

us now inquire whether we can trace any connection between the existence of this substance and the predisposition to disease?

In the healthy tree, gum is found mixed with the sap in a dissolved state; when the tree is in a diseased condition, gum is secreted, and driven to the surface as a transparent, adhesive substance. In its normal state (dissolved in the sap,) it exists only in the bark; that is to say, in those vessels through which the sap, elaborated by the leaves, descends to form a new growth of wood. Gum is soluble in water, and its greater or less degree of fluidity will depend on the quantity of water employed in its solution. By the simple process of evaporation, it can be reproduced in concrete form; and is, therefore, in a high degree qualified to pass through the various stages of fluidity, under the reciprocal actions of heat and moisture. The health of a tree depends on the free circulation of the sap; and if this circulation be at all impeded, the tree becomes diseased, and, if not relieved, death ensues.

May it not, therefore, be believed that the diseases of the peach, plum and cherry arise from impeded circulation, since they are, in this country, invariably accompanied by bursting or rupture of the bark? And may it not be inferred, that this impeded circulation is caused by gum, when we remember the qualities of this substance, and how it may be acted upon by the excessive heats of the American summer? The influence of the sun-beams, when the air is clear, is very powerful, and must necessarily cause an evaporation more or less rapid in proportion as the heat is increased or diminished. In those parts of the tree which are exposed to the sun, the juices are drawn forth, and the gum, becoming less fluid, moves more slowly, and gradually accumulates in, and obstructs the natural passages; while, in other parts, the tree being subjected to more genial heat, a more active circulation is maintained. The consequence of which is an expansion, and at last a bursting of the vessels through which the sap flows, at those points where the obstruction exists; and then ensue warts, or knobs, or an effusion of sap, and eruptions of gum. Though this is only theory, and needs to be verified by actual experiment and chemical research, yet it derives support from the practice of many gardeners. It has been stated on sufficient authority that salt, applied to the soil about a plum tree, will prevent the black wart. If our argument be correct, the result of the action of salt is obvious enough: the tree receives in its system a solution of salt, which, by its nature, attracts moisture, (or gives greater fluidity to the sap,) and communicates it to the gum; thus preventing the concretion that would check circulation. The cause of the disease (excessive heat,) is not removed by the application of salt; but it acts as an indirect remedy; it alters the secretions of the tree, so that the same cause does not produce the same effect.

We are aware, that plants brought into a condition contrary to their nature lose, to some extent, their vital powers; and that, in consequence, a formation of slime-sugar (saccharum mucosum) takes place. It always follows a great decrease of plegm, (principium mucosum,) which last substance abundantly exists in peach, plum, and cherry trees. In the capacity of the plant to produce slime-sugar at the approach, or, rather, in a certain stage of disease, we see how nature provides the means of accomplishing her ends, since the reduction of the plant to dust (its last destination, in the usual order of things,) is brought about by decay, and the first step towards decay is fermentation. Nature, then, has recourse to that powerful principle of fermentation—slime-sugar—to begin fermentation, and that the taste and odour of this substance will summon to its aid those additional agents of destruction—insects. When, therefore, we perceive, on diseased fruit trees, swarms of in-

sects, let us not confound the effect with the cause, but rather attribute their presence to the disease, than the disease to their presence.—H. J. ELLERS, *Landscape Gardener*.

Barrytown, N. Y., Oct., 1849.

The foregoing suggestions are quite new to us, and come from one of the most intelligent German gardeners in the country. They appear to us to be worthy of the serious attention of our physiological readers, interested in the diseases of stone-fruit trees.

ENGLISH PARKS.—Your criticising correspondent, in the *Horticulturist* for September, speaks of the parks of the English gentry as if they were so many pieces of waste land, useless for all purposes except mere ostentation and display. Now, with all due respect for your excellent correspondent, I must say that his prejudice has to all appearance got the better of his knowledge. In short, he misrepresents Mr. Colman's excellent work in depicting the English as they are, and manifests total ignorance of what he is writing about. It is a notorious fact, that the private parks of the gentry are more fertile, and doubly more productive than any equal surface of land in the whole island. Productive of what? Of human food—and human labour, independent of the grandeur and beauty they give to the landscape. Where is the farm or field in the kingdom that produces an equal amount of these two grand requisites of society, "food and labor," as these private parks? I ask "Jeffreys" to point out any park in that kingdom, including trees and all—those monuments of time, coeval with the growth of centuries, that is not twice as productive as any other portion of the owner's estate. Look for instance, at Windsor Park, embracing a surface of many square miles, and where stands, perhaps, the finest avenue of trees in the world; a lover of landscape beauty would not grudge to cross the Atlantic to look at it. Now, according to the phraseology of "Jeffreys," one would suppose this beautiful park just so much waste land—a perfect sacrifice to royal extravagance and ostentation. Yet of all that fertile park at Windsor castle, which feeds double the quantity of stock of any park, arable or otherwise, that I have seen in New or Old England, there is but a single acre or so, appropriated to a terrace flower-garden opposite the private apartments of the Royal family. There you may see the cattle browsing close to the castle gates. And there you may see the Queen and her husband walking among them with far less peevish delicacy or false refinement, than most of the American ladies would do. Even the pleasure parks of London produce their quantum of human food in the shape of beef and mutton, since they are all kept short by the grazing of sheep or cows. The English gentry know the use of money, and the want of it, too well to allow their parks to be unproductive for mere ostentation and display.

The people of England are proud, and justly too, of their parks. They are the distinguishing features of an English landscape, and present to the lover of nature a combination of utility and beauty which no other country in the world can supply, and which the ablest writers and men of taste