	do	15	0	15	0	12 do	do
J. R. McDonald	do	7	1	6	0	10 do	do
Peter McDonald	do	11	1	10	0	14 do	do
D. Lamont	do	11	0	11	0	8 do	do
Ronald McVicar	do	30	1	29	0	15 do	do
Angus McVicar	do	16	1	15	0	7 do	do
Charles Smith	do	4	0	4	0	5 do	do
Donald McDonald	do	3	0	3	0	3 do	do
Charles McVicar	do	1	1	0	0	This season	do
Donald McVicar	do	10	1	9	0	6 years	do
Angus McKinnon	do	50	0	50	0	10 do	do
D. Mitchell	do	20	0	20	0	20 do	do
Widow J. Copeland	do	10	2	8	0	10 do	do
Alex. McDonald	do	9	0	9	0	11 do	do
John Munroe	do	4	0	4	0	5 do	do
Finley Campbell	do	6	5	1	0	4 do	do
Jas. Grant	do	1	1	0	0	3 do	do
Wm. Sutherland	do	13	5	8	0	4 do	do
Alex. McNeil	do	3	0	3	0	5 do	do
W. B. Stewart	do	5	0	5	0	7 do	do
Angus McDonald	do	1	1	0	0	2 do	do
Donald McGillvray	do	1	1	0	0	2 do	do
Angus McGillvray	Somerville	13	0	13	0	3 do	do
J. McGillvray	do	16	0	16	0	2 do	do
J. McGillvray	do	4	1	3	0	2 do	do
Lauchlan McGillvray	do	1	0	1	0	1 do	do
Alex. McGeo	Knoydart	3	2	1	0	1 do	do
Angus McGeo	do	2	2	0	0	This season	do
D. McKinnon	do	1	1	0	0	2 years	do
D. McDonald	do	4	4	0	0	12 do	do
D. McDonald	do	6	6	0	0	3 do	do
Martin McDonald	do	18	6	12	1	4 do	do
Total		1396	203	947	37		

Synopsis of Statistical Report of the Cattle Disease in Pictou, Nova Scotia, September, 1881.

District.	Number of Animals Lost.	Numbers Lost this Season.	Numbers now Healthy.	Numbers now Sick.	Longest time on the Farm.
Town of Pictou and vicinity	465	33	265	3	23 years.
West River Road	44	15	48	1	15 do
Loch Broom	51	6	4	0	15 do
Middle River	13	6	9	4	4 do
Green River	11	5	6	1	4 do
Fisher's Grant	23	18	21	0	This season.
West River Station	4	4	0	0	23 years.
Town of New Glasgow and vicinity	362	25	298	7	7 do
The Glen	65	29	25	1	10 do
Wentworth Grant	31	11	16	0	6 do
Pine Tree Settlement	33	11	58	2	2 do
Sutherland's River	5	3	17	1	2 do
Merrigomish	293	34	124	3	20 do
Somerville	21	2	39	3	3 do
Knoydart	55	22	40	2	12 do
Total	1396	203	947	37	23 years.

MEASURES NECESSARY FOR THE SUPPRESSION OF THE DISEASE.

In calling your attention to the following Report, I beg leave to state:

- I. That a disease of a contagious nature has been prevailing to a limited extent in several parts of the County of Pictou, of the Province of Nova Scotia.
- II. That this disease has been hitherto undescribed, and that further investigation is necessary to discover its primary cause and its pathology.
- III. That since it was first known to exist in the Province, the total number lost is about 1,396, of which 203 have been lost in 1881, which is the maximum of mortality yet reached, showing that the disease is on the increase.

IV. That the disease is contagious and incurable.

V. That I believe that its continuance and spread are due, in a great measure, to the illegal practice of throwing carcasses on the shore or leaving them unburied on commons where other animals coming in contact with the animal fluids or tissues become infected, and thus the disease is spread.

VI. That animals placed in buildings formerly occupied by diseased animals will become infected.

I beg therefore to recommend :

a. That measures be taken to stamp out the disease—by killing the diseased animals and burning the bodies or burying them deeply with lime.

b. By isolation of those cattle which have been in contact with diseased animals or in infected places ; by declaring the district, or farm, as necessary, to be an infected place, and subject to necessary quarantine regulations.

c. That all animals actually sick of the disease be slaughtered—one-third of the value being paid for them ; that all suspected animals be killed, and that two-thirds of their value be paid to the owners.

d. That the quarantine be maintained until such time as the infected buildings be renovated and disinfected to the satisfaction of the Inspector appointed to carry out the quarantine, and all carcasses burned or buried, and all graves of cattle thoroughly covered, and that the law forbidding the exposure of carcasses on public places unburied, or throwing them into the sea or on to the shore, be enforced.

#### ESTIMATED COST.

I beg to submit the following estimate of costs, which is only proximate, as it is impossible to definitely compute the number which must be killed, either as diseased or suspected.

Estimating the number of animals in the exposed district at 1,000 head, should it be necessary to destroy all of them, and taking the value of the best matured animals at \$30—two and three year olds at \$15, and calves and yearlings at \$6 to \$10—we may place the average value at say \$22.50 per head. Allowing the owner compensation at a rate of two thirds value for those not actually diseased, but yet exposed to infection, it would represent

1000 animals at \$15 .....	\$15,000
Inspector's salary and expenses, }	2,500
Constables (say ten men) }	
Incidental expenses .....	500
	<hr/>
	\$18,000

#### MORTALITY AND LOSS.

The preceding statistics were compiled by William McEachran, M.D., V.S., who, by Departmental instructions, was sent to the infected districts for that purpose.

By a consideration of the table which I here prefix, it will be seen that since the first appearance of the disease a total number of 1,396 animals have been lost, or an average of 56 per annum. It must, however, be noted that at the time the number of healthy animals and those sick in the affected districts was only about 1,000 head, making the mortality a fraction over 5 per cent, which is by no means a very heavy mortality. Yet, when we consider that the stock on a farm in that county seldom exceeds six or eight head, and that in some cases the entire stock has been lost, and lost again on replenishing, so that the keeping of cattle had, on some farms, to be relinquished altogether, it entails not only loss but inconvenience and consequent depreciation of the farm. It is, therefore, no wonder that we find the people clamorous for something being done to rid the county of the plague.

I may explain that many of the animals thus condemned as having been exposed to the infection would probably not be diseased, and their carcasses could be sold for food, which would reduce the outlay somewhat, but I beg leave to suggest that the sum of eighteen thousand dollars (\$18,000) be appropriated for this purpose to be expended in such measures as are necessary to rid the Province of Nova Scotia of this disease, which is so injurious to the agricultural interests of that Province.

I have the honor to be, Sir,  
Your obedient servant,  
D. McEACHRAN, F.R.C.V.S.,  
Inspector of Stock.

The Honorable  
The Minister of Agriculture.

(To be continued in next number.)

THE *Pictou Standard* opportunely publishes engraved figures of the Colorado Potato Beetle in its various stages, together with the following clear and accurate account of this pest :

"As Pictou County has at last been invaded by this enemy, which no power has been able to arrest in its triumphant march from the canons of Colorado to the British Atlantic, our farmers must wheel into line and receive the invader in true fighting fashion. Henceforth eternal vigilance will be the price of potatoes.

In the cut we give a representation of the beetle in its various stages. The yellowish eggs are figured, the larvæ in different stages of growth and characterized by a pale yellow color with a reddish tinge and a row of black dots on the sides; the pupa or chrysalis which transforms in the ground; the perfect beetle striped with black and dull orange, the *elytra* or hard-winged covers, dull orange and black; the legs, dull orange and black. It has been named by Say, *Doryphora decem-lineata*.

We have a number of the perfect beetles before us. If the weather remained warm, and the potato tops green, and our beetles were set at liberty, they would deposit on the back of the potato leaf their small yellowish eggs. In a few days, the weather being warm, these are hatched and out comes the creeping and voracious larva. Inside of a month it attains its full size, stops eating, and descends into the ground and changes into the pupa. In ten or twelve days afterwards the perfect beetle emerges to deposit its eggs. If the cold weather sets in, the pupa remains in the ground till next spring, when it emerges as the perfect beetle in time for the young potato leaf about the end of May or first of June. Nova Scotia will very likely produce two if not three broods during the year.

It is reported, as its popular name implies, to have come from the base of the Rocky mountains, where it originally fed on wild species of the potato family. Tasting the cultivated potato, it then left its native habitat, and spread rapidly eastward. Strange to say, the President of the Entomological Society of Canada, who visited Colorado in August of last year, could find no Colorado Beetle either on wild or cultivated plants of the potato family. Why? Have their parasites destroyed them, or has there been a migration? Under its *elytra* the beetle has good flying wings which it can use quite well. But it has also used other means of conveyance, among the most effective of which have been the railway, the canal-boat and the steamboat. In 1871 they visited Chicago, and pushed their front up to the Canadian lakes. In 1872 they crossed the St. Clair, and spread rapidly eastward by canal and rail and probably also by wing. In 1877 or '78 it was reported at St. John, New Brunswick. A year or two ago it was reported in a potato patch in Nova Scotia. But it appeared to have been killed out. This summer, in July, we received a perfect beetle from Amherst. Nearly simultaneously it was reported in P. E. Island, and late in August from several portions of Pictou County. It has many enemies, even in the beetle family itself. They may be known by seeing them attack and destroy the larvæ for food. It is possible that under favourable circumstances, these insects might in the course of time increase so rapidly from the abundance of their food as to annihilate the potato beetle. The weather undoubtedly has something to do with the repression of this scourge. But at present experience has shown that the farmer himself must lead in the attack.

First, in early spring he must narrowly watch the potato field and, on a sign of the beetle, send all the little boys he can

get to examine every potato leaf for the eggs. If those are destroyed before they are hatched, there will be a very poor show for the next brood of beetles.

Second. If the eggs are hatched and the larvae are so numerous that picking is too slow, take of *Paris Green* a good tea-spoonful, put it in a bucket full of water. Mix thoroughly. Then apply, sprinkling with a wisp or brush to the potato tops, keeping the water well agitated. Don't breathe the dust of the *Paris Green*. Remember it is deadly poison to human life as well as insect life, if absorbed in any considerable quantity. It is an arsenite of copper, containing, if not adulterated, about 60 per cent. of arsenic, to which its effectiveness is due. London Purple, an arsenical compound, is also recommended, as well as a few other materials. But *Paris Green* appears to be the most effective, and, with ordinary care, should not be dangerous. The principal well sustained objection to the use of these poisons is that they kill also the insect parasites which attack the Colorado beetle. It is claimed that fowls can be taught to eat the larvae of the beetle, although they do not like the flavor of the insect at first. Various other receipts are given, in agricultural papers, which the farmers can experiment with. However, the methods of *picking* and *poisoning* by *Paris Green*, have, so far as the best authorities state, been generally found the most effective.

#### IMPROVED DAIRY BREED.

*[Quality of milk alleged to be determined by the sire, and the quantity by the dam.]*

The transmission of quality of milk by sire and quantity by dam is quite remarkable in the cross of Jersey bulls bred to Ayrshire cows. D. E. Wheeler, of Lake View Farm, Natick, purchased of me a daughter of the Ayrshire cow, Martha, an animal that has given her own weight of milk in each twenty-two days during five months after calving. The sire of the Jersey Wheeler cow was Duke, a son of the Jersey cow, Dairy Maid, an animal that has made 18 lb. of butter in a week. Martha's milk was such as is best appreciated by vendors of milk, carrying but little cream, though rich in casein and well adapted for use in hotels, restaurants, and city households. Yet the Wheeler cow with Jersey sire and Ayrshire dam has made 356 lb. of butter in twenty-seven weeks, besides furnishing milk for household use in a family of seven, who were not stinted in quantity consumed nor confined to skim-milk. For five months and twenty-two days after calving this Wheeler cow gave an average of 19½ quarts of milk per day.

Cannot the American breeder produce a race of cows by crossing these two estimable breeds, the Jersey and the Ayrshire, that shall stand at the head of all the breeds as butter makers? To-day a Jersey cow stands or falls on her record. Dairymen and stockmen as well demand merit with pedigree. At the present time the Ayrshire cow is found on the milk-producing farms adjacent to or within reach of city markets, and from which the city milkman draws his supplies. As stock for thoroughbred purposes, my opinion is that the Ayrshire are losing ground in the vast dairy sections devoted to butter making. Yet I see for these same Ayrshires, if top-crossed by Jersey bulls, the foundation of a magnificent race of cattle, their milk converted into gilt-edged butter and their steers into fine beef.

Were ten farmers, for instance, to make a compact to inaugurate and carry forward such a movement, discarding and not recording any female that yielded less than the 16-quart minimum of milk, and agreeing not to use any bull of the cross the milk of whose dam produced less than 14 lb. of butter per week, and by exchange and use of bulls of same age as the heifers, until the desired results be accomplished, in six years these ten farmers would be well rewarded for their labour and outlay, and would occupy enviable positions among breeders of fine cattle.

I am able to furnish another illustration of this theory of favourable influence of the sire in the matter of quality of milk in the case of a daughter of a Jersey sire out of a Dutch cow owned by the same D. E. Wheeler before referred to. The dam of the heifer mentioned, a Holstein cow, was noted for quantity rather than quality of milk, yet the half-bred cow from her gave, during the week from June 18 to June 24, inclusive, 171½ quarts of milk. This cow was tied in the barn five nights out of the seven. The last half of the week referred to was very hot. Having no special conveniences for setting this milk, Mr. Wheeler could not secure the best possible butter yield, yet 18 lb. and 9 oz. of butter was made from the 171½ quarts of milk, thus showing the milk to be only a fraction poorer in quality than the average Jersey milk. Of the latter I believe 8.62 quarts is estimated to make a pound of butter, while of the Holstein cross more than 9 quarts of milk were required to make a pound of butter. For the week, June 27 to July 3, inclusive, this same cow showed the following milk record:—Tuesday, 28½ quarts; Wednesday, 30 quarts; Thursday, 30 quarts; Friday, 26½ quarts; Saturday, 26½ quarts; Sunday, 26½ quarts; and Monday, 29½ quarts—or an aggregate for the week of 199½ quarts.

This remarkable yield was secured without the feeding of any cotton-seed meal, though it is claimed that such a feeding would have materially increased the yield. The cow was milked three times a day. As a test of the richness of the milk drawn from this cow, July 4th, the 8½ quarts given by her at the noon milking was set for thirty-five hours, then skimmed and made at once into butter, and weighed by J. A. Mabley in my presence, the result being 1 lb. and 3 oz. (down weight) of butter. On the same basis the 199½ quarts of milk yield for the previous week would have been equal to 26 261-343 lb. of butter for the week, which is the best record yet seen by me. If the use of a Jersey sire with Dutch cattle can produce such results, surely then we may say that the male begets quality of milk, while in this instance none will deny that the dam controlled the quantity of milk yielded by her offspring.

My position may not be invincible on the general principle I assert, yet the two cases described give convincing proof and furnish interesting and striking examples of the position taken. I. K. FELCH, Natick, Mass, July 11, in the "*American Cultivator*."

BONES AND OYSTER SHELLS FOR POULTRY.—An entertaining writer on the poultry question says: "I supposed I did my duty by my hens when I burned bones to ivory whiteness, ground them to the consistency of flour, and fed them occasionally, with the idea that I was giving them egg shells in a valuable form. But I did not consider that the gelatine, the fat, and other constituents of the bones which were discharged by the internal heat (leaving only a little pure lime) were really the richest possible food for the hens and the greatest egg producing diet that could be furnished them. My new tenant only bakes them, more or less brown, in an old tin plate on the top grate of the stone oven. This is not a very pleasant process, for, like all scorched portions of the animal frame, they gave a pungent, half-suffocating smell, which tempts you to 'clar de kitchen' till the fresh air from doors and windows has sent the objectionable odors into outer space. But you soon become reconciled to this invasion of ill scents when the fiery combs, the ceaseless cackle, the evident high health of your fowls and the daily filled egg baskets show you what they have accomplished. No other food, not any amount of food, if this is left out, will give you such returns; and this baked bone, pounded with a hammer on a rock in your poultry pens, and fed with ordinary feed, will give results that ought to satisfy the most craving disposition.



FROM LADY WILLOUGHBY'S  
DIARY.

OFt times I seemo to have no power of giving my Mind to Prayer or Meditation, but walke about the house, or sit down with a Booke or Needlework before me almost without consciousness and well-nigh without life. What doe all past Trials and Vexations appeare, now a burthen of Sorrow is layd upon me, I am unable to beare? I had Known Grief and Disappointment, and already in my short experience of life had learnt that this State of Existence is onely a Preparation for happiness hereafter, not happiness itselfe: But a precious Life came from Heaven, my beautiful Child smil'd on me; I held it to my Heart, and did think it was my owne. What greate evil have I done in thy sight, O God, that thou hast thus stricken me?

At Prayer my Lord was sensibly affected by hearing the words, *Suffer little Children to come unto me, and forbid them not, for of such is the Kingdom of Heaven*; the be- hold-

ing him thus overcome by strong emotion, led me to consider my owne Conduct, and I do feare me, I have been very selfish in the indulgence of my own Sorrow, too regardlesse of him who equally with me hath lost the deare Sonne of his Love, and who doth ever strive to strengthen and support me, and would fain lead me to take an Interest in our family Concerns, and in the Welfare of our neighbours, but Grief lieth heavy on his Heart. I felt another reproof in his looke of tendernes and commiseration, as, at our mid-day meal, I sent away the plate, the food untasted: I roused myself to exertion, and was repay'd the effort when his Eye rested on me approvingly. The Servants left the room, he took my Arm within his, and we walked to and fro in sweet and solemn silence: My Heart, which had been strangely shut up, melted within me, when he utter'd a few gentle Words: and I felt there was yet something left to live for. Surely to him was due the poore remaining powers of my Mind and Affections.

Arose this morning with mind more composed than for sometime past, *Cicely's* Mother ill, and I went down to see her: She is a bright Example of Patience, her Trials and Sufferings have bene manifold, bodily pain the least, has lost three Children in infancy and one daughter grown up: and

yet, can it be, has known still deeper sorrow.

Return'd through the *Park*: never saw Chestnuts and Beeches more beautiful in the autumn tints, the fallen leaves crushed pleasantly beneath my Feet, the Sun was setting before I was aware, and the Aire grow suddenly chill. Taking the nearest way, I entered the house by a side door, and there, beneath the old Mulberry, saw the little Cart and Whip as they had bene left by my poore Child the last he was out, and where he looked so tired, and I carried him in; I stooped and hiding it beneath my cloke, went straight up stairs: no Hand had touched it since his: the tears I wept over it did me good: it seemed my innocent right to weep over this Token of my *lost one*.

Health and strength mend: make a point of walking in Long Gallery when-soever the weather admits not of my going out: while so employed repeat Psalms and other portions of Holy

Writ, therein finding profitable subjects of meditation and peaceful Thoughts: Often has been brought to my mind the text, *I was brought low, and He helped me*: now is my deare Mother's Care repaid, in the help I find it to have by me such recollection of the Lessees she taught.

My early habits in the morning have been saily interrupted: frequent restless nights, often sleeplesse for hours together, and awakening languid and ill at ease: often in the long nights, my Fancy is disquieted in looking forward to again becoming a Mother, and that ere long, least happy the Infant nourished beneath a heart so saddened by Grief, should, if permitted to enter on existence, be deprived of that Joyfulness of nature which is the Birthright of the young Spirit; but whatever may be the Ordering of my *Heavenly Father*, let me submit; too often have I rebelled against his just Appointments. In the words of the Psalmist, let me pray, *Enter not into judgment with thy Servant, O Lord, my Spirit is overwhelmed within me. my Heart within me is desolate: hide not thy Face from me: in thee do I trust.*

Once more with a grateful Hearte do I record the Mercy of our *Heavenly Father*, in that he hath permitted his upworthy Servant to live to behold the face of another *Little One*. Yet now must I rejoyce with trembling over a Being so fraile: the fulnesse and brightness of a young Mother can never againe be my Experi-

ence, since that joye had bene the Source of a Suffering and Agony never to be forgotten. Death follow'd into the Habitation wherein Life had just took up its abode. Not in short space of time can the Heart recover such Dispositions, and in the Excellency of no after joys can it ever forget the stroke that first destroyed its sweetest hopes: Death once seeme at our hearth leaveth a shadow which abideth there forever. During the long period of Sicknesse that has been my portion, I have endeavour'd through the *Divine Grace*, profitably to employ the Solitary Houres, and do now see much Mercy in the return to Health graduall. The Needful Quiet led me to seek a Spiritual Communion, whereby I humbly hope I am the better fitted for the Performance of the several Duties of Life, trusting not in my own Strength, that truly would be a broken reed. *Lord!* thy rod and thy staff they comfort me: yea, even the rod, though it hath smitten me to the earth.

## Advertisements.

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

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