

THE GLEANER

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

New Series, Vol. III

Nec ananarum sane, textus, idco melior, quia ez se fila gignunt, nec noster vilior quia ex alienis libamus ut apes.

No. 22.

Miramichi, Tuesday Afternoon, March 11, 1845

Agricultural Journal.

From the Albany Cultivator.

BALANCE OF ORGANIC NATURE.

The Chemical and Physiological Balance of Organic Nature—An Essay, by M. J. Dumas and J. B. Boussingault, members of the Institute of France. Edited by D. P. Gardner, M. D., Lecturer on Agricultural Chemistry, New-York.

This excellent little work which opens new fountains of knowledge, practicable as well as theoretical, appears to have been delivered as a lecture by M. Dumas, on concluding his course at the Ecole de Medecine in Paris. It contains the opinions and result of the joint labors of Dumas and Boussingault in chemical and physiological investigations. What is meant by "The balance of organic nature," we learn from page 81, where the author makes the following summary of his doctrines:

"If we recapitulate we shall see that the primitive atmosphere of our globe has formed itself into three great parts or masses; one constituting the atmospheric air of this present time; a second, represented by plants; a third by animals.

Between these three masses continual changes are effected; matter descends from the air into vegetables, penetrates in this way into animals, and returns to the air in proportion as they consume or apply it to their purposes.

Green vegetables constitute the grand laboratory of organic chemistry. They are the agents which, with carbon, hydrogen, azote, water and oxide of ammonia, slowly form the most complex organic substances.

Under the form of heat, or of chemical rays, they receive from the sun the force which enables them to accomplish this great work.

Animals assimilate or absorb the organic substances which plants have formed. They alter them by degrees; they destroy or decompose them. New organic substances may arise in their tissues, in their vessels; but these are always substances of greater simplicity, more akin to the elementary state than those they have received.

They decompose them, by degrees, the organic matters erected by plants. They bring them back by degrees towards the state of carbonic acid, water, azote and ammonia, a state which admits of their ready restoration to the air.

In burning or destroying these organic substances, animals always produce caloric (heat) which radiating from their bodies into space, goes to supply that which vegetables had absorbed and fixed.

Thus all that the atmosphere yields to plants, plants yield to animals, animals restore to the air. Eternal round, in which death is quickened, and life appears, but in which matter merely changes its place and its form.

The crude and formless mass of the air, gradually organized in vegetables, passes without change, into animals, and becomes the instrument of sensation and thought; then vanquished by this effort, and as it were broken, it returns as crude matter to the source from whence it had come."

This carries us back to the Creation, to the beginning, when "God said let there be light and there was light." It accounts philosophically for the succession of events as related by Moses. With light came heat, and heat developed vegetation, and vegetation prepared the way for the subsistence, and the after creation of animals.

But our business is not with speculation, but with practical affairs. The food of plants, and the best method of giving them a vigorous growth, are the subjects which are most interesting and most important to farmers.

"Every plant (says Dumas) fixes nitrogen during its life, whether it obtains this element from the atmosphere, or from manures added to the soil."

And again, "One of the first problems in agriculture, is to procure supplies of nitrogen at

a cheap rate. With regard to carbon, there is no cause for solicitude; nature has provided that in ample abundance; the air, and every shower of rain are charged with it. But it is otherwise with reference to nitrogen; the azote of the air may be unassimilable, and the ammoniacal and nitrogenous salts which rain-water contains may not be in sufficient quantity. It is indispensable therefore, to surround the roots of almost every plant whose culture is of importance to mankind, with manures rich in azote, as enduring sources of ammonia or of nitric acid, which the plants appropriate in proportion as they are produced. To do this, as is well known to all, is one of the grand causes of expense in agriculture; for we are generally dependent upon, and have only access to, the manure we can severally produce. But chemistry is so far advanced in this direction, that the problem requiring the production of a purely nitrogenous manure, cannot long remain unresolved."

It is elsewhere shown by our author that plants also fix carbon, hydrogen, oxygen, and certain earthy particles or ashes, (p. 37) as well as nitrogen, as a constituent element in their composition. It is therefore doubtful whether a "purely nitrogenous manure" be necessary. All compost heaps composed of animal and vegetable substances, furnish nitrogen, and other ingredients capable of promoting vegetation. It would be better therefore to give to our cultivated crops a composition containing various materials congenial to plants, than to offer them one only. How many have been disappointed in the use of lime alone, or salt, saltpetre, and other single fertilizers? These and other saline and alkaline ingredients may be added to compost heaps with advantage, and increase their activity as fertilizing agents. We are sometimes apt to be carried away by speculative views in farming as well as in other occupations, and to be captivated by something new, while we neglect the more common and useful things. Human excretions form a powerfully azotized or nitrogenous manure, and they compose the fertilizing ingredients in Poudrette, which has been highly extolled as a great fertilizer. This is doubtless so when it is not too much diluted or adulterated. But those who have embarked in its production, have done so for the purpose of making money by the sale of it. The consequence is that it is losing its character, because it is too much diluted with peat, or saw-dust, or coal ashes, rendering it feeble or comparatively inert. The excretions of birds from the coasts of Peru and Africa, are now imported by the name of Guano; and those interested in its sale give glowing accounts of its fertilizing qualities. Some are captivated by its recommendations and novelty, and are buying a dear article, (which is not universally applicable like barn-yard manure,) and which may be cheaply imitated by chemical combinations.

Now I insist upon it, that farmers in this and the adjoining States where manure must be used, should look to, and make the most of, their domestic supplies before they purchase factitious or imported manures. If a farmer raises poutry, his hen roost will furnish materials similar to guano. He may have the temple of Cloacina emptied and its contents made into poudrette, as I know was practiced by a neighbouring farmer. In 1843 he had the contents of his sink mixed with sand and chip manure, together with a large cask of plaster of Paris, and a quantity of wood ashes which he had saved. These ingredients when mixed together, and dry enough to shovel over, made 20 or more ox-cart loads of good manure. Again in the spring of 1844, the excretions from the same sink were mixed with sand, some ox manure, chaff, a cask of plaster, and some wood ashes as before, making 24 loads of good compost. In 1843 the compost was employed to manure potatoes and turnips, and in 1844, potatoes alone, causing a vigorous growth in both instances."

We cannot raise hogs with advantage in this part of the country without keep-

ing them shut up in pens all the time, and well supplied with straw or seaweed, and soil or manure, and then the manure made is part of the profit. Here swine are fed both with animal and vegetable substances, and their excretions are rich in nitrogen or azotized materials, or as Dr. Mitchell would have said, replete with "Septon." Hence it is that bog manure is more powerful than the excretions of horses or cattle. But when we mix all these together in the barn-yard compost, we have wherewith to supply all the wants of cultivated plants with carbon, hydrogen, oxygen, azote, &c. Let farmers therefore look around their own premises, collect, mix and manufacture for themselves as much as they can before they buy any manure.

The lecture or essay of M. Dumas occupies but 64 pages of the work under consideration. The remainder is made up of documents illustrating in detail the subjects touched upon in the essay. There is also an appendix by Dr. Gardner, to whom we are indebted for bringing before the American public the lecture of M. Dumas as translated from the French. We had marked some passages to guide the reader, but must refer him to the work itself as worthy of attentive perusal, hoping it may give him as much satisfaction as it did

A PRACTICAL FARMER,
Staten Island, November 23, 1844.

We do not give this as a correct recipe to make poudrette, nor is so invariable one necessary, because it may be made in different ways. Two materials are necessary in its composition; one to make bulk, and one to render it inodorous. The bulky articles may be soil, or muck, or peat, tanner's bark, saw-dust, spent wood ashes, coal ashes and other things. To render night soil inodorous, diluted sulphuric acid may be used, or ground plaster of Paris, wood ashes, fine charcoal and sulphate of iron. My neighbor, among other things used sand to make bulk, because he had it in abundance, and his soil was a stiff clay.

CARE OF ANIMALS IN WINTER.

In the cold climate of the northern section of our country, buildings, of some kind, are required for sheltering all domestic animals, and in general we think all should be led under cover, or in yards attached to barns and sheds. There is much less waste in this way, and the animals are much more quiet and comfortable than when the food is thrown out in the dirt, and they are forced to eat under the exposure of wind and storm. In dry, cold weather, when the air is still, sheep may be sometimes foddered on clean, hard snow to good advantage. They will eat fodder here which they would refuse any where else. But it is only in dry weather that they can be fed in this way—as soon as the snow softens, or the weather becomes moist they will not eat their fodder clean, out of doors, and they must be fed from racks or mangers in the house. Sheep do not like wet—they always prefer to keep both their food and their bodies dry.

Large flocks of sheep should be divided, putting the bucks and weathers together, the ewes in another. Subdivisions of these may be necessary, for too many must not be kept together. Some very good sheep-farmers think not more than a hundred should be allowed to run together—others allow more—but much depends on the room given them, the facilities for feeding, sheltering, &c. A hospital should be provided—self-interest, as well as humanity, demand it—and attention to the sick and feeble will be well repaid. A little nursing at the proper time often has such a magical effect on the invalid, that he comes out in the spring as brisk and hale as the best of the flock—a much more gratifying sight, truly, than to see his carcass hanging on a tree for the crows to pick at.

If it is designed to raise early lambs for market the ewes should be at once provided with warm, dry shelter, and fed with a little grain, and some roots, such as potatoes, turnips, or beets. This will ensure a strong, healthy lamb, with plenty of milk to feed him.

Cold weather gives cattle and other stock sharp appetites, and this is the best time in the winter to feed out poor fod-

der. Give it to the stock in small quantities at a time, replenishing the mangers as often as they are cleaned, till the animals get their fill. It is not good policy to make *milch cows* eat too much poor fodder—it had better be fed mostly to the young cattle—such as steers and two-year-old heifers.

Considerable advantage is sometimes derived from cutting fodder with a machine. Clover hay and straw, cut fine and mixed together, may be fed in this way without waste. Corn-fodder, if the stalks are small and well cured, will all be eaten if it is cut pretty fine. But it is not so with large stalks, which are very coarse and fibrous, and the sap of which becomes *sour* before they can be cured—cattle will not eat such much sooner than they would eat their hooft. It is of but little use to cut stuff for cattle to eat which is absolutely *uneatable*. It is true that animals will sometimes reject long fodder which is really nutritious, and which would be eaten if passed through a cutter; but the idea should never be taken from this, that cutting substances which are little else than woody fibre, will convert them into proper food for animals.

In the western section of the country, where large herds are kept, sheltering and feeding under cover is attended with more inconvenience; but we are satisfied that the extension of the practice even there, would be followed by advantages more than counterbalancing the trouble. There is a difference in the management of farmers in that region, the contrast between good and bad farming being as strikingly shown there as any where else—but it is often the case that the stock is permitted to range at will over the whole farm. The loss which is sustained from the waste of food, the injury done to the land by the treading of the cattle when it is wet and soft, and as a matter of course, the great waste of flesh in the animals, is incalculable. The practice of feeding cattle almost entirely on corn-fodder, which in that country is very long and coarse, is quite an obstacle to barn or yard feeding; but where this cannot be adopted, the stock blue-grass sod and byall means sheltered from the bleak and cutting winds by a forest or belt of trees.

From the same.

PREPARATION AND USE OF CHARCOAL.

Age and business both thickening upon me, I had ceased to write on agricultural subjects; but as I am called on, I come forth, willingly, cheerfully. But first, one word to my son Levi, and others of my sons. Whenever you may write me again, be assured I shall answer, but remember what I told you long ago, "it is hard work for an old man to gather fruit from a tree with so much brush about it."

In the winter and spring of 1842, I made and applied several thousand bushels of coal, mostly combined with the covering of earth and ashes of pits; not doubting that coal, lying on or about the surface of the earth, absorbs ammonia in dry weather, and gives it to the earth in wet weather. I would not have it finer than the ends of my fingers, and unaroidably down to dust; for it is evident that in proportion to the pulverization, so are the pores destroyed. Towards the close of my operations, my preparations of the coal was to burn two or three pits on the same ground, mixing and casting back the same earth and coal for covering; by which, and a little extra labor with a shovel or hoe, the coal was pulverized to my liking. As to the effect of the pure coal which I pulverized and cast into my cattle yard, I cannot speak, as no test was attempted, but never expect to do the like again; for why should I use coal for securing my already acquired capital, when straw or leaves would answer the same purpose. Better use the coal broadcast to extract and secure capital from the universal fund. Remember that in my operations, the coal, the covering earth, (which is always filled with valuable salts,) and the ashes, were mixed together. This compound was carted out & cast on land in wheat, corn land, oat land, meadow and pasture grounds. The effect on wheat and corn, apparent and