

agency of the seed sown, yet I am by no means of opinion that this is the only source of infection. I have kept ears of wheat that were converted and destroyed by the *Uredo* during more than twelve months in a situation where they experienced the vicissitudes of temperature during all the seasons, unprotected by more than the paper envelope in which they were suspended in an outhouse. Yet when the *Uredo* that had been thus exposed was mixed with healthy well washed seed-wheat this produced diseased plants in a triplicate proportion more numerous than that not so mixed. This experiment demonstrates that frost and drought, acting in concert with a damp atmosphere, do not destroy the vegetating power of the *Uredo's* seed. Such being the fact, why may not this seed remain in the soil ready to impart the plague? We know that, owing to its extreme lightness, the seed floats buoyantly in the air, and may be carried by winds to distant soils, which in the autumn of the same year, before any extremity of cold has been endured, will have to bear the wheat crop for the following harvest. The opinion that the soil is one source of infection, is sustained by the fact that the fields in the vicinity of the sea are rarely injured, and never extensively, by the ravages of the smut. Such soils are impregnated more than any other with common salt, and the effects of this saline compound upon the *Uredo* has been noticed already. These considerations suggested that applications to the soil as well as to the seed are necessary for the banishment of the disease.

I have frequently examined the roots of wheat plants affected by the smut but have never perceived that they had a diseased appearance: a fact which I find confirmed by the researches of Mr. Kirby. Although the root is not affected, yet I have invariably found the smutted plants of a form and habit much less robust than those uninfected. The average result of Mr. Bevan's experiments is, that smutted wheat produces straw in the proportion of only 30 to 36.75, when compared with wheat unattacked by the smut. This is not a result contrary to that which might be anticipated; for in plants, as well as animals, an organic affection so serious as this is usually accompanied by a general emaciation of the frame. So decidedly is this effect produced upon wheat, that a practised eye can at once detect by its appearance, before the diseased ear is protruded, a plant that is thus distempered. The stem and leaves look upright, thin, and stiff, wearing the aspect that is best described, to those who know the appearance, by the term "starving." I cannot conclude without remarking that these facts strengthen the analogy I am so fond of tracing between plants and animals. The atrophy exhibited by both, when under the influence of disease, is strikingly illustrative of their close relationship; and this is further carried on by their being equally liable to the ravages of parasites. The skin of every animal is liable to be infested by vermin, as its intestines and other viscera are by worms and various other creatures. So plants are not only subject to invagination, but, like animals, they are preyed upon by various genera of their own race. Their barks are assailed by numerous lichens and fungi, whilst internally they are a prey to the *Uredo* I have just described, and to several others of the fungus tribe. Animals have their larger parasites, as the tick, &c., and vegetables similarly bear the miseltoe, dodder, and others. This repeated urging that plants are closely allied to animals in every particular is not without its use. Every year's experience convinces me that it is not less beneficial to cultivate plants with the least possible injury to their various parts, than it is to treat our farming stock with gentleness and an attention to their comfort; and it is by demonstrating the analogy between the two great divisions of created beings, the reason of the cultivator is to be drawn to regulate his practice.

Finally, I will observe, that the farmer is much too prone to regard the diseases of his

crops as of trivial importance. In such cases as where the curl destroys the whole of his potatoes, or the mildew reduces the produce of each acre of wheat to a few bushels, he is miserably sensible of the injury he has sustained; but if, within the circle of corn-ears around him, as he surveys his crops, he only sees a sprinkling of those affected with the smut, he looks upon this as of insignificant consequence. Yet, in the experiments of Mr. Bevan, in the instances where only two smutted ears occurred in three sheaves, the weight of the straw was reduced nearly one-third, and that of the grain three-sevenths.—(Essay by G. W. Johnson, *Quart. Journ. Agr.* vol. ix. p. 45.)

GLANDERS.

The following remarks upon "Glanders" in Horses are by the author, *M. Lebeaud* from whom we have already quoted. We should always advise, in cases of serious disease, that the assistance of a good veterinary surgeon be procured as soon as possible. Sometimes, and in some places, this cannot be done. The owner of the animal must therefore "doctor" himself, and the more information he has obtained upon such subjects, the greater is his chance of success. In all cases, whether you seek professional aid or not, it would be of the greatest advantage to have some acquaintance with the nature of the disease and the appropriate remedy:—

A disease of the lining membrane of the nostrils, commonly reputed to be contagious, and which extends sometimes to the throat and lungs. The old farriers differed in their opinions as to the seat of this disease, but the true character of glanders is now well established. The causes of the disease are not even yet well understood, but whatever may be the origin of the distemper, the result is always an inflammation of the mucous membrane. Many other diseases are liable to be mistaken for this; but the true glanders is known by fixed and certain characteristics, by those who have seen it; a discharge of mucous from the nostrils—sometimes colourless, as the white of an egg—sometimes yellowish, and streaked with blood; it becomes, as the disease advances, purulent—then dark, corrupted, and fetid; it sometimes is checked for a day or two, and appears again. The glands of the lower jaw become inflamed and swelled; but the horse does not cough nor lose his appetite, nor give any other sign of disease. But if the complaint goes on, it attains a frightful intensity—the interior of the nostrils are covered with deep and malignant ulcers, the bones become carious, and the horse languishes in this condition a long time, and dies. The glanders has long been regarded as incurable, but the discoveries of modern veterinary medicine has put it in our power to do something to arrest the course of this formidable disease. When it is not of too long standing, the internal treatment prescribed in the farcy, may be adopted with advantage, and make use of the injections in the nostrils, recommended in the strangles. When the ulcers are well cleansed, lime-water, or some other astringent injection, should be substituted. It will be dangerous, however to suppress too suddenly, the discharge by means of astringents, especially when the ulcers are not very deep. In order to introduce the injections more easily into the frontal sinus, some good surgeons advise us to punch a hole in the bone, large enough to introduce a syringe. When the ulcers of the nostrils appear to be taking on a more healthy action, we should join to the employment of the astringent, resinous fumigation. For this purpose we should burn on a shovel of coals, a handful of the aromatic mixture, No. 36, and receive the vapour in an inverted funnel, the tube of which is inserted in the horse's nostril—this may be done twice a day. When the disease is of long standing, there is little hope of a cure. But if the horse is worth the trouble, and is not too nearly worn out, the following means may be tried.

After having prepared the horse by bleeding and other general treatment, he should take at night, the pill No. 9, and the next morning the pill No. 10. These medicines may be repeated as often as they may seem to be necessary, leaving each time, an interval of two or three days between each dose. If his strength fails under this mode of treatment, suspend it for some time, and in the interval, he should take an ounce of nitric acid in a quart of sweetened water, every other day until he has recovered his strength sufficiently to take the pills again. When it is thought that the pills Nos. 9, and 10, have sufficiently operated, we should continue the treatment by giving, at first every day and then every two days, the pill No. 35, and continue them till he is cured. If, in spite of all treatment, he gets no better, we must kill him, both to keep the disease from other animals, and to save needless expense. All precaution must be used to keep other horses from the infection, and the man who tends him must be careful of himself, for the disease may be taken by man as well as animals.

No. 36, Juniper berries, eight ounces; rosemary and sage, each four ounces; sugar, four ounces; myrrh, two ounces—mix.

No. 9, Calomel, a dram; red precipitate, half a dram; golden sulphuret of antimony, hard soap, ginger, gum-guic, each a quarter of an ounce—mix with molasses, and form a pill.

No. 10, Aloes, an ounce; resin of jalap, ginger, and hard soap, each two drams; oil of sassafras, a dram—mix with molasses, and form a pill.

No. 35, Turpentine, hard soap, nitre, sulphur, liver of antimony, and ginger, each four ounces. Reduce the ingredients to a fine powder and mix into a mass, with molasses, and divide into fourteen pills.

TO CORRESPONDENTS.

R. D. Your communication is well written and pertinent to the subject you have chosen; but we prefer leaving such information to be sought through other channels. The operations described are generally entrusted to those who follow the business, and must be presumed to know something about it; and though we admit it is a subject of importance to the farmer, and ought to be understood by him, yet as our paper is intended for the eye of females as well as others, we must display a little delicacy in the selection of subjects for consideration. Without the "rooster" fastidiousness of our Yankee neighbours, would our correspondent think it quite proper, and would he feel quite "at home" to sit down and read his communication to the family circle, embracing two or three young ladies of sense and ordinary refinement? This is our test; and, according to our notions of modesty, we shall always apply it.

B. H. Fronte, will please accept our thanks for his attention and promise. We send copies of the missing papers along with this number, addressed as he directs.

CANADA FARMER.

April 23, 1847.

MANURE—QUANTITY TO THE ACRE, &c.

At the very foundation of good husbandry lies the subject of manure. No farmer can prosper, or even "get along," as the phrase is, for any length of time without paying some attention to the making and saving of manure, as well as to the proper time and mode of applying it to his land. The whole subject has been well discussed in the various agricultural Journals in the United States and Great Britain, and by numerous agricultural writers, during the last four or five years; but it is far from being exhausted. Experiments of all kinds, and upon all kinds of soil, have been made to test the value of the different fertilizing substances, singly and combined in the shape of composts, and also to ascertain the quantity and mode of applying them which would ensure the greatest benefit to the farmer. Various theories have been promulgated, various opinions expressed, and numerous facts elicited and discoveries made, which have contributed in a wonderful degree to the advancement of agriculture, and the substantial interests of all who are engaged in it, or dependant upon it. Still, the very worst practices of the worst farmers, during the worst times, (in an agricultural sense)—entirely to the diffusion of so much light on the subject,

prevail extensively in Canada. You need not travel three miles on any of the public roads leading from Toronto, to see those methods adopted, by which it has been proved over and over again, experimentally, scientifically, and in every possible way, that one half of the manure, may, two-thirds of its fertilizing power is utterly lost—dissipated in the air. Now, this waste cannot be afforded; we must husband our resources, and give back to the soil those ingredients in the shape of manure, which we take from it by our crops, or we shall find to our cost, so soon as the decayed timber and leaves of the forest are exhausted, that we have neither the means of making the one, nor producing the other. We shall constantly keep our attention directed to this most important subject, the "economy of manures," and if those who are favorable to improvement will take the trouble to extend the circulation of our Journal, we feel sure we shall be able to do some good to the public and much to individuals. It is in questions of this kind that agricultural Journals are most useful—without them there is little hope of improvement. We quote the remarks below from Mr. Youatt, the writer of *British Husbandry*, and one of the best practical writers of the day. We were pained to hear a few weeks since of his melancholy death.

Dr. Coventry, for some time Professor of Agriculture in the University of Edinburgh, whose business and study it was to collect data and make deductions in this and other agricultural matters, was of opinion that from four to five tons of manure of the kind usually denominated spit, or tolerably rotted dung, are yearly required for every acre of land to keep up its fertility. This supply, he thinks, a well-managed farm will produce:—

"According to that calculation," says our author, "it must be observed, that the course of crops is supposed to consist—on light soils, of the alternate plan of corn & green crops, on clays which do not admit of that system, that the holding contain a proportionate quantity of grass land; and that the quantity of manure should be supplied not in small quantities annually, but in large ones, at intermediate distances of four, five, and six years. Light soils, in the common course of husbandry, rarely require the application of putrescent manure oftener than once in four years, and in all cases where clover is allowed to stand two seasons, it may be deferred without disadvantage for another year. Heavy soils may run six years without it, provided that the land be laid one year in fallow, and that there be sufficient meadow to be reckoned at least one crop in the course. It being, however, clearly understood, that, whether on light or heavy land, nothing but grain, seeds, and live stock is to be sold off the farm, or else replaced with an equal portion of purchased dung; that the whole of the green crops, the haulm of pulse, and the straw of corn, be used in the most economical manner; and that some of the live stock be either soiled or fattened upon oil cake; which plan, if carefully pursued on good soils, with capital sufficient to secure an abundant working and fattening stock of cattle, ought, under fair management, to furnish an adequate supply of dung for any of the usual courses of culture."

"Having thus submitted to our readers all that occurs to us of importance on the subject of farm-yard manure, we shall here recapitulate a summary of the chief points which we deem particularly worthy of their consideration:—

1. To bottom the farm-yard with furze, fern (in Yankee dialect brake) dry haulm, (stable, &c.) or any other loose refuse that takes the longest time to dissolve; and over that to bed it deep with straw.

2. To occasionally remove the cribs of store cattle to different parts of the straw yard, in order that their dung may be dropped, and their litter trodden, equally.

3. To spread the dung of other animals, when thrown into the yards, in equal layers over every part.

4. To remove the dung from the yard at least once, or oftener, during the winter, to the mizen.

5. To turn and mix all dung hills, until the woody or fibrous texture of the matter contained in them, and the roots and seeds of weeds, be completely decomposed, and until they emit a foul putrid smell; by which time they reach their greatest degree of strength, and arrive at the state of maturity.