Land, I herewith transmit for your information copies of the correspondence which have passed with that gentleman on the subject.

"I regret that the result should not have proved more favourable to your project; but from the enclosed letters, and more especially from Mr. Young's last communication of the 29th ultimo, you will see that the obstacle to the proposed plan has been the apparent impracticability of carrying the fish in the mode you suggested, namely, in tanks placed in the poop of Convict Ships; while, on the other hand, the alternative of using a welled Smack for their conveyance has, for the present at least, been abandoned, as being attended with too much expense. Under these circumstances, therefore, it has not been considered advisable to take any further steps in the matter until I shall be in possession of any additional suggestions which you may have to offer upon it.

"I have the honour to be,
"Sir,
"Your most obedient humble servant,
"GREY."

IV. *On Experiments for determining the Manures most suitable to the Turnip Crop. By* Sir W. T. Denison, F.R.S., *&c.* [*Read 9th October,* 1850.]

There is a Report drawn up by the members of the Annandale Farmers' Club, and printed in the Transactions of the Highland and Agricultural Society of Scotland for March, 1850, which is remarkable for two things:—1st. The spirit which caused a body of farmers to unite and carry out a system of inspection, the sole object of which would appear to have been the attainment of information which they might apply usefully to the cultivation of their farms.—2nd. The results of the system of cultivation pursued.

As I believe that a system of careful experiment would be most advantageous to the agriculture of this colony, and

as I am also convinced that the turnip crops grown here fall very far short in weight of even the lowest upon the farms inspected and reported on, I cannot but think that a short abstract of the system pursued, and of the results produced, both as regards the combination of the farmers and the cultivation of their farms, may be acceptable to the agriculturists of Van Diemen's Land.

The Report commences with a brief sketch of the results produced by a system of careful measuring and weighing all the products of the farm, the object being, of course, to get at the precise results of experiments made with different manures, of different modes of feeding stock, &c.; and these are illustrated by examples. It appears that at the sheep and cattle show at Lockerby, in 1834, there was only one sheep which reached 120 lbs.; next year some reached 140 lbs.; and the average of the best lot of twenty was 120 lbs. Gradually the average rose of every sort of sheep; and for some years the top lots have reached 160 and 180 lbs.

Premiums were given, and experiments made on increase of weight by different modes of feeding, quantities of grain consumed, &c. In all, the real weight of mutton produced was determined.

The Report, which forms the substance of the paper, was the result of a wish to carry out the principle of determining the value of agricultural produce by weight and measurement on the part of the Annandale Farmers' Club. A committee of inspectors was appointed, whose duty it was to inspect a number of the turnip-fields in the district, not for the purpose of competition among the farmers, but to give general information as to the real produce of the district, and to elicit useful information, by comparing the weights of produce of different fields under varying circumstances. Thirty-

four farms were visited, of which twenty-nine were in the hands of tenant farmers. The mode adopted was by taking the weight of turnips grown in ten lineal yards in different parts of the field, selected as affording an average of the different shapes of bulbs: the tops and roots were cut off before weighing.

The Table which gives the details of each experiment is too long to insert here; but the following may be taken as a description of the particulars noted, and of the average results.

The first column gives the names of the farms and the species of turnip grown; the next, the distance between the drills; the next, the number of turnips in ten yards, from which of course we obtain the distance between the plants in the drills; the next gives the weight of the crop per acre; and the next four describe the character and amount of manure used, either of farm-yard dung, guano, dissolved bones, or ground bones: the date of sowing is given in several instances in the column of remarks.

The average results may be stated as follows:—

Of Swedes, the average crop was 21 tons 16 cwt. to the acre.

Of Yellow Turnips, 20 tons 2 cwt. to the acre.

Of White Turnips, 22 tons 7 cwt. to the acre.

The opinion of the Club, as expressed by the majority of the members on several points connected with the cultivation of this crop, may be briefly stated as follows:—

1st. *Time of Sowing.*—Early sowing is decidedly advantageous. Swedes sown before the middle of May yield several tons beyond those sown about the 1st of June; and the same holds good as regards Yellows. It would be desirable, therefore, always to sow a large portion of Swedes and some Whites in May: the latter will then be available for cattle at the end of September, or the beginning of October.

2nd. *Width of Drills.*—This averaged 28 inches, varying from 25 to 30; but the opinion of the Club was, that on land of ordinary fertility, with the proper quantity of manure, the spaces should run from 28 to 30 inches.

3rd. *Width of Hoeing.*—On the majority of the farms it has been the custom to thin from 7 to 8 inches; but in one instance, where the turnips were thinned to fully 13 inches, the result showed that the practice had conduced to increase the weight of the crop. Mr. Elliot, on whose farm this practice obtained, was of opinion that when full manure was given, especially where all the manure of dung, guano, and bones are sown together, the best distance between the plants would be found to be 14 inches; and the Club express an opinion that this should be tried extensively. Deficiency of manure, late sowing, or cold situations will be good reasons for modifying the practice.

Crops of 24 tons to the acre of Swedes have, however, been produced with hoeing from 6 to 7 or $7\frac{1}{2}$ inches apart: but with common white or red turnips this, or even 9 inches, is much under the proper width.

4th. *Manures.*—The advantage of large quantities of rich and well made farm-yard dung, as the manure to be principally depended upon, is completely established. The quantity should never be under 16 cube yards to the acre, unless with a large addition of ground bones as well as guano. It appears that from 2 to $2\frac{1}{2}$ cwt. of guano in cases of indifferent dunging has increased the produce from 4 to 6 tons per acre. It appears to be a common practice to apply, in addition to 13 or 14 cubic yards of dung to the acre, about 2 cwt. of guano, or 12 bushels of bones. The main point, however, is to increase the quantity of farm-yard manure.

The object of the Club in printing the Minute respecting

the turnip crop was to call the attention of farmers to the subject, with a view to trying experiments over a more extensive tract of country, and thereby eliciting, if possible, correct information as to the right proportion and kind of manures, proper distances apart in thinning the crop, &c.

I would submit to the Society that the object here sought to be obtained with regard to the turnip crop only is one which in this Colony it would be advisable to attempt to attain, with regard to all the staple agricultural products. It would be desirable at the annual exhibitions of stock throughout Van Diemen's Land to pay attention to not merely the shape of the animal, or the quality of the wool, as regards sheep, but also particularly to the weight of the carcase, upon which the value of the animal, when brought into competition with the imported stock from Port Phillip, must mainly depend. As regards the amount of agricultural produce to the acre, the average quantities taken throughout the colony show evidence of a system of farming far below mediocrity. The first step towards improvement will be the dissemination of accurate reports of the results of actual experiments in various parts of the island on soils of different characters, with various kinds of manures;—and I would suggest that the attention of the Midland Agricultural Society should be called to the subject; and also that communications should be addressed to gentlemen who may be known to individual members of this Society as practical farmers, requesting their co-operation in carrying out the objects before stated, by making accurate and detailed experiments on various crops grown on their farms.

In order that these experiments may be made upon some system which would admit of an exact comparison of results, it would be as well that a committee should be appointed to draw up some blank forms showing the nature of the

information required with regard to each crop; and, in order that this may be done in a manner the most likely to elicit information, power should be given to the members to associate with themselves practical farmers or others whose experience may be likely to prove useful.

V. *On Various Modes of Planting the Potato, with a View to the most Profitable Crop. By* Sir W. Denison, F.R.S., *&c.* [*Read 9th April,* 1851.]

It may be interesting to the Society to have a record of the results of certain experiments recently carried on under my directions within the Domain in a paddock which has been under cultivation for several years.

The object of these experiments was, in the first place, to ascertain the effect produced by under-draining the land; and, in the second, to decide upon the best mode of planting potatoes,—that is, the mode by which any given area of land could be made to produce the most profitable crop.

The field upon a portion of which these experiments have been made is that opposite the Powder Magazine, having some rows of oak-trees along its east and west sides: the ground slopes gradually to the south east,—while it has a more rapid fall towards a water-course or drain running diagonally across it from west to east, or thereabouts.

The soil varies a good deal in character; but in that portion upon which the experiments were made it may be called a sandy loam: in the upper part the clay may be said to predominate, and in the lower the sand. There is also a ridge or bank where the broken surface of the sandstone substratum is intermingled with the soil.