and 800 lbs. of saline matter—total, 9,120 lbs. The quantity of nutritive matter afforded by a crop of mangle wurzel of 20 tons, or 45,000 lbs. per acre, consists of 900 lbs of husk or woody fibre, 4,950 lbs. of starch, sugar, etc., 900 lbs gluten, 450 lbs. saline matter—total, 7,200 lbs. From a crop of oats, at 50 bushels per acre—the 50 bushels weighing 2,100 lbs.—we obtain 420 lbs. of husk or woody fibre, 1,050 lbs. of starch, 300 lbs. of gluten, 100 lbs. of oil, and 80 lbs. of saline matter—total, 1,870 lbs. A heavy crop of wheat, at 60 lbs. to the bushel, the weight of grain per acre would be 2,700 lbs. The amount of nutritive matter from an acre of Indian corn, at 30 bushels, amounts to 1,003 lbs. From an acre of peas, at 25 bushels per acre, 1,392 lbs. We have, therefore, 6,000 lbs. of nutrive matter from an acre of turnips, 9,120 lbs. from an acre of carrots, 7,200 lbs from an acre of mangel, 1,870 lbs from an acre of oats, 1,703 lbs. from an arcre of Indian corn, 1,392 lbs. from an acre of peas. An acre of good turnips is calculated in Scotland to keep four oxen: would an acre of wheat, or oats, or Indian corn maintain that number? I am indebted to Stevens for these calculations, taken from *Johnston's Lectures on* Agricultural Chemistry.

The use of carrots on a farm is well known to those who cultivate them. The seed should be sown early in the spring—the land having been well worked, for the carrot delights in depth and in openness of soil. The grand use of carrots on a farm is for strengthening and medicinal food to horses and cattle. A gentleman of my acquaintance was very successful in giving them last spring to his horses, when they were recovering slowly from influenza. They greatly promote the health of all animals. The difficulty attending the sowing of the seed of the carrot operates against any large breadth of land being devoted to its culture. They should occupy, however, some space in every root field of the farmer. The long red mangel wurzel, the globe orange and the red turnip rooted are eminently suited for culture in this country. They are suited to a much greater diversity of soils than the turnip. On peaty soils on the reclaimed bog lands of Ireland, they have produced a large amount of food. Equally a cleansing crop with the turnip, the mangel stores as well, if not better, is excellent spring food, can be sown earlier, not being subject to insect depredation. Experiments have been made of late in Ireland of substituting the mangel for part of the daily allowance of oats to working horses, and a calculation made, that by consuming in this way the mangel produced by half a rood of land, a quantity of oats will be saved, which it would require two acres to produce. This crop should be harvested early. I found them more tender than the Swede, the yellow globe more than the red. In pulling them care must be exercised to inflict upon them as little injury as possible.

The parsnip is even more productive than the carrot. In the south of England and in the channel islands, it is much cultivated. In a trial of the Altringham carrot and the parsnip, in Jersey, in 1834, the same quantity of land which produced 261 lbs. of carrots, produced 540 lbs. of parsnips. The Alderney cows are fed on these roots. Their milk is surpassingly rich, and yields more butter, in proportion to quantity, than that of any other kind of cows. Colonel Le Couteur, an experienced agriculturist, states that out of three crops of parsnips, in the island of Jersey, in competition for a premium, the prize crop amounted to 27 ton 8 cwt. per acre—a quantity nearly sufficient for 10 cows during the six winter months. The methods of culture practised in the Channel Islands, are both broadcast and drill; deep trench tillage is adopted, from 1 foot to 18 inches deep. In the spring of 1854, also in the spring of 1855, I partook of the parsnip root which had been all winter in the ground. They were free from decay and of excellent flavour. That the cultivation of roots have proved itself of extraordinary service to the farmer of Britain, is evident to every intelligent mind. It has enabled them to provide a supply of food for their stock, and maintain them in good condition during—even in that country, the trying season before the commencement of the spring feeding, to maintain the fertility of their land, produce more wheat and keep more stock per acre than even France. I am well aware that in this climate we cannot carry the culture of roots to the same extent as is followed in Britain; but when we look to the amount of nutritive matter obtained from an acre of roots, and that by their culture they are the procurers of other future good crops, I am impressed with the opinion that every farmer should cultivate, in certain proportions, the mangel wurzel, the carrot, Swedish turnip and some variety of the white. By commencing in May with the mangel and carrot, in June with the Swede, and even as late as July with the white turnip, he will be able, to some extent, to avoid those difficulties which we have to encounter in this country with regard to labour, and attend to each crop in its several stages of growth, feeding out these different roots in their several