and Raspberry may have their tops shortened so as to leave the canes about four feet. Some do this earlier in the season; but the buds are apt to burst if done too soon. In like manner, pear and apple trees that grow well, but produce no fruit, are benefitted by having, say half of some of the young growth cut back. The buds then left are very likely to form flower buds, in place of growth buds for next season. Many take out the old shoots of raspberry and blackberry after they have done bearing, and we have in times past recommended it ourselves; but on further observation, we see very little good, if not positive injury. The partial shade the old stems make, seems rather beneficial than otherwise under our hot suns.

VEGETABLE GARDEN.

As soon as your vegetable crops are past kitchen use, clear them out. Never suffer them to seed. In the first place, a seed crop exhausts the soil more than two crops taken off in an edible condition; in the next place, the refuse of the kitchen is likely to produce degenerate stocks. Good seed saving is a special art by itself, always claiming the earliest and best to ensure a perfect stock.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of plants. Take care, also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

As fast as Endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed.

In cold or mountainous regions, Melons are hastened in the ripening process, and improved in flavor, by a piece of tile being placed under the fruit.

Keep weeds from your compost heaps, as they exhaust the soil, and bear seeds for future brow-sweatings.

BEET-ROOT SUGAR.

On several occasions we have called the attention of our readers to the efforts being made in Europe to extend the production of Beet-Root Sugar. The following article, which we extract from the *Canada Farmer* proves a useful *resume* of much that has already been published:—

If appearances are not deceptive, the production of beet sugar seems destined to be one of the important industries of the future, both in America and Britain. In the former country Professor Goessman, and in the latter Mr. Crookes, have recently endeavoured to show that it is quite possible to grow sugar-beets with profit, and the evidence, though still scanty, seems amply to bear out this assertion. During the year 1867 beet-root sugar to the value of one million six hundred thousand pounds sterling was imported into Britain, and there seems to be no reason why this large demand should not have been supplied from home sources. It is by no means requisite for the successful prosecution of this branch of agriculture to grow monster roots. On the contrary, the weight of each root should not be more than two pounds, because the larger roots are watery and poor in sugar; nor should the roots fall short of one and a quarter pounds in weight, as the smaller examples are frequently woody. The juice should have a specific gravity of from 1.060 to 1.070, though sometimes, when very rich in sugar, it rises to as much as 1.078. The percentage of sugar in the roots varies consideraly, the minimum quantity being 3.62, whilst the maximum is 13.47. The next number below this maximum is 13.19, and is of interest as representing the amount of sugar found in red beet manured with London sewage. Peligot obtained as much as 18 per cent. from some French beets, and some American spicemens have produced nearly the same percentage—an amount, therefore, considerably ahead of the best English samples. In Ireland from sixteen to forty tons of roots may be grown to the acre, so that very satisfactory results might be anticipated in that country. On the experimental farm of the Massachusetts Agricultural College, on the other hand, the amount of roots raised per acre fell short of twelve tons; but there were special disadvantages and difficulties to be allowed for in this case. Calculating from the average yield of a five-hundred acre farm, it is estimated that the producer should possess machinery capable of working up one hundred and fifty thousand pounds of beet-root every twenty-four hours for five months. Such a factory would require nearly a thousand cubic feet of water per hour, and the first outlay for its establishment is calculated at something over fifty thousand dollars. The profits are calculated at nearly twenty-five per cent on the outlay, with six and a-half per cent of sugar increasing the profit seven and a-half per cent—so that if eight per cent of sugar could be obtained the profit upon the original outlay would not be less than forty-eight per cent. By the concreting process of Mr. Fryer, as applied to the raw juice, the refinery can now be carried on during the whole year, instead of only during crop-time; and the spent beet-root pulp left after the extraction of the sugar would appear to be a valuable food for stock. Indeed so far as chemical analysis goes, this pulp, when mixed with other materials, should prove a more useful food for cattle than ordinary mangolds; but this point can only be properly established by a series of properly conducted comparative experiments on feeding. As regards the United States, it has been argued that the cultivation of beet sugar can never prosper, since the difference in the price of American and European labour renders hopeless all competition with foreign producers. This argument is vigorously met by Professor Goessman, who remarks as follows:—

"Although duly recognizing the great weight of this point, for which the farmer rests the success of the enterprise in the end, I believe that its influence as an obstacle is frequently overrated and based upon somewhat obsolete assumptions. The government tax of from $40 to $50 per acre on sugar beets in Germany and France, as well as our higher prices of sugar, will go towards covering our more expensive labour. The interests of the Louisiana sugar planters and the sugar beet cultivators of more northern sections of the country are the same, as far as a proper protection of their industry is concerned; and the public opinion, in view of the requirements of the governments, is apparently prepared to accord to them, for some time at least, this advantage. Great improvements in agricultural implements and in modes of securing the juice have reduced labor by hand to a considerable extent. A short enumeration of the most conspicuous instances may place this statement in its proper light. Various seeding machines, improvements more or less on Garrett's famous seed drill, are used in planting the seed, in four or more rows at once, and at any desired distances from twelve to twenty inches apart. According to the size of the machine, one or two men, with one or two horses or oxen, may seed from eight to sixteen acres per day; the same implement can also be modified by replacing the seed boxes with suitable knives to be used as cultivators, to clean the space between the rows of plants, and to cover the roots. Ploughs with two knives are used to break up the soil on both sides of the rows of beets, to loosen the latter in such a manner, without lacerating them, that children may do the harvesting of the roots. In fact, the whole work in the field, after the soil is once properly broken up, calls for no extraordinary labour. A good deal of the work can be done by boys. Machines do the washing, the grinding or cutting and general handling of the roots to the centrifugal apparatus. The task of handling the pulp of beet roots for the press requires, comparatively speaking, a large supply of hands to do the business connected with that process, but Robert's diffusion method dispenses with a large number of the hands formerly required in the press room—nearly one half."