

# THE GLEANER:

AND NORTHUMBERLAND, KENT, GLOUCESTER AND RESTIGOUCHE  
COMMERCIAL AND AGRICULTURAL JOURNAL.

OLD SERIES] *Nec araneorum sane textus ideo melior, quia ex se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.* [COMPRISED 13 VOLUMES.

NEW SERIES, VOL. VI:] MIRAMICHI, TUESDAY EVENING, FEBRUARY 15, 1848. [NUMBER 19.



## Victoria House, Edward Daley & Son,

Return their sincere thanks to the Public, or the Liberal support they have received during the time they have been in business, and beg to intimate that they have just received from St John, their monthly supply of well selected

### DRY GOODS,

to which they invite the attention of the public.

Persons desirous of purchasing will find it well worth their notice to call.  
Chatham, Jan. 26th 1848

## STAGE COACH.

### Summer Arrangement.

The subscriber will continue to run the Mai Stage between

Fredericton and Miramichi  
During the present season, ONCE PER WEEK  
EACH WAY.

The Stage will leave the subscriber's residence, in Chatham, every MONDAY MORNING, at 9 o'clock; Douglastown at half past nine and Newcastle at 10 o'clock, and arrive in Fredericton the following morning at 9 o'clock. Will leave the North American Hotel, Fredericton, the following FRIDAY morning at 11 o'clock, and arrive in Chatham the day following at the same hour.

The subscriber has on this line, at all times, a comfortable covered Coach, and a careful driver, who will afford every facility and accommodation to travellers.

FARE—£2. Each passenger will be entitled to carry with him 40 lbs of luggage; anything over that weight, 2 1/2 per lb.

Any person wishing to procure an Extra Conveyance from Chatham to Fredericton, can obtain the same on reasonable terms, at any time, or applying to the subscriber. He also keeps on hand Extras for the purpose of forwarding passengers by the above coach, desirous of getting to Stediac in time for the P. E. Island steamer.

WM. M. KELLY.

Miramichi, June, 1847.  
N. B. Passengers will please be punctual to the hour of starting. All luggage at the risk of the owner.

## HERRINGS & COD-FISH.

50 Barrels No 1 Labrador Herrings,  
50 Barrels No 1 Cango Herrings,  
30 Barrels Pickled Codfish,  
50 Quintals Codfish,  
2 Barrels Cod Oil,

For sale low by

WM. FRASER.

February 8, 1848.

## Books and Hats.

For sale by the Subscriber,

Sears' History of the Bible.  
do Pictorial Illustrations do.,  
do Bible Biography.  
do Guide to Knowledge.  
do Wonders of the World.  
do Sunday Book.  
do Pictorial Library.  
do Historical American Revolution.  
do History of Great Britain & Ireland  
do Information for the People.

Also—an assortment of Hats:—Black and low, crown Hats, Silk and Beaver do.

JOHN RUE.

Chatham, July 5th, 1847

## Notice.

All persons having any just demands against the Estate of the late JOHN LYONS, late of the parish of Newcastle, Farmer, deceased, are requested to render the same duly attested, within three months, and all persons indebted to the said Estate will please make immediate payment to

RICHARD HUTCHISON } Executors.  
JOHN PORTER }

Newcastle, February 4, 1848.

## CO-PARTNERSHIP.

The subscribers having entered into Co-PARTNERSHIP, as Attorneys and Solicitors under the firm of *Johnson & Mitchell*, the business will be conducted by Mr. Johnson in Chatham, and Mr. Mitchell at Newcastle.

J. M. JOHNSON, Jun.,  
P. MITCHELL, Jun

Miramichi, 1st November, 1847.

## Agricultural Journal.

### CHEMICAL PRINCIPLES OF THE ROTATION OF CROPS

By D. P. Gardner, M. D.

#### 1. The object and necessity of Rotation.

That no doubt may arise of the object to be gained by systems of rotation, I will advance a definition which may guide us in the following discussion. The object of a rotation is the production of the greatest profit in crops with the least exhaustion of the soil. The views entertained by practical men on the subject are however by no means fixed; in many parts of the country it is imagined that the only condition of the rotation is that the same plant be not cultivated annually, and that a succession of corn, Wheat, and Oats, is as much a system of rotation as any other plan—it is indeed a rotation, but not a system.

How far there is any practical necessity for rotation is also a point in much doubt. We are often assured by good farmers that given crops, as Corn, Wheat, Hemp, have been grown in certain districts from time immemorial. These are exceptions to a general rule and of no force whatever; they prove that there are spots on the earth's surface of extraordinary fertility, or what is more frequently the case, that in such districts there is some cause reparation, by freshets, irrigation, or the washings of adjacent hill-sides. Wherever the fertility of new lands which results from the growth of forests or accumulation of uncut grasses for centuries, is exhausted, and the soil reduced to a state similar to the subsoil, it is necessary to adopt some means to increase its yield, either by manures or a system of rotation. That this condition is ultimately reached in uplands, will be readily granted; the only point worthy of further consideration is, how far a rotation will economize manure already in the soil in new lands, or manure added artificially. This is the immediate subject of the memoir.

Experience and analogy have led men to adopt rotations, wherever agriculture has been practiced for a length of time. Experience has fully demonstrated that no plant will continue to be luxuriant under ordinary circumstances for an indefinite period. To this rule trees are only an apparent exception, for they submit in time to new species when left in natural state; they live indeed for centuries, by the great development of their roots and penetrate year after year into new strata of soil, but it is well known that in northern forests the Birch and Maple follow the Pine, and in more temperate regions the Pine succeeds the Oak and allied genera.

Analogy is remotely a guide to the rotations in the case of forests, but if we observe the phenomena of vegetation on new lands it becomes extremely instructive. The planter of the southwest makes haste to cultivate cotton on his new lands, because for a few seasons he is not overwhelmed with Grasses, but is called upon to combat annual weeds easily overshadowed by his crop. If a portion of new land be left waste discover that a succession of plants invades its surface and not certain species, we find that however convenient the seeds may be, the plants of the first year give place in time to new genera. To this point I have paid particular attention in Virginia, and find that however the species may vary in different soils, there is a sequence of natural families sufficiently apparent. Where the land is remarkably rich, the plants first developed are species of the families Chenopodiaceæ, Polygonaceæ—these give place to Malvaceæ, compositæ, and Umbellifera; and finally species of Leguminosæ, Rosaceæ and Gramineæ succeed. It is not asserted that other families are absent, but these are so fully developed as to be characteristic of the vegetation. This natural succession differs with the latitude soil and degree of moisture; but whatever may be the families, it is sufficiently apparent that the plants of new soils, or

rich weeds as they are called, give place sooner or later to those of the barrens. Nor is this the only evidence of a natural rotation. After a season, when the roots of Grasses have produced a mat of vegetable fibres, is it not well known that the meadow becomes infested with wild Onions, Buttercups, (Ranunculi), Thistles and other weeds, which, if not exterminated, soon overwhelm the Grasses? Hence the prudent husbandman adds ashes or lime, and scarifies his meadows, for by those means the roots are rapidly decomposed, and the soil brought back to a state of composition favourable to the development of Grasses; or if he be conducting a rotation, he ploughs the meadow, and thus acquires by art a natural coat of manure, of great service to such cultivated crops as, like the Chenopodiaceæ, require a soil rich in organic matters.

2. Explanation of the foregoing Natural Revolution.—The difficulty of making certain plants grow after each other in the same soil, was said to arise from the mutual repulsion of plants, and explained by Von Humboldt, Plenck, and De Candolle, by reference to the experiments of Brugman and Macarie. These naturalists discovered that the root of a plant growing in water, throws out a dark mucilaginous fluid which they called its excrement. Thus excrementitious deposit of any plant is supposed to be inimical to the growth of its species, and also to some others, but may on the other hand be of service to an entirely different family. De Candolle saw in these reputed facts the explanation of rotations, which he therefore resolved into the art of discovering such a succession of crops, that each might flourish on the organic remains of its predecessors. Clean fallows were also commended as a means of hastening the decomposition of excrementitious matters.

But it is neither satisfactory shown that excrementitious matters accumulate in the soil nor that they are inimical to the growth of the species. Macarie, Bracconot, and others have failed to obtain positive evidence of such dejections, when a soil was employed instead of water, and Alfred Gylde states that plants are benefited by watering with a solution of their excrementitious matters. Some, as Boussingault, go so far as to regard the dark mucilaginous matters said to be exuded by roots in water as the effect of a diseased action, denying the exertion but this cannot be maintained, for amphibious plants as Mints, Cress, Myosotis, palustris, and other species, which are not placed in an abnormal situation when growing in water, yield this substance. The experiments of Gylde appear also explicit on this point. If we are to receive the theory of Durochet, that the penetration of the soil fluid through the roots is phenomenon of endosmosis, there is a necessity of admitting the passage outwards of a portion of the elaborated sap, which Gylde states to be identical in composition with the excrementitious matters collected by himself. That none should be obtained from sand, or soil, under certain circumstances, is not surprising from the exposure of the exuded matter, over a large surface and in contact with oxygen absorbed from the air, would rapidly change it into a new body capable of escaping the ordinary tests—in the same way that alcohol by mere exposure over an extended surface is rapidly converted into acetic acid by oxydation. Although it is premature to deny that a portion of elaborated sap does escape from the roots of some plants it is very evident that this does not create a deposit injurious to the future growth of the species, and it is not the principle on which rotations are to be devised.

The natural succession of plants is connected with the presence of organic matter in the soil, the richest weeds which first occupy the surface having the greatest necessity for it, and thus through successive groups to the Grasses and forest trees which grow well without any portion in the soil. Other elements of fertility being present, the Chenopodiaceous and allied families thrive only in

such localities as yield azotised matters since they cannot grow without a supply from the soil. This surmise is sanctioned by the obvious presence of organic matters in the soils where they grow, and by the fact that some species exhale ammoniacal gases, but it is fully established by the experiments of Boussingault. This Chemist grew Clover, Peas, Wheat, and Oats in a soil completely destitute of organic matter, and supplied them with distilled water only; the Clover and Pease were found to double their azotised matter during growth whilst the Oats and Wheat gained none whatever. As there was but one source of azote present, the atmosphere, it is apparent that the former have the capacity of supplying themselves therefrom, whilst the grain plants are altogether dependant on the soil. Hence in a soil charged with organic matters, rich in azote, those plants which require a supply by their roots will grow freely, and so far exhausts it in time as to render it unfit for the species which is succeeded by an intermediate class, and finally by the Gramineæ, Leguminosæ, and others capable of subsisting on aerial azote, and so far from exhausting, adding it to the soil. From this function of plants, we see an explanation of the natural rotation, and what is of more moment, a means of adapting our succession of crops to the accumulation as well as removal of azotised matters.—*Transactions of the American Agricultural Associations.*

### DEPEND ON YOURSELF.

The editor of the Albany Knickerbocker is a sensible man. There is more truth than poetry in the following, which we copy from his spicy paper:—

"Bad luck, as well as mischance and misfortune, are all the daughters of misconduct, and sometimes the mother of success, prosperity and advancement. To be thrown on one's resources, to be cast into the very lap of fortune. Had Franklin entered Philadelphia with a thousand dollars in his pocket, instead of one shilling and nine pence, as he did, in all probability he would have gone on a spree instead of hunting up employment, and died at thirty five from driving tandem teams and drinking brandy smashers, instead of living to the green old age of eighty, and dying a philosopher, whose amusement was the taming of thunderbolts and bottling up lightning. Had Napoleon's father been the owner of a princely estate, his son would have never got to be emperor. A good kick out of doors is better than all the rich uncles in the world. One never tries to swim so hard as when he has to do it or drown. To be a rich man's son is the greatest misfortune that can befall a young man, mentally speaking.—Who fill our offices? not the children of the rich or the sons of the opulent."

**Best Remedy for Burns.**—Pound and sift wood soot and mix it with sweet lard, and apply it, spread on linen rags. It will ease a burn quicker than anything. If the skin is off, the great thing is to keep it covered close from the air. If the burns are large and bad, give salts or cream tartar as a cathartic.

**Composition for Shoes.**—Two parts of tar, two of beef tallow and one of beeswax make a good composition for boots and shoes. Apply it quite warm, and warm the leather that it may penetrate. As farmers are frequently exposed to wet they should be careful to keep their feet dry and warm, for on this their health and comfort in a great measure depend. There are various compositions that are good to resist water and preserve leather, and the proportion of the above may be varied. Tar and tallow will answer alone; so will tallow and beeswax.

**Black and White Paints.**—Tools, waggons, &c. painted black, absorb the sun's rays, become hot, and warp and crack. Painted white, the reflect, and do not absorb the rays consequently do not become hot, and they remain uninjured by warping. Hence all wooden articles should be painted of some light color.