

CANKER IN FRUIT TREES.

We take the following observations from *Morton's Cyclopaedia of Agriculture*, part 6th; an original work, now publishing, of great merit, bringing down all information relating to agriculture and rural affairs to the latest moment. The work may be procured, as published, of Mr. Maclear, bookseller, of this city, or through any of his travelling agents.

Canker is a word applied by nurserymen to almost every case in which a greater or less portion of a vegetable, of whatever size, loses its vitality from some latent disease which ultimately destroys the parent stock. Thus, we hear constantly of the canker in auriculus, melons, cucumbers, &c.; in forest trees; or, what more immediately concerns ourselves, in apple and pear trees, and occasionally in cherries, apricots, and peaches, though the disease is then more usually called gumming, from the peculiar character which it assumes. It is very probable that the maladies which pass under the name are of various kinds, but we shall confine our observations to the ravages committed in orchards and gardens, and it will be seen that many similar cases are likely to occur amongst herbaceous plants.

Every cultivator of apples and pears, on however small a scale, is soon aware, that with all his care, many of his trees become unhealthy.—Single branches of recent growth at first wither and die, without any apparent cause. The bark which we believe is the seat of the malady, is often loose upon the shoots, especially towards the base, but not invariably; for in the same shoot, that on the upper part is often firm, while that on the lower is easily detached. The line of junction between the dead and living parts is often accurately defined; and there are seldom any fungi present, except on those parts where the bark remains firmly attached. If the dead portions are not cut off, the disease rapidly spreads to the contiguous parts, and, after a few years, the tree entirely dies, or is so unsightly and unprofitable, that the cultivator is glad to root it up. Various reasons have been assigned for the malady, but none at all satisfactory or generally applicable. The truth seems to be—judging from the well-known fact, that certain varieties are far more subject to the disease than others; some indeed, so much so, that it is impossible to cultivate them with success for any long series of years—that it is caused from lowness of temperature, accompanied by wet weather, above or below the level of the soil. Each cell of a plant, or any quantity of cells, may, in a certain sense, be considered independent of the

rest; and causes which, at a given time, affect one cell or contiguous set of cells, may not affect the rest. The health of this isolated part is deranged, disease is set up, and ultimately, decomposition takes place; and, according to the law of nature, which has been so well illustrated by Liebig, where decomposed matter exists in contact with healthy, the contact rapidly communicates the disease; and thus, if several sets of cells were influenced at the same time, the disease may rapidly extend within a given branch, or down one side of a branch, the bark on the other side remaining comparatively healthy, without exhibiting any striking external indications, till after a hard winter, or series of cold ungenial weather coming in aid of the disorganization already established, the portion of bark which carried on a sluggish vegetation fails, and the whole branch seems, as if by some sudden stroke to pass into decay. That some thing of this kind takes place, appears probable from the fact, that in the same garden, trees on the walls will be healthy, while others of the same kind, less tenderly treated, will fail. It seems quite certain that, under the best system of cultivation, and under the most favourable circumstances of soil, drainage, and temperature, the disease is proportionably mitigated, even in the sorts in which, from tenderness of constitution, the tissues are easily influenced; but in those in which it is clearly hereditary, the balance of conditions necessary for healthy growth is so easily disturbed, that the greatest care and skill, and the most favourable circumstances, will not greatly modify or entirely prevent it.

The grand point in laying out orchards and gardens, is, to ascertain what sorts are most exposed to canker in any particular district, and to avoid them carefully; as the result of any extensive plantations, made without due caution in this respect, is sure to be disappointment and loss. Having ascertained this point by personal observation, care must be taken to select a situation as little exposed as possible to chilling winds; the ground must be well drained and the heads kept thin, that every portion may be well exposed to light; for it is a well ascertained fact that the disease often commences in ill ripened wood. If, however, unhappily a bad assortment was originally made, and the complete destruction of the orchard is out of the question, close pruning of all ill ripened shoots, and the covering with clay extensive cankered patches—which have been previously well cleared out with the knife, so as to promote the growth of healthy tissue from the edges—may be used as a mitigation of the evil, though nothing will entirely root it out.