

And the following from Prof. Wrightson, is worth reading :

There is nothing astonishing in 40 tons of turnips to the acre, as some appear to think. The season has been a good one for roots in the Northern counties, and it is well known that 50 and 55 tons of turnips per acre can be produced in Scotland. In order to grow such a weight per acre in Southern England, we must have recourse to mangel-wurzel, a plant which is too susceptible of injury from frost to become a favourite down North.

The question of weight per acre of roots is an interesting one. In Stephens's "Book of the Farm" (first edition) instances are recorded of from 40 to 60 tons per acre. There is a recorded case of White Tankard, 79 tons 18 cwt. per acre, raised on Lord Charville's property in Ireland, and published in the "Leinster Express" in 1840. Why 40 tons should be considered sensational it is not easy to see. There is nothing "tremendous," neither is it any "great feat," to produce 40 tons per acre in Ayrshire of turnips. The usual distance between turnip drills or ridges in North Britain is 27 in., although occasionally the drills are raised 30 in. wide. White turnips are left 9 in. apart, and taking 27 in. as the distance from drill to drill, there would be in a regular crop a possible 25,813 turnips per acre. Mr. Stephens constructed a table showing the result in tons per acre for every 1 lb. that an average turnip would weigh. According to calculation, if each turnip weighed 1 lb. the weight per acre would be 11 tons 10 cwt. It would, therefore, only require an average of 3 1-2 lb. per turnip to yield 40 tons per acre. This would only be a small turnip, for they are capable of growing five times as heavy without any difficulty. Mr. Stephens, in commenting upon this arithmetical view of the possible yield of turnips, remarks:—"On comparing the amount of what the crop should be with instances given in the newspapers of what are considered great crops, it will be seen that these, after all, are no more than what they should be; and they are only

the result of what might be expected to be attained by combined skill and care in cultivation."

In Northumberland 20 tons per acre is only a fair crop; but weight per acre rapidly increases with size, so that judges are liable to under-rate rather than over-rate the produce. It was pointed out to me very many years ago that turnips, like spheres, vary in weight according to the cubes of their diameters. If a crop of turnips averaging 4 in. in diameter weighed 20 tons per acre, a crop averaging 5 in. across would weigh as 64 : 125, or 40 tons per acre. The difference of 1 in. might not be very apparent to the eye, but would, as between 4 and 5 in., mean a difference of 20 tons per acre. One more instance might be given to show how enormously a turnip crop increases in weight by a comparatively trifling increase in diameter of the average root. A crop in which the average diameter of the roots is 3 1-4 in. will be one quarter as heavy again as a crop in which the roots are 3 in. in diameter, and yet the difference would scarcely be appreciable to the eye. If one crop weighed 27 tons per acre, the other would weigh 34 tons per acre.

VALUE OF FARMYARD MANURE.

It can safely be asserted that the lack of care still given on too many farms to the preservation of farmyard manure is entirely due to the fact that farmers are not fully aware of its true value, nor of the losses which it sustains by leaching or over-fermenting. Were this better realised, it cannot be doubted that much greater attention would be paid to the keeping of this valuable product.

The value of farmyard manure is generally expressed in money according to the value per pound in chemical fertilizers of the amounts of nitrogen, potash and phosphoric acid which it contains—the three elements which must be restored to the soil—and as the quantity of these elements vary in the manure according to the nature and age of the animal, and the diet