

farmers: early spring, mid-summer and between the close of aftermaths, and the commencement of root rations. Ensilages, whether in trench or stack, lessen the difficulty. On the continent carrots, cabbages and parsnips, are at present being relied upon as excellent auxiliaries. Carrots rank first; it is a safe crop, and often covers the void created by short-comings in the clover, turnips or potato yields. The carrot belongs to the wildings so common in meadows, and seedsmen, in recent times too, by successive cultures of the wild, obtain new varieties of the plant for edible ends.

Four varieties of carrots are cultivated in France: the white, yellow, red, and violet. The white or Belgian carrot with green crown, grows partly above ground: it is very valuable and productive. Its odor and flavor recall somewhat that of the parsnip. The Breteuil, is a variety of white carrot, that grows under ground. The yellow Achicourt—so named after a town in Picardy—is very much esteemed for field culture: it has a long conical, and voluminous root. The Flanders carrot, is a red-yellow, symmetrically conical: strikes down deeply into the soil, and is very productive. The violet variety is inferior to those named. The carrot prefers a climate rather humid: light soils, loams, and peats, if well tilled suit the plant. Alluvial sands produce double the weight of roots as calcareous soils.

The carrot is a slow sprouter and weak in its early growth. The Belgian variety in these respects is less so than others. Particular care ought to be given to the seed; it should be the product of last season's growth. As the carrot has a tendency to degenerate the plan current in France is not bad; that of farmers raising their own seed from selected roots, and exchanging it. The hairy films should be rubbed off the seed before sowing; this can be done by mixing with dry sand, or germinating them in advance, in sand moistened with a solution of wood or peat ashes. There are 280,000 seeds, in a pound of carrot seed, and from 5 to 6½ lbs. will seed an acre—for it is prudent to be liberal. Although the carrot is a food searcher, by penetrating deeper into the soil, and so not as exhausting as globular roots, yet it requires a relatively rich soil; double the weight of its roots and leaves per acre, is the amount of farmyard dung to be applied. Thick sowings are best for poor land. (1)

The after culture of the carrot consists chiefly in weeding and hoeing: the former to be undertaken as soon as the plant is distinguishable—never an easy matter, but less difficult for the Belgian carrot. From 10 to 17 tons is the yield per acre, and the leaves represent about one-third more. Carrots store well, either in silos, cellars, or thatched heaps, and can resist a temperature as low as 42 degrees. If the summer has been dry, the carrot will make up for lost time in growth and swelling. A fork is the best implement with which to raise the roots.

The carrot is relished by all farm animal, the yellow especially as it contains 3 per cent less water than the Belgian; 15 to 20 lbs. a day is the feed for a horse, and allows of oats being economized: carrots impart vigor and strength to horses, rendering the skin supple and the coat shiny. They are excellent for foals; crushed when cooked, and given to calves in their milk is a common plan for helping them forward for the butcher. Ewes are partial to carrots, which improve the milk and so tell on the lambs. The carrot contains a volatile oil which exercises a beneficial effect on horses.

According to Boussingault, the leaves contain more fatty matters and albumen, than the roots, and six times more of salts. The root, contains 10 per cent of sugar, and the leaves, 7. The carrot is from ⅓ to ⅔ less nutritive than hay. In laying down land to pasture in France, about one pound

of wild carrot is mixed with the seeds—like parsley in some cases, as a seasoner or a condiment to the grasses, it imparts a perfume to the hay—aids digestion, and certainly promotes the secretion of urine. (1) Animals only relish it before coming into flower.

M. Gatellier states that the quantity of gluten in wheat, depends on two causes, the richness of the soil and the variety of wheat. The wheats of English origin are often poor in gluten, these wheats grown from American and Australian grain raised on newly reclaimed soils, are rich in nitrogen, and yield the highest percentage of gluten. He also asserts, that the grain of wheat grown on virgin soils, has a tendency to become deformed, and in place of being round, is elongated. The cutting of wheat 15 days before maturity, does not affect the yield of gluten, but on the contrary, augments it. M. Joulie has shown, that between the fecundation and the maturity of the wheat, some complex phenomena take place. There is migration of the nitrogenous and the phosphate matters towards the ear, and a retrogression of potash from the ear to the soil. Hence, the importance of the period for cutting wheat. As soon as the red or white color of the grain can be recognised, there is no inconvenience in cutting, but on condition, that the wheat be left in shock till the complete ripening of the grain. In addition to the richness in gluten in wheat being dependent on the variety cultivated, the same remark bears in the thinness of the skin or bran, a very important question with millers.

The cultivation of cabbage, like carrots, is also extending as an interregnum soiling crop in summer, or before the commencement of turnip feeding. There are three or four varieties of cabbage patronized for field culture in France. Decandolle gives a list of several varieties of wild cabbage, that grow spontaneously on the northern shores of France or the coast of England. Pliny describes three varieties of cabbage. The Gauls utilized cabbage for their alimentation before they were invaded by the Romans. There is one variety of cabbage, extensively cultivated in Normandy and Bretagne, and since five years in the agricultural zone of Paris—the tree or headless: perhaps the "bush cabbage" would be its most descriptive name. It is the variety which differs least from the wild cabbage. It has a very long stem, sends out several branches which are well covered with leaves; the latter never heart. It is a hardy variety, and is less particular about soil and manure.

However, it would be a mistake to conclude, that the cabbage can be cheated; it only yields large returns on strong rich soils, and these conditions are imperative for the Drumhead. In France, the seed is sown in April, in a select plot, as a nursery, to be planted out in June after a soiling crop of rye &c. The dung is ploughed down, and 3 to 5 cwt. of guano hock in as a top-dressing when the young plants have well struck. One pound of guano per 43 yards, represents a total of one cwt. per square acre, so this will enable the scatterer of the dressing, how to regulate the spread. The other plan is, sow in a nursery bed in August, and plant out in April, on land with farmyard manure ploughed down in autumn, freshen up the soil before dibbling the plants—if Drumheads, in rows 26 x 29 inches. A top dressing of guano will not be lost on the crop. In the case of the bush cabbage, the leaves can be stripped off from August, taking care not to injure the stem, and the operation can be continued till the following April. The Drumhead is given to cattle and sheep in the yard, stall, or paddock.

The bush cabbage yields from 6 to 9 tons of soiling per acre; the Drumhead from 25 to 34 tons. In the South of

(1) This would be about 40 tons an acre!

(1) True enough in man as well as beast. They have helped me wonderfully.
A. R. J. F.