

very intimately acquainted with the province of Nova Scotia, but do not know of any other wild vine.

Yours, &c.,
MAX D. MAJOR,
 "Saint John Globe,"
 Editor's Room,
 Saint John, N. B.,
 Dec. 10th, 1883.

DEAR SIR,—Wild grapes are not uncommon along the St. John river.

At Fredericton I know of several vines in gardens, which were transplanted from the woods, and some of which have seeded themselves.

Yours,
JOHN ELLIS.

Annapolis Royal, Dec. 10th, 1883.

DEAR DOCTOR,—Answering your enquiries in the newspapers, I beg to inform you I have always known a wild grape vine within a mile or more of this town. In a deep ravine, whose steep sides prevented culture, it flourished. It was surrounded by cultivated fields, cultivated no doubt by the French, before Nicholson's capture, a mile or more from the steep hills, now as then covered by the forest primeval.

It was very luxuriant, and, though I do not recollect eating the grapes, yet its flowers and half ripened branches I well remember. It was an object of curiosity to me especially as proving the exactness of old LesCarbot, our most exact and homeliest historian. Without knowing I thought it the little Fox Grape so luxuriant on the warm south side of New England and which as a boy I knew so well—very thick skin, and very tart flavor. I have no doubt it still exists, but the snow would cover it now. I hear of many other vines about here, but this is the only one I have personally seen. If you want more knowledge let me know and next spring I could send you a specimen.

B. GILPIN.

St. John, N. B. 10th Dec. 1883.

MY DEAR SIR,—I notice your communication in Saturday's *Chronicle* regarding the "Wild Grape" and its Northern Limit. Some years ago I was puzzled over the statement in Demont's account of the discovery of the St. John River that they noticed (in June 1604 or 5) grapes growing in profusion on its shores. For some time I was under the impression that they had mistaken some other vines for the grape. But I found afterwards that in fact the wild grape does grow in several places on the River St. John. On the sandy flats along its south-westerly bank at Westfield, in Kings County,—luxuriantly on some islands near Oak Point known as "Caton's Island,"—a little further up and beyond this on the Islands at Oromoeld

and Prince William. Curiously enough I have always heard of it on the south-westerly shore of the River or the Islands, never in a wild state on the northerly or easterly bank, nor can I discover it on the Kennibecasis tributary where I have searched for it, as I have a summer residence at Lakeside near Hampton, where I am collecting these wild vines from Westfield, Greenwich, etc., with a view to amusing myself testing them as stocks on which to bud or graft some of the hardier, improved varieties.

I am Dear Sir, yours faithfully,
W. M. JARVIS.

Fredericton, N. B., Dec. 29, 1883.

MY DEAR DR. LAWSON,—I am in receipt of your note referring to the distribution of the wild grape in New Brunswick, but regret to say that I have but little information to give upon the subject. I have gathered the fruit in some of the valleys near Fredericton, as at the Falls of the Nashwaakisis, and it is quite common on the intervals and islands of the St. John River above this place, but I have never made any special notes regarding its occurrence. I think it likely that Mr. Matthew may be able to tell you something more about it, especially in the southern counties.

I am, Sir, &c.,
L. W. BAILEY.

To the Editor of the *Morning Chronicle* :

SIR,—In regard to Prof. Lawson's enquiry about localities where the wild grape vine is found on the Atlantic coast of this part of America, I would beg to state that I have studied the botany of Prince Edward Island carefully for years and have never seen anything of this plant here.

There is apt to be great incorrectness in the reports of unskilled observers on plants. Some species of our wild brambles which have a climbing habit, as *Rubus occidentalis* might be mistaken for *Vitis*.

Yours,
FRANCIS BAIN.

North River, P. E. I.

The information so far obtained shows that the present most northerly points of the Wild Grape (*Vitis cordifolia*, or its near ally *V. riparia*) are the following:—

Annapolis Royal, Co. Annapolis.
 West River, Co. Pictou.
 St. John River, New Brunswick.
 Isle aux Coudres, St. Lawrence River.

At the sale of Hereford cattle by Hon. M. H. COCHRANE, of Canada, at Chicago, Nov. 23, 19 head made an average of \$379.47—total, \$11,010. Mr. C. also sold 24 Aberdeen Polls, averaging \$44.58, and 2 Galloways for \$390 and \$235 respectively.

MANURE CONSTITUENTS IN FOOD.

I am quite prepared to see you hold up your hands in incredulous astonishment, my friends, when you read this present article. In fact, nothing but ocular evidence could have persuaded me, I who am speaking to you, that, in certain cases 95 % of the most valuable constituents of the food must be sought for, not in the flesh, fat, bones, etc., of the feeding animal, but in its manure.

For the same weight of dry food, the sheep produces nearly twice as much manure as the pig, while the ox produces even more manure than the sheep. You will observe that the food given to the pig, consisting as it usually does, in practice as well as in Lawes' experiments, of meal of different sorts, is much more digestible than the food given to oxen and sheep, a large part of which is made up of hay; and you will also observe that the quantity of dry manure (litter excluded) produced a week per hundred pounds of live weight, was nearly the same whether the animal eating the provender was ox, sheep, or pig: the greater consumption of food by the pig accounts for this.

We have also seen, when speaking of the valuable constituents of manure, that the nitrogenous matters and the ash are the only parts worth preserving—the bulky parts, the straw etc., are useful as mechanical distributors, as attractors and retainers of heat from the sun-rays. If the live weight of an animal remains unchanged, and there is no production of weight, all the ash and the nitrogen contained in the food will be voided in the dung; and, of course, the reverse is equally true; if the bodily weight is increasing, or milk is being produced, the amount of ash constituents and nitrogen in the manure will be less than that contained in the food in direct proportion to the quantity of those substances which has been converted into animal produce.

Some of the albumenoids (nitrogenous) and ash constituents are left undigested during the passage of the food through the alimentary canal; these are voided in the solid dung. The digested part of these constituents; passing of course into the blood, becomes animal increase if the animal is giving milk or increasing in weight; and what remains is separated from the blood by the kidneys, and is discharged in the urine.

We saw, when considering what became of the food eaten by the three varieties of animals concerned in the Rothamsted experiments, that of every hundred of albumenoids (in barley meal consumed by a pig) twenty-one will be voided in solid dung, and seventy-nine pass into the blood. Now, if a pig con-