THE GLEANER:

AND NORTHUMBERLAND, KENT, GLOUCESTER AND RESTIGOUCHE

COMMERCIAL AND AGRICULTURAL JOURNAL.

Old Series] *Nec aranearum sane textus ideo melior, quia ex se fila gignunt, nec vter vilior quia ex alienis libamus ut apes.* [Comprised 13 Volumes.

New Series, Vol. V:] MIRAMICHI, SATURDAY AFTERNOON, NOVEMBER 21, 1846. [Number 7.

List of Letters

Remaining in the Chatham Post Office, October, 1846.

Ann & Mary ship Mr George Norman
Agent ship James Anderson
Anderson Geo teacher Bartibogue
Anderson Margaret
Aurora vessel the mate
Aisple John
Ann and Mary's brig
Alexander barque captain Doeg
Abbott R rope maker
Blake T Chatham head
Beale Michael
Brundage Jos care of A Fraser
Bulger James care of John White blk river
Blance M little bay vin
Bardon Thos care of D Cremmin
Bowden F Chatham
Brown Isabella care of S J Frost
Blake Robt blk brook
Beaulier Oliver carpenter
Connel John care of David Hartt
Carpenter J Cavendish
Collins W care J Hea
Chisholm Wm care of A McLellan
Cusack Honora care of Mr Lyons
Cockeran Mrs M care of Mr Harper
Chambers J bay du vin
Courtney ship captain Jones
Costollo M Chatham
Davis Richard care of James Bunlay
Dennis widow care of M Egan
Donahue C bay du vin
Donahue S care of T Gorman
Darcy John care of J Baldwin
Doherty J shoe maker
Doherty J care of R Purtell
Donahue Pat Chatham
Duffy Pat
Davis D cere of Lane ballast master
Derragh D care of T Foreman
E Holderness barque capt Predger Wm Anderson C Thorp
England Robert Napan
Elkin Daniel do
Ed John
F er Margaret
dge Mathew care of T O'Laughlan
Fee Edward
Frost Jno till called for
Fairful David
Fahey J bartibogue
Francis Joseph
Foran Pat
Gorman John
Geary M [or Curry]
Gibbs N with speed
Gruar David for John
Gray Reverend A
Gunner John Chatham
Gunn B point aux carr
Griere G at J Russell's
Herron Authony ca e of H Cunard
Henderson K ferryman
Hamilton Johanna care of John Hea
Hogg Richard foundry
Harper James farmer
Jardine Mrs A Napan
Jackman James
Jarder James
Jamieson Jane
Knight John rock head
Kavanagh Pat
Kenny Pat
King Philip shipwright
Kennedy Euphemia care of A Russel
Lobban Alex Chatham
Little Wm Chatham
Laugnlin Janet Jessie
Love Wm stevedor
Lord Glenelg ship captain Martin
Manning Ellen near Chatham
Murray Thomas care John M Donald
Murray Tho. Chatham
Mace Christian Bay du Vin
Murray Thos. Glenelg
Malagony Tady Mrs
Munroe William Black river
Mulligan James
Mills Thomas
Murphy Eliza
Morris George
McKay Nicholas
McCormack Ronald
McLane Margaret lower bay du vin
McConnor James
McLeod Janet
McLeod John care of R Murray
McDonald James point aux Car
McCosfeny Fergus
M Grath John
Mann Ann widow
McKinnon Alex
McDonald J bayduvin 2
McCormick Mary
McNiel Alex shipyard
McRae John
McClanagan James
McArthur Alexander
McKenzie Wm
McLean Donald lower bay du vin
McGrath Margaret
McDonald C bayduvin
McMahon Richard
McDonald James point aux car
McGorman James
McPhee Alexander
McNamara John care of Rev Mr Egan
McLean Jos formerly of Picton
McDonald R Alnwick
Nash Geo Eel River
O'Connor T Napan
O'Donnell Timothy
Peterson Eliza care of Dr Pallen
Parsons John
Phelan James
Peck Sherwood 2
Purcell Edward
Power Wm
Quinn Edward Richibucto road
Quinn R Chatham
Quinn Wm do 2
Rennie Geo carpenter
Ryan P care P Butler
Redmond Lawrence
Ryan Michael
Rigley Mat stonecutter
Richard M
Roddick Wm tailor 2
Shanahan Rev John
Smith Joseph
Sutherland D Chatham
Stewart C commisn'r
Stothart Mrs Sarah
Sinnot James
Seagur W capt care of Mary Washburn
Smith W care H Carman
Scott Margaret
Sipple John
Sweezey Reuben
Scott Joseph
Thomson W postoffice
Thompson Robert
Treaner Thomas
Vennis capt Francis
Wilson Wm
White John
Williams P A care of John Ganor
Williston John
Watson A Chatham
Wallace John Nelson
Wall Miss Mary Ann
White Jas shoemaker

JAMES CAIE, Post Master.

Agricultural Journal.

From the Albany Cultivator.

SCIENCE AND AGRICULTURE.

A department of analysis, perhaps the least liable to erroneous results, is the examination of *manures*. Fertilizing substances are known by their effects applied separately to plants or in mixture; or by the fact that fertile soils and well grown plants are found to contain them. Now, analysis will show what proportion of the fertilizing materials exist in different kinds of manure; and hence the value of manures may be ascertained, at least to some extent, by a previous chemical examination. A comparison of common manure with guano, exhibits this principle in a striking light:

A ton of manure	yields	2 lbs.	and	4 oz.	potash
" guano	"	66	"	8	" "
" manure	"	1	"	10	" soda
" guano	"	36	"	15	" "
" manure	"	5	"	1	" ph. acid
" guano	"	283	"	9	" "
" manure	"	1	"	4	" sul. acid
" guano	"	93	"	8	" "
" manure	"	1	"	9	" clorine
" guano	"	62	"	00	" "

Here it will be seen that most of these enriching ingredients are from thirty to 70 times as great in quantity in guano as in common manure. Experiment accordingly proves that guano often produces from thirty to seventy times as great a growth in plants as an equal quantity of manure.

One of the most powerful manures is poudrette, a preparation from night-soil. Let us see what kind of comparison analysis will draw between this substance and guano.

A ton of night soil	yields	6 lbs.	and	7 oz	potash
" guano	"	66	"	8	" "
" night soil	"	4	"	10	" soda.
" guano	"	33	"	15	" "
" night soil	"	120	"		ph acid
" guano	"	283	"	9	"

Here we see that guano still vastly exceeds even night-soil in these important requisites to fertility; although the latter possesses a very striking superiority in composition over common manure. We accordingly find in practice, that the comparative value of these different manures is very nearly the same that analysis indicates, when the average of experiment is taken.

There are many other substances which chemistry points out as valuable for manure, which are found useful in practice. Many of these, however, if used singly, or mixed with only one or two others, often give uncertain results, frequently prove failures, and sometimes are a positive injury. Sulphate of ammonia, nitrate of soda, sulphate of lime, silicate of potash and other salts have been known to produce extraordinary growth; but in other cases were valueless. So many causes control their action, that this uncertainty must continue to exist. The soil may be already supplied with them; drought may derange entirely their action; and other influences now unknown may produce a similar result.

Common barn-yard and stable manure though not so powerful, appears to be more universally beneficial than any other from the certainty of its operation. This certainty is dependant on the great number of its ingredients. It contains a large portion of decaying vegetable matter derived from the pulverized hay consumed by the animal; it is rich in ammonia and other animal matters, resulting from the secretions; and it contains many salts derived from both these sources. Poudrette posseses nearly the same advantages; and guano, from its great quantity of animal matter and enriching salts, rarely fails if properly applied. With single substances, however, there is great uncertainty, until experiment points the way.

Wheat was found by H. Davy to contain more nitre of potash than any other farm product; yet the author of British Husbandry says, "although it has generally occasioned an increase of straw, the yield of grain has not been improved, and the crops have in many instances been found usually subject to mildew." Similar exerments by the writer, have produced no favourable result. Hence we percee hat supplying, simply, an essentic ingredient, does not always answer he purpose. Artificial guano, made by an observance of analysis of the natural though useful, has not been found nearly so powerful as the latter. Nitrogen, supplied properly to plants, causes a healthy and rapid growth; yet although this element exists uncombined as a component of the atmosphere, and in direct contact with the leaves of plants they will perish for want of it before they will draw a particle of it from the air. Hence in all chemical deduction relative to manures, the experiments of the cultivator only are to be depended on, and to remain as the decisive test. Suggestion of incalculable importance may come from theory, but practice alone must prove their value.

The importance of the analysis of soils, to determine deficient ingredients, and then to supply defects, has been already adverted to. Although its value thus appears to be very great, and has been much extolled by chemical writers and their imitators, yet there are difficulties in practice which render extreme caution in drawing conclusions very necessary. The constituents of plants may indeed be determined with much accuracy; and the different ingredients in manures, and their consequent adaption to those plants and their comparatively fertilizing effects may be ascertained frequently in the laboratry. But the extensive diffusion of these ingredients through a acre of soil, and the exceedingly minute proportion which some bear to the whole bulk of the soil, renders the determination of these proportions, if not the actual existence of the ingredients, difficult if not impossible. A distinguished chemist told the writer, that for ordinary earthy substances, the detection of a thousandth part required skilful analysis. Minuter portions of some constituents are more easily detected than others. But suppose a ten thousandth part the utmost limit for agricultural pratice, a few instances will show the inaequacy of analysis in cases which may occur:

A considerable portion of sulphate of lime or gypsum is found to exist in red clover, and other leguminous plants. Hence a reason that gypsum so eminently benefits the growth of red clover. And here reason would here suggest, that to determine the fitness of a soil for clover, an analysis should be made; if it contain gysum all is right, and the clover will florish; but if not, then a dressing of the material must be applied. This is the theory. Let us compare it with practice. A hundred pounds of gypsum to the acre has often doubled the clover crop; and a tenth part of that quantity, seven pounds to the acre, will produce in some cases very sensible effects. After it is spread on the ground, and before any sensible effects is produced on the crop, the rain has usually dissolved it and carried it into the soil and among the roots of the young plants. It thus becomes intimately diffused through the soil. Now, will analysis detect its presence? If the soil is a foot deep, half a grain to a pound will indicate a hundred pounds to an acre. Yet this half a grain to a pound is only one fourteen-thousandth part; though often producing a most luxuriant growth of red clover. A tenth part of that is only one hundredth and forty thousandth part; yet this minute portion often is found to exert a very visible influence in growth; though far beyond the reach of ordinary analysis. A crop of clover of a ton and a half to the acre, contains only three times this amount, or thirty pounds of gypsum in its stems and leaves.

Again; twenty pounds of muriate of ammonia applied to an acre of rye added five bushels to the product. But this is only one seventy thousandth part of the soil. One hundred and forty pounds of guano added more than sixteen hundred pounds to an acre of hay. But this manure, when diffused through the soil, constituted only about a ten thousandth part; its proportion of phosphoric acid, forming about one eighth and a very important ingredient, would be about one eighty thousandth part; its sulphuric acid would constitute less than a two hundred thousandth part, and its potash about one three hundredth thousandth part. I am not aware that many chemists claim sufficient skill to determine such small proportions in the soil; yet these experiments show their great practical influence when existing as added constituents.

The ammonia of the atmosphere is considered by eminent chemists as holding a very important relation to the healthy and vigorous growth of plants; yet its presence has never been directly detected, and only indirectly by favourable opportunities when absorbed in snow or rain water. Eminent and accurate experiments has not discovered even this until within a few years.

It is not denied that a bright light may be thrown on the practice of agriculture by carefully conducted analysis of soils. The result of many examinations which have been made, show frequently a very striking difference between fertile and barren soils. But these analysis were conducted with the most rigid care and accuracy by men of such skill and eminence as could hardly be expected to be at the service of any common practical farmer. And after all accurate experiments in cultivation would determine all that is necessary in many points of practice, and would in any case be needed as a test of the truth of theory.

It is to be hoped that chemists will continue to pursue their investigations on doubtful points, until certainty, if possible may be arrived at; and that all well established facts may have an extensive application in farming as their value merits. But it must be admitted that there has been a disposition to take too much for granted, and to overstate the certainty of success in connecting chemistry with agriculture. The precision so striking in other sciences, and other applications of this science to various arts, does not hold in case of the growth of plants, which, though governed by fixed laws, is too much controlled by circumstances and too much obscured from view, to be thoroughly understood. This growth is slow and imperceptible to the sight; plants are surrounded by an invisible air above ground, and are hidden from view below ground; their surfaces receive nourishment by pores only seen by powerful microscopes; the nourishment is drawn from vapours and floating gases in the air, and liquids in the earth charged with many substances in minute proportions; and the whole process is entirely beyond the reach of the closest scrutiny of the eye.

It is not surprising therefore that there should be a difference of opinion among high authorities. The constituents of vegetable mould have led to much dispute, and no less than twenty different substances have been discovered or named by various chemists. Dr. Dana, in attempting to prove the inutility of applying lime and potash as manures, shows that nearly all soils contain lime and potash enough for the growth of all crops which may be produced on the land for thousands of years. Yet other chemists dwell on the importance of these substances applied as manures, and direct experiment shows their utility. Leibig says that 'wheat does not flourish in a sandy soil, and that a calcareous soil is also unsuitable for its growth unless mixed with a considerable quantity of clay'—'because these soils do not contain alkalies in sufficient quantity.' But Johnstone shows not only that excellent wheat crops are reaped from those soils, but that turnips, universally admitted to be finely adapted to sandy land, contain in a single crop of ordinary productiveness, nearly ten times as much potash and soda as a crop of fifty bushels of wheat with the straw included. The contradictions of chemists on the single article of gypsum alone would perhaps fill a volume. According to Kollner, its action depends on the power possessed by lime to form with