

# 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. V.]

MIRAMICHI, TUESDAY EVENING, FEBRUARY 16, 1847.

[NUMBER 19.]

## Agricultural Journal.

### From the Western Agriculturist. ON AGRICULTURAL IMPROVEMENTS.

The year which is now drawing rapidly to a close will long be remembered and marked as an important and instructive one in the annals of agriculture. Never before, in the same space of time, have so many and varied experiments been performed—never before could the science boast of such a band of experimentalists—nor has such a sum of money been previously expended in endeavours to increase the fertility of the land and the luxuriance of the crops. We have now arrived at a period of comparative inactivity; and our time may be profitably employed in inquiring what preparations we can make for next year's investigations, and what subjects will be most likely to yield important results to our inquiries. In short, this is the period in which we must plan our experiments for the next season, examine the precautions which is necessary to insure success, determine the details of the operations we intend to carry out, and obtain all the preliminary information that we require. There are many farmers throughout the country who are most anxious to join the ranks of the experimentalists, but feel at a loss what subjects to fix on for examinations; and we fear that there not a few who have proceeded without method, have, as might be expected, experienced failures, are ready to class agricultural improvements with the whims and absurdities of the day, and are determining to return to the good old plans of operation to which they were accustomed before guano and chemical manures had turned their heads and emptied the pockets of the farmers.

To these two classes these notes are particularly addressed; and an attempt will be made to show that it is probable that improved methods of cultivation may be ascertained by means of experiments, if they be carried out in a proper manner; and care be taken to observe and record with accuracy the results. For example, let us now confine ourselves to one branch of this extensive subject, and one branch is perfectly sufficient to occupy the spare time of the farmer for at least one season. Attempting to accomplish too much is one of the most frequent and certain causes of failure.

The greatest portion of all plants are composed of the bodies known to chemists under the names of carbon, hydrogen, oxygen, and nitrogen, or charcoal, water, and nitrogen; but these do not constitute the whole bulk of the vegetable. If we burn it, these substances are consumed or driven off, and a matter called ash remains, which is small in quantity, but still important; nay essential to the well-being of the plant. Those portions which are dissipated by heat, are collectively termed the organic part; those which remain, the inorganic. All the ingredients of the organic portion are found in the air, and probably it is from the air that plants derive them; but it is from the soil, and the soil alone, that they can obtain the inorganic materials; and hence an answer to the question, Does my soil contain all these matters that a particular crop requires? is of the greatest importance to every farmer. As yet, unfortunately, our acquaintance with the composition and qualities of the ashes of plants is extremely limited; so that the few remarks offered must be looked on, not as the whole, but merely a small portion of the truth.

The quantity of inorganic matter we know varies with the plant, and also the part of the plant subject to examination. One thousand pounds of wheat yield two pounds of ash. The same quantity of wheat straw about fifty pounds. The proportions in one or two others are given in this table:—

1000 lb. turnips yield of ash	8 lb.
"    "    "    "    "    "    "	4 lb.
"    "    "    "    "    "    "	2 lb.

So that the land may contain enough to supply the moderate requirements of trees, but not sufficient to satisfy the demand of grain crops. The quantity varies with the variety of the plant, and also with the soil on which it is grown, the proportion in the same variety varying from 6 to 10 per cent, according to the soil. So that a plant may grow with a small proportion of inorganic matter, but to produce perfect and healthy individuals, the larger portion is requisite. Not only, however, must these substances be present in the soil, and they must exist in considerable abundance, and in a much greater portion than the plant absolutely requires; for its roots, even if they penetrate to a considerable distance; can absorb by their extremities alone; and these can come in contact with only a very small proportion of the soil. The more abundantly the plant is supplied with food, the more rapid and more perfect will be its development.

Hitherto quantity has been alone alluded to, but the differences in it are not greater than what occur in quality. Wheat contains much more potash than oats, while oats on the other hand, contain a much greater portion of silica, so that the one will exhaust the soil of the ingredient which it possesses in a large quantity, much more rapidly than the other, and land, which from its deficiency of potash, will not bear wheat with advantage, may, if it contain silica, large crops of oats; and further, alternate crops will not exhaust the land so rapidly, as continuing year after year, to cultivate the same species.

As plants can only have their food in a liquid state, the land must not only contain the ingredients they require, but there must also exist in it agents which have power of dissolving them; for it is quite possible to suppose a piece of ground contain all the necessary ingredients, being barren, if they should be in a solid state, so that we must not rest satisfied with merely ascertaining that the required substances be present, but we must also ascertain the form in which they exist, and whether they can be rendered easily soluble in water.

One object of the application of manures is, to restore to the land what crops has taken away. If all the crop were consumed on the farm, and the refuse, as well as the bones and carcasses of the different animals fed on it, were returned regularly to the soil, then its present fertility would be kept up. And as we have seen, that the greatest portion of those substances are in the straw, if it be applied to the land, the largest portion of what the plant took away will be restored; but if no such return be made, it is clear, that, in time, the land will be exhausted and unable to bear a similar crop. In many places in the United States we have examples of the deterioration of land caused in this manner. Large tracts in Virginia, after such treatment, have been given up to hopeless barrenness; and if farther proof of the correctness of these statements be required, we shall find it abundantly in Cheshire. The old pastures, which have been drained of their phosphates, by the cheese prepared from the milk of the cows fed on them, and which, in many instances, were very much deteriorated, have been completely renewed by the restoration of the phosphates in the application of bone dust.

I have made the foregoing statement to shew that an attentive examination of the composition of the ashes of plants with that of the soil on which they have been grown, is a subject which will yield information of the highest value; indeed, I believe, its careful study will lead to greater improvements than any other question at present agitated, and will afford data from which general laws of the greatest importance will be deduced, and tend to place agriculture among the certain, instead of, as it now among the uncertain sciences. Three separate objects of examination have been indicated.

1 The examination of the ashes of plants.

2 Are these ingredients present in the particles of the soil.

3 If present, whether they be soluble, or agents required to render them so?

The determination of the two latter questions will point out whether a direct or indirect fertilizer be required; direct by supplying the deficient ingredients; indirect, rendering soluble the matters already there, but not in their present state fitted for the nourishment of the crop.

The difficulty of performing the analysis required, ought, at least in Scotland, not to be pleaded, as an excuse for neglecting this most important subject; for if the farmer be unable to do it himself, he can get it done at a very low rate, by the officers of that most valuable institution, the Agricultural Chemical Association.

### THE COLLEGES WE NEED—EDUCATION OF FARMERS' SONS.

It is quite certain that the course of education pursued at most colleges and universities, is quite unsuited to qualify men for common business and pursuits of life. Indeed it would seem, in many cases, to operate as a positive disqualification; and men who may have distinguished themselves at our universities for their classical and scholastic attainments, are often thrown upon society as helpless and as incompetent to provide for themselves, or to serve the community as children. We have small encouragement at present, I confess to look for any thing better. The system of education at our colleges and universities, has undergone little substantial alteration for a century; and what is called classical learning, and the subtleties and puerilities of scholastic divinity, occupy as much attention as formerly, and hold a place in these ancient seats of learning so high in the estimation of those to whom the management of this place is intrusted, that there is little hope of dislodging them. I am no enemy to classical acquirements, as a matter of elegant ornament and taste, as a source of delightful recreation, and as an essential element in a complete education. But to give them a preference in any way of learning more useful, substantial, and practical, is not to estimate according to their real importance. The time and expense devoted to them, might be given to studies infinitely more valuable.

A college, therefore, of the practical arts, and of those sciences which directly bear upon practice, must be greatly desired by that portion of the community whose education must be to them a means of subsistence, and who have little time to cultivate the arts but with a view to apply them at once to the purposes of practical life.

It must be admitted likewise, that many of these arts and sciences are, properly speaking, the creations of modern times, and could not be expected to find their place in schemes of education formed in a remote period. Chemistry, mineralogy, geology, and electricity, are all of modern date. There are these living, who may be said to have assisted at their birth, and have rocked the cradle of their infancy. All these are intimately connected with the practical arts, and especially with the advancement of the great art of agriculture, and we may confidently look for the most important benefits to agriculture from the study and application of these sciences. Botany, likewise, and the nature, habits, and uses of plants, comparative anatomy and physiology, the study of which may prove so useful in the improvements and breed of domestic animals, and in the treatment of the diseases and injuries to which they are liable; the art of measuring superficies and solids, an art so constantly in demand in practical agriculture, mechanics, and the construction of farming implements and buildings, hydraulics, a science so important in draining, irrigation and the general management of water, and the uses of steam, that wonderful agent which seems destined to exert a more powerful influence over the affairs and common business

of the world, than any or than all other agents besides; the principles of engineering, in the construction of roads and embankments;—all these are matters to be learned and studied, as furnishing direct uses and aid in the practices of agriculture, and bearing immediately upon its advancement. These considerations demonstrate the importance of an institution, where such branches may be taught under the advantages of competent teachers, and means and apparatus adapted to their illusion.

## Provincial Legislature OF NEW-BRUNSWICK.

EXTRACTS FROM THE JOURNALS

HOUSE OF ASSEMBLY, February 1.

Read a second time the following bills, viz:—  
—a bill to extend the provisions of an act, entitled 'An act to repeal the laws now in force for appointing Firewards and the better extinguishing of fires, so far as the same relate to the Towns of Newcastle and Chatham, in the county of Northumberland, and to make regulations more suitable for the said Towns, and for other purposes therein mentioned, to the Town of Douglastown, in the said county;—  
—a bill to incorporate the Miramichi Mechanics' Institute.

Mr. Carman moved for leave to bring in a bill to extend the provisions of an act entitled 'An act to provide for the repair of the streets and highways in part of the parish of Woodstock, to the town of Chatham in the County of Northumberland. Read a first time.

On motion of Mr. Partelow, Whereas an act passed the Imperial Parliament during the last session, authorizing the several colonial Legislatures, if it should be deemed expedient, to repeal the acts now and then in force, imposing discriminating duties on articles of foreign produce and manufacture imported into the several colonies, as are therein particularized, subject however to the ultimate approval of Her Majesty's Government; therefore Resolved, that the Committee of trade be instructed to take the said act into their consideration, and to report thereon to this house by bill or otherwise.

1st. Resolved, As the opinion of this committee, that such part of His Excellency's speech as relates to the parish schools, should be referred to the House by the committee on education appointed on the 28th day of January last.

2. Resolved, As the opinion of this committee, that select committees should be appointed, respectively, to take into consideration and report to the house by bill or otherwise, upon such parts of His Excellency's speech as relate to prisons; the laws relating to the settlement and relief of the poor, and the act relating to Immigrants.

3d. Resolved, As the opinion of this committee, that a select committee should be appointed by the house, to consider and report by bill or otherwise, on that part of His Excellency's speech, relating to the lands reserved for the Indian population.

4th. Resolved, As the opinion of this committee, that the paragraph in His Excellency's speech, relating to the advance from the public funds, towards the relief of the inhabitants of St John's, Newfoundland, suffering from the destruction of that city by fire, should be referred by the house to the committee of supply.

Ordered, That the report be accepted, and the resolutions reported from the committee adopted by the House.

On motion of Mr. Partelow, Resolved, That the subject matter of the first resolution now reported from the committee of the whole House when in consideration of His Excellency's speech, and which relates to the parish schools, be referred to the committee on education to report thereon.

On like motion of Mr. Partelow, Resolved, That a select committee be appointed to consider and report upon the subject matters of the second resolution, now reported from the committee of the whole house when in consideration of His Excellency's speech, and which severally relate to prisons; settlement and relief of the poor, and the Act relating to immigrants, and report thereon by bill or otherwise. Ordered, That Mr. Street, Mr. End, Mr. Fisher, M. Woodward, and Mr. Boyd, be a committee to take under consideration the several subjects of this resolution.

On like motion of Mr. Partelow, Resolved, That a select committee be appointed to take into consideration the subject of the third resolution, now reported from the committee of the whole house when in consideration of His Excellency's speech, and which relates to the Indian reserves. Ordered, That Mr. L. A. Wilnot, Mr. Carman, Mr. Barberie, Mr. Tib-