

6. To keep the dung in an equal state of moisture, so as to prevent any portion of the heap from becoming fire-damaged. If the fermentation be too rapid, heavy watering will abate the heat; but it will afterwards revive with increased force, unless the heap be either trodden firmly down or covered with mould to exclude the air.

7. To ferment the dung, if to be laid upon arable land during the autumn, in a much less degree than that to be applied before a spring sowing.

8. To lay a larger quantity on cold and wet lands than on those of a lighter nature; because the former require to be corrected by the warmth of the dung, while, on dry, sandy, and gravelly soils, the application of too much dung is apt to burn up the plants. Still land will also be loosened by the undecayed fibres of long dung, which, although its putrefaction will thus be retarded, and its fertilizing power delayed, will yet ultimately afford nourishment.

9. To form composts with dung, or other animal and vegetable substances, and earth, for application to light soils.

10. To spread the manure upon the land, when carried to the field, with the least possible delay, and, if laid upon arable, to turn it immediately into the soil.

11. To preserve the drainage from stables and dung-hills in every possible way; and if not applied in a liquid state, to throw it again upon the mien.

12. To try experiments, during a series of years, upon the same soils and crops, with equal quantities of dung, laid on fresh, and afterwards rotted; in order to ascertain the results of their application to the land. The whole quantity to be first weighed or measured, and then divided.

"The fermentation of farm-yard manure is, in fact, a subject of far more importance than is generally imagined, for on a due estimation of its value mainly depends the individual success, as well as the national prosperity, of our agriculture. The experiments to which we point cannot, therefore, fail to come home to the interests of every man; they may be made without expense, and without any other trouble than the mere exercise of common observation and intelligence. Leaving, however, aside the discussion concerning the disputed worth of fresh or fermented—of long or short dung,—let the farmer sedulously bend his attention to the accumulation of the utmost quantity that it may be in his power to procure. The manner and the time of using it, in either state, must, however, be governed by circumstances which may not always be within his control; and every judicious husbandman will rather accommodate himself to the exigency of the case than adhere strictly to his own notions of what he conceives to be the best practice. In fine, whether favoring the one or the other side of the question, let him collect all he can; apply it carefully to his crops, and then, trusting to events,—*let the land and the muck settle it.*"

THE POTATOE.

Many persons are not aware that the ordinary method of propagating the potatoe is not the natural one. The potatoe when properly cultivated bears seed like other plants, and this seed, and not the roots, is the means which nature has provided for reproduction. And although there is a vegetative, or reproductive power in almost every part of the potatoe, so much so that it is called the vegetable Polypus, yet it has been found to degenerate when the natural process has for any length of time, been departed from. The better opinion now seems to be, that the disease of the last two or three years, so direful in its consequences, proceeds from a combination of causes, acting upon the plant while in a degenerate and enfeebled state, induced by the common and unnatural mode of propagation. Every other theory has failed to account for the disease in a satisfactory manner. A whole book has been written by an English Physician, Mr. Alfred Sme., to prove that the disease is caused by an insect of the aphid genus, which he calls the *castator*. But the fact of the presence of any such insect upon the plant during the first stages of decay, has been denied by many persons who have taken the greatest pains to examine the matter. We have not yet seen Mr. Smee's work, and are not therefore able to judge of the grounds upon which he bases his conclusions. But even this theory, as plausible as any, does not shut out the possibility of the disease being the result of a gradual deterioration of the

plant, which has predisposed it to the attack of insects and rendered it incapable of resisting their effect. It is well known to those who have investigated the subject, that plants are infested with insects peculiar to themselves. "Aphides or plant-lice," says the Editor of the Farmers Encyclopedia, "are found upon almost all parts of plants, and there is scarcely a plant which does not harbour one or two kinds peculiar to itself." It may be found that the aphid which Mr. Smee and some others have detected, is a new creation in the insect kingdom peculiar to the potatoe plant. We hope intelligent persons in different parts of the country will carefully examine the progress of the disease, should it make its appearance this summer, and especially as to whether it be caused by an insect or not. It will of course be necessary to provide a microscope to make a proper examination. Those "scientific" gentlemen who have taken their friends into the potatoe field and pointed out a few black flies on the stalk of the plant, and then learnedly jumped to the conclusion that the potatoe disease was caused by insects, must push their researches a little further before the public can have much confidence in their statements.

The result of the two last years experience would indicate the following as the best course to be adopted in planting. Choose light loamy soils, in a high rather than a low situation. If possible get a spot that will be rich enough for an ordinary crop without adding fresh manure. Plant early, and choose early varieties for seed. In a short excursion through a part of the township of Toronto, which we made the other day, we observed a number of potatoe fields in which only a few rows had been dug. In almost every case these fields were low, and composed of a deep, black mould, containing large quantities of undecayed vegetable matter. It has been found in other parts of this country, and in the United States, that upon this description of soil the crop has invariably failed. Those who have a piece of new land that has been well burned over, will do well to reserve it for the potatoe patch. We refer such to the remarks of our *Markham* correspondent in our last number.

It is an opinion entertained by many that the best and only means of avoiding the disease in future, is to return to the cultivation of new varieties from the seed. A Mr. Smith, of Buffalo, has been engaged in this business for five or six years, and states that his potatoes are free from decay and keep in the best possible order. We observe it was stated at a late meeting of the New York Farmers Club, that the Emperor of Russia had ordered large quantities of potatoe seed from the United States. One dealer had sent him 10 lbs. at \$20 per pound. Return to the seed, is the advice of many intelligent, practical men. We repeat the advice; wherever you discover the balls containing the seed, let them ripen, and carefully preserve them. In this way, new kinds will be produced in great numbers, and the renovation of the potatoe be speedily effected throughout the country. If the adoption of this plan will not accomplish the object, we fear we shall be compelled to dismiss the potatoe from its accustomed place on the table.

Since putting the above in the printer's hands, we have met with the following in an exchange paper. It is taken from a report of the proceedings of the New York Farmers Club, and is confirmatory of the views we have expressed. It does not appear to us that the mere "loss of vitality" from the unnatural mode of propagation is sufficient to account for the suddenness and universality of the disease. Although it is stated to have been making its appearance in Ireland and some other places gradually for some years, yet in this country it came upon us in one season, and thus suggested the existence of an atmospherical cause. If it were owing solely to the loss of vitality, we should expect to find new varieties nearly if not quite free from disease. This may be the fact, but we have seen the contrary frequently stated. The

whole subject requires more thorough, extended and scientific observation, and we hope a large number of our readers will this season give their attention to the matter and communicate to us the results.

Mr. Hyde read an essay on the disease of the potatoe. He attributed it to the loss of vitality in the plant in consequence of the continued planting from the tubers and not the seed. This was the opinion of the savans of Europe, and the Emperor of Russia had sent to this country for seeds. This view of the cause of the disease was confirmed by the facts of natural history. 1st. Most plants can be perpetuated only from the seeds and not from cuttings. 2nd. The progeny inherits all the essential and most of the incidental properties of the parent. 3rd. The tendency of plants is either to improvement or to deterioration. 4th. Great changes in plants require time and many reproductions. 5th. They are effected by soil and climate. 6th. Plants which have lost their vitality are preyed upon by parasites which were not born on the plant. 7th. Production of blossoms without seed was an evidence of the loss of vitality.

These admitted facts in natural history would explain all the appearances in diseased potatoe crops. Potatoes will blossom, but seldom go to seed, and have been preyed on by parasites. The varieties of climate, soil and condition of the tubers, would explain the inequality of the crops. He considered it as well established, that a loss of vitality had ensued from the continued planting of the tubers and that the crop was to be restored by planting the seed. Still, good seed was necessary. If the parent was diseased, the progeny would be also. The practice of planting from sound seed had been tried by Mr. Smith, near Buffalo, with great success. These views of Mr. Hyde were concurred in by several members, who spoke of them as well established and generally admitted.

It would seem from the following statement, in reference to an experiment in the lower part of this Province, as well as from similar ones in the United States, that we may expect a return of the potatoe disease this summer; more general and more virulent, probably, than the last:—

Sherbrooke, April 8th.

POTATOE DISEASE.—We have been shown by Mr. A. Thompson, of this town, a stalk of a potatoe plant grown by him, in his house the present winter—which has, to all appearance, been struck with the potatoe disease. The plant has been growing vigorously till within eight or ten days, when it was struck with the disease. The leaves are spotted with a dark yellow color, and present the same shaly appearance, as when attacked in the summer season, in the open field. Whether this is an indication that the disease will prevail the coming season, we leave others to conjecture. The prevailing opinion has been, that the disease was passing away, in this part of the country.

DISEASES OF SHEEP.

We take the following from one of the most respectable American journals devoted to agriculture. The information was furnished, the editor states, by an experienced friend, practically engaged in the rearing of sheep. We must remind our readers, as we know much misconception prevails upon the subject of editorial responsibility, that they must not suppose that everything which appears in our journal is tried, understood, and approved by us. It never is, and never can be so. We must take things as we find them; nothing is perfect and infallible. All we can do is to use the best means of making the nearest approaches to perfection. It is in this that we may display our judgment and skill. In taking statements like the following from other sources, we exercise our best discretion upon the apparent reasonableness of the suggestions, relying upon what we may know of the respectability and discrimination of those from whom we borrow. What is intended to be given upon our own authority will be so stated, and for that we have no objections to be held strictly responsible.

DISEASES OF SHEEP.

CURE FOR HOVEN.—Take 1 lb. of lard, 1 pint of milk, boil both down to a pint, mixing them well together. Give half of this immediately at blood heat, and the remainder soon after.

Another. Give 1 gill of urine with as much salt as will dissolve.

HOVEN arises from eating an excess of wet clover. This should be avoided by keeping the animals from clover fields which are drenched with rain or heavy dews, especially when particularly hungry.

CURE FOR SCAB.—To 1 lb. tobacco add 12 qts. ley from wood-ashes of suitable strength for washing, and 4 qts. urine. To this mixture add a second of 1 gill high wines, 1 oz. camphor, 1 oz. Spanish brown, and 1 gill spirits of turpentine.

The application to be made to the sore, and it has never been known to fail.

CURE FOR FOOT ROT.—Pare the foot well and scrape it thoroughly; then add to a wineglass full of spirits of antimony, a piece of blue vitriol, the size of a walnut, dissolved in a little urine; rub this well on with a stick. If a sheep is very bad, and foot festering or gangrenous, take the yolk of two eggs, mix with one or two ozs. gum turpentine, and stir them till they make a salve. Put on the salve after you have applied the first prescription, and tie it on with a rag or piece of leather.

CURE FOR WITHERS COMING DOWNS.—Wash them with milk and water before returning them; or boil 2 qts milk with a good deal of lard, and wash them often while putting up.

TO MAKE A SHEEP OWN A LAMB.—Milk all over the lamb and under his tail, and rub it out well, then tie up the ewe head and body.

Another. Rub the liver, and light, and contents of the stomach of the dead lamb over the new lamb, and put the skin of the dead lamb to the adopted one.

CURE FOR STRETCHES.—Sheep sometimes stretch their noses on the ground and around by their side as if in severe pain. This is frequently occasioned by an involution of a part of the intestine within another, called, when occurring in the human subject, *intussusceptio*. Immediate relief is afforded, when the last is the cause, by lifting up the animal by the hind legs, and shaking them a few times, when the pain disappears.

BENEFITS OF SALT AS MANURE.

The following, in addition to its use, as recently ascertained, in preventing the disease in the potatoe, is a summary of the benefits to be derived from salt, applied to the soil:—

It attracts the humid vapors and repels frost, and thus assists in keeping the land moist in dry weather, and warm in cold. It keeps everything in the soil in a soft and soluble state, and assists to digest and prepare the food for vegetable nutrition. It destroys many kinds of vermin and weeds, and usually increases the amount of the crop from one fourth to one third; strengthens the growth of everything to which it is applied, and brings all crops earlier to harvest. It generally adds from 5 to 7 bushels per acre to the yield of wheat used in the most moderate quantity, and in all kinds of grain makes more ear and less straw. Mr. George Sinclair obtained at Woburn, on plots of 36 square feet, at the rate of 70 to 95 bushels of wheat per acre, by the use of salt mixed with other manures. It is found equally beneficial to pasture as well as root crops, sweetening all vegetation, and making it more wholesome for man and beast. It is a great safeguard against blast, mildew, rust, and indeed all the diseases of grain and vegetables.

Salt is inoperative applied near the seashore, where salt water or spray is already in excess on the land; but everywhere else it is beneficial. It may be used at the rate of 5 to 40 bushels per acre, though 10 to 20 bushels is better. It can be sown broadcast on the land, or be incorporated in the manure or compost heap. Mr. Prideaux informs us that mixed with lime and its compounds it undergoes decomposition, producing soda on its combination with carbonic acid, or with humus; all more powerful digesters and feeders than the salt itself; and the muriate of lime, which has the strongest attraction for moisture of almost anything known. Salt and lime work vegetable matters to decay quicker than salt alone. With gypsum it will supply soda and sulphuric acid cheaper than any other material, besides the muriate of lime, so valuable for its moistening quality.

PARSNIPS.—Parsnips are preferred by hogs to all other roots, and make excellent pork. By them they can be fattened in six weeks. Too much cannot be said in praise of beef and pork fattened on parsnips. A porker twenty-two months old, weighing nett seven hundred and fifty pounds, never ate anything but raw parsnips and sour milk; and finer meat never was seen. In the use of parsnips they should never be washed, but be given as they are taken from the ground. Used in this way they are found not to surfeit the hogs and cattle, and to fatten them much better and quicker. If washed they are apt to sature, and as farmers say, will not thoroughly fatten them. They are good to fatten cattle, and if given freely to cows, will much improve the quality and quantity of their milk.—[Prairie Farmer.]

RADISHES.—If you sow this vegetable in land which has been long cultivated, cover carefully with two or three inches of fine gravel. Salt is a salutary application, and a good specific for the worm evil.

POTATOE ROT PREVENTED.—Mr. Craft of Woburn, Penn., has issued a treatise on potatoe disease. He contends that an excess of carbonic acid causes the disease, and that alkalies, lime and potash, are the proper remedies for it.