

and the aggregate value of this yearly product exceeds one hundred and eighty million dollars.

"There is but one agricultural product of equal importance—that of Indian corn. To the aggregate thus stated must be added the value of the cattle themselves, which, estimated at \$20 per head, amounts to nearly \$370,000,000. Upon the basis of the census of 1850, this interest involved a value of products and property equal to \$400,000,000. The average increase in ten years may be safely estimated at 20 per centum, and this would make the same values equal for the present year to \$540,000,000.

"But these figures very imperfectly represent the interest of the American people in this gigantic industrial product. How far it enters into the employment of the great majority of persons, how many millions are dependent upon it for the luxuries and necessities of life, to what extent it contributes indirectly to public health and enjoyment, and how large a part it forms of the sound and valuable business of the country, are considerations which naturally occur to the mind of every intelligent person.

"If we could confine the ravages of this fatal distemper so unfortunately deposited upon our shores, to our own State, it would still be of sufficient importance to demand the earnest attention of the people. But unless extirpated on the instant when it appears, it cannot be so confined. If it spread over our own territory, it must ravage other States, and it becomes a duty of the highest character, one which we owe alike to ourselves and to the people of the whole country, to make every available and possible effort to restrain its ravages, if extirpation is impossible."

The governor then proceeds to recommend various amendments to the Act of April 4th, and suggests the propriety of a thoroughly scientific investigation of the disease.

The subject has also engaged the attention of the United States Congress, and a committee has been appointed to procure information in relation to it.

Dr Dadd, Veterinary Surgeon, and one of the editors of the *American Stock Journal*, assisted the Commissioners in the discharge of their duties, and describes the symptoms of the disease as follows:—

"The old saying is that 'in dry times all signs fail,' so it is with exudative pleuro-pneumonia, when it assumes a mild form; when it first appeared at Belmont, and afterwards at North Brookfield, it was in the acute form, and in spite of all treatment ran a rapid course; its symptoms were then somewhat uniform—for example, it was ushered in by a short, dry, husky cough, and the animal on being urged to move showed symptoms of distress; the respirations were accelerated; the pulse quick and wiry; the animal dull and listless; the bowels constipated; the milk decreased in quantity and of a yellow tinge, and the appetite not so good as usual.

Now the disease has assumed a milder form, being modified by passing through the systems of various herds, consequently the 'signs fail,' yet let the disease be in ever so mild a form the creature shows unthriftiness, appears dull and has a languid look; the hair in some parts of the body stands on end; the respirations are quickened, as well as the pulse; yet the appetite is not impaired, in fact there is no complaint made about an animal's appetite except when the disease commences in the form pleurisy, in which case very little food is eaten, and if the animal be pressed in the spaces between the ribs it shows signs of pain. It will generally be found that in the acute stage there is considerable tenderness all along the spine, and the moment a person's hand is placed in that vicinity the affected creature will shrink. The horns and extremities are alternately hot and cold; urine dark colored and scanty; faces darker than usual. Yet when the disease takes on the incipient form, the work of destruction goes on in so mild a manner that it eludes detection, until auscultation or percussion reveals it."

THE CULTIVATION OF ROOT CROPS.

From the frequent failures which have occurred in the turnip crop, and the decay of the tubers after they are stored, questions arise as to the modes of cultivation the best suited for the maintaining of a healthy vegetation during the period of growth. Such questions cultivators should endeavour to solve. The numerous diseases to which turnips are liable, may be classed under two heads—vegetable and insect. The former are more under the control of the cultivator, the latter less so. Both are in some measure dependant upon atmospheric causes, but both are greatly influenced by the condition of the soil and the modes of cultivation. Insect depredators usually appear in great numbers one season, and sometimes are not observed for several seasons. But although not generally observed, it may be held as certain that a few appear every season; thus the species are continued, but only appear in great numbers when the conditions are highly favourable for their propagation. The insect known as the turnip fly, blackjack, the green aphid, the green and black caterpillars are the most frequent depredators. Of these the turnip fly is the most common, causing more or less damage every season. To keep in check the turnip fly, several specifics have been recommended—sulphur, soot, lime, singly or mixed, and latterly disinfectant agents. Several disinfectants have been experimented with. One of the best means of saving the turnip crop from the fly and blackjack, is to endeavour to induce a vigorous growth during the first stages of plant life.—After the rough leaf is developed, it is usually considered that all danger from the turnip fly is past. Other winged insects and caterpillars attack the plant in the after stages—generally after the plants are singled.

The vegetable diseases are numerous. One of the most frequent occurrence is mildew, which depends very much on the character of the season as to moisture. Dry and wet rot in the bulbs sometimes cause great damage. Deep stirring of the soil, and only when it is in a suitable state for being stirred, is one of the best means to secure a healthy vegetation. The frequent stirring of the soil during the first stages of growth tends to prevent mildew. The causes of the rot are not well ascertained. It may be held as established that the seed of bulbs which have been affected by rot, are more liable to produce diseased turnips than seed from sound bulbs.—Finger-and-toe and Anbury have lately proved very formidable diseases. The causes of these two closely allied diseases have not been satisfactorily explained. It is found by experiments that an application of calcareous manures in autumn generally proves a means of prevention, if the calcareous matter is applied one or more years previous to the turnip crop. All these diseases are more or less influenced by the manures which are supplied to the turnip crop, but experiments are required to elucidate the connection of certain manures with the checking or wholly preventing certain maladies of the turnip crop. Apart from the constituents of the manures, a good deal depends upon the manner in which these are applied.

The practice of applying the manures in the drills, bringing these in more immediate contact with the rootlets of the plant, may be one of the causes why disease occurs when the plants are growing. Those who have experimented as to the best modes of applying manures have generally found that where a portion of the manures has been mixed and incorporated with the soil previous to the forming of the drills, the plants continued more healthy, being less affected by atmospheric changes than when the whole of the manure was placed in the drills, preparatory to the depositing of the seed. In preparing land for turnips, means should therefore be taken to mix a portion of the manure with the soil previous to forming the drills. Where the farmyard manure has not been applied in autumn, it is necessary to apply it in the drills, except where the manure is so decayed as to admit of being spread on the surface, so as not to interfere with the forming of the drills by the plough, or the depositing of the turnip seed by the sowing machine. Farmyard manure is rarely so decomposed as to admit of its application prior to the forming of the drills. Street manure, however, is generally in a suitable state for this mode of application, while the class of manures known as portable admit of their being so applied. The manures may be ploughed down. After the manures have been applied on the surface, such as guano, superphosphates, rape dust, or other fertilisers, they may be incorporated with the soil by the use of common harrows or light grubbers. In most cases, two turns of the harrows will prove sufficient, preparatory to drilling; but this is not generally necessary, if the soil is loose.—The soil being reduced and ready for drilling, one or more manures may be applied, and the drills formed with two light ferrows. The fertilisers are thus enclosed in the body of the drill, and are accessible to the rootlets of the plant, while the manures are more incorporated with the soil than if they had been applied in the drills, and these re-formed preparatory to the sowing of the seed. Thus