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MANURES.

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MANURES CONSISTING OF SALTS.

In using the term salts here, to designate a class of manures, I wish to distinguish between these and mineral manures, as they are usually termed.—These manures are similar in kind to the salts whose action in cow dung we have already considered. They are truly mineral salts, derived from the mineral kingdom, entering into and forming a part of plants, and from this source introduced into the dung of animals. Their action, whatever be their name, has been explained. But the salts composing the second class of manures, now under consideration, are not of mineral origin.—They are derived from the animal kingdom. The source from which they are formed is the living process of the animal body. They are animal salts. Here, then, let us divide the second class of manures into animal salts, which are truly manures, both their base and then acid acting as nourishers of plants, and into mineral salts. Here again reader, you will find that the few facts, which we have pointed out, relating to the food and nourishment of animals, will help us on our way, in tracing the source of these animal salts. It has been already said, that the food of animals is divided into two classes; that which does and that which does not contain nitrogen. All domestic animals eat these classes together. In a few words, let us trace their course after the animal has digested them. The one class goes to form fat, or to support the natural heat of the body, and passes off by the skin in sweat, or in moisture of the breath, and all its excess or undigested part goes off in dung. The excess of nitrogenous food, all that not required for reparing the daily waste of the body, or to increase its growth, also passes off in dung, as excrement. This is a small portion, and its effects on the strength of dung have been pointed out. But the wear and tear, as we may call it, of the flesh and blood, the parts which are daily and constantly thrown out of the body, as excretions, or old materials, enter the circulation, and pass out of the body in urine. This is the point to which I would call your attention. The undigested food, and the excrements not containing nitrogen, go off in dung. The food and the spent parts of the body, containing nitrogen, go off in urine. This last, too, is the course of most alkaline salts taken into the body. They pass off in urine. Here, then, we come to the subject quite prepared to understand it. The urine is a collection of salts, some are of mineral, others of animal origin. But that which gives the urine its peculiar and characteristic properties, is a substance formed from the nitrogenous food, and termed UREA. Now you need hardly trouble yourself to remember this new name; all I want you to understand about it is, that when urine is exposed to air it rots, and this peculiar substance is changed to ammonia. That is the point to be remembered. In considering urine, therefore, as a manure, it will not be necessary to point out further the mode of its action, than to refer that of every animal, to its salts and power of forming ammonia. The quality of the last will be in proportion to the quantity of urea. There are other salts of ammonia in urine, and also mineral salts. These affect but little the value of urine as a manure.

It is the urea, essence of urine, that substance which forms ammonia in rotting urine, which alone makes this liquid more valuable than dung. Hence, reader, if this is impressed on your mind, you will perceive that the chiefest things to be regarded in urine, are, first, the circumstances which affect the quality and quantity. Second, the best mode of promoting a change of urine to ammonia. Third, the time required for the process, and fourth, the best mode of preserving the ammonia, when formed. You will perceive, reader, that all along, I have endeavoured to point out the principles on which manures act. If you go by general principles, then for a plain practical farmer, like yourself, with only chemistry enough to understand a few of its terms, it must be quite a thankless service, to point out to you in detail, all the various things contained in urine. It would confuse you more than the names, ay, and hard ones too, which are given to the varieties of pears and apples. All you want to know is this, does urine contain, as solid dung does, water, mould, and salts?

It does. The mould is so small a part, it may be left out of view. The salts are like those in the solid dung, mineral salts, and then we have the peculiar principle urea, which, for all practical purposes may be called ammonia. We may then with this division present in a table the composition of the urine of various animals at one glance:

	Water.	Salts.	Ammon.
Cattle urine, per 100 lbs.	92.62	3.38	4.
Horse " " "	91.00	5.03	.70
sheep " " "	96.	1.20	2.80
Hog " " "	92.60	1.76	56.4
Human " " "	95.75	1.88	2.36

Now cast your eye carefully over this table, the figures at once tell you the value of these different liquids. The last column gives the true value. The other salts vary much in quantity, and this affects the quality. The actual amount of ammonia in human urine and cattle dung is about the same; yet in actual practice it is found the effects of urine are nearly double those of dung. Look now for the reason of this; in the first place, the principle which gives ammonia in urine runs at once by putrefaction into that state.—It gives nothing else; whereas in dung, the ammonia arises from a slower decay, and the principle which here affords ammonia may, and without doubt does, form other products. Hence we have a quick action with the liquid, a slower one with the solid. A second cause of the better effects of the liquid is, that it contains besides its ammonia, a far greater amount of salts, and these give a more permanent effect. The amount of salts in human, cow, and horse dung is about one pound in every hundred. While the urine of the same animals contains nearly six pounds in every hundred. A third cause of the greater fertilizing action, is found in the peculiar character of some of these salts, which are composed of soda, potash, lime, &c., united to an acid formed from urea, in the animal body. This acid is like the acid of saltpetre; it is a nourisher of plants, as much so as is carbonic acid.

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INTERESTING DISCOVERY IN WHEAT CULTURE.—In the Schnellpost of Tuesday we find an account of a method of compelling the wheat plant to become perennial, like grass, and to perfect its grain annually without annual sowing of seed, which has been successfully practised at Constance, in Germany. It was discovered by a steward of an estate named Kern. His method, after plowing and manuring the land and sowing it with summer or winter wheat, is to mow it in the spring before the ear makes its appearance. This process is repeated several times in the season, and the product is used as hay. The plant is then allowed to grow and be cut in the ordinary manner. The next year it ripens earlier and bears more abundantly than wheat treated in the ordinary manner. It is manured in the autumn like grass in the meadows, and in spring cleared from weeds. In this manner, from one field four successive harvests have been gathered.

EXTIRPATION OF DOCK.—The best way to kill docks is to pull them up, or cut with a tool made for that purpose. They should be cut at least two inches below the surface, in order to take off all eyes and prevent their sprouting.—[Albany Cultivator.

RECIPE.—Many of our farmers now keep bees, and as the comb, as well as the honey, is, from various reasons, a valuable article, and as the labour of separating them is often attended with considerable trouble, we append the following recipe:—

"Tie the comb in a linen or woolen bag; place it in a kettle filled with cold water, and suspend it over a slow fire. As the water becomes heated, the wax will melt, and rise to the surface—the extraneous matters, or impurities, remaining in the bag. This is a cheap and effectual method.—in fact, superior to any we have ever tried."

TO DESTROY MICE AND RATS.—These are troublesome varmints, and we have recently found the following prescription effective:—Take equal quantities of powdered oatmeal, and unslacked lime; mix them thoroughly without moistening, and put a small quantity in the holes and places infested by the animals. They will "leave."—[Maine Farmer.

TEST OF PURE TEA.—Make your tea as usual, then pour off the first, filling up with water, and instead of replenishing the teapot, for a second cup, turn out the leaves on a plate. If they are the real tea, they will retain their usual colour, but if they are sloe or ash, or any other such production, the false colouring matter will have been carried off in the water, and the leaves will remain quite black. In our present cheap tea days, it becomes necessary for our good housewives to look sharp into cause and effect. —[N. Y. Mechanic.

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IMPROVEMENTS IN AGRICULTURE.

The following glance at some of the improvements which have been made in agriculture within the last fifty years, is from the pen of Alexander Walsh, Esq.

THE PLOW.—In this implement the advance within the last thirty years has been astonishing. There is scarcely less difference between the neat cast iron plow of the present time and the clumsy wooden article used for the purpose at that period, than between that and the iron pointed crotchet stick of the ancients. In the case of working and the effects produced on the soil, every man competent to judge will admit that the difference effected by improvement in the last thirty years is equal to fifty per cent.

THRESHING MACHINE.—Experience shows that the farmer who gets out and sells his grain in autumn, admitting that the prices are the same, realizes at least ten per cent more than he who does not dispose of his crop till the following spring, But it may be safely asserted that, in grain growing districts, the whole force of the farm, if devoted to that object alone, would not be able to bring his grain into market in the fall if threshed by hand. Hence the threshing machine has come to aid, and does the work so much better and quicker than it can be done by hand, that the getting out of a thousand bushels of wheat is counted a small affair.

THE HORSE RAKE.—With this instrument, on land fitted as meadows always should be, one man and a horse will do the work of six men with hand rakes. The value of this labor saving machine will not be disputed by those who have tested its power when time presses, or storms lower over the hay field. It is not less valuable as a gleaner in the wheat and barley stubble, where no care can prevent a quantity of grain being left, surprising to one who has never gleaned with the horse rake.

AGRICULTURAL ASSOCIATIONS.—The splendid agricultural improvements now here and there exhibited, are the results of Agricultural Journals and Agricultural Associations, where enterprising individuals meet periodically, and, by exchanging their ideas, increase the general stock, in at least the compound ratio of their numbers; each one returns home with the knowledge possessed by the whole, and with a commensurate stock of new suggestions for future experiment and reflection. The spontaneous operations of the human mind in an unassisted state, require ages to arrive at results which the united efforts of numerous individuals, excited by emulation would produce in, perhaps, a few days. Most other employments lead to association, while the farmer remains in an isolated state, scarcely regarding the operations of his neighbour.

Agricultural Associations of this and other states have already effected wonders, and these wonders are now becoming the joint stock of the Agricultural Society of this State, which has been got up by the unremitting and persevering exertions of a few gentlemen, who have thereby conferred lasting benefits upon their countrymen.

INDIAN CORN—The benefits of skillful cultivation are shown in the improvement of the corn, as much perhaps as in any other way. A crop of seventy-five bushels per acre is now as common as fifty was a few years ago; and there can be little doubt that 100 bushels per acre are now oftener reached than were 70 at that period.

WEIGHT OF CATTLE.—The records of the Smithfield market, in London, proves that within one hundred years, the average weight of the cattle killed for that market has nearly doubled, rising from between four and five hundred to between seven and eight hundred, and the greater part of this increase has been in the last forty years. It is calculated that the cattle offered at the Brighton Market near Boston, average at least fifty per cent more than they did twenty years since This improvement we owe to the knowledge brought to bear on the breeding of cattle, and agriculture generally.

IMPROVED PIGS.—Here is an improvement which no one, however slightly acquainted with the animal, can deny. The dullest eye can distinguish the difference between the round, fat, beautiful, Berkshire, and the thin, lean, long-nosed, and long-legged, houndlike creature, which seems more fitted for the chase than the sty. The farmer feels the difference in his corn crib, and still more in his pocket. The difference in the cost of breeding and in the pork made, between