

high a relative humidity, though it occurred also in cut branches, but more slowly, when exposed to drier room air.

The abscission of internodes and of shoot-tendrils (such as those of *Vitis*, *Ampelopsis*) offers another case in point. The tendrils may either persist and serve as a permanent mechanical support for the plant, or they may be shed from the more distal portions of the new stems, as occurs at the end of the growing season. The behaviour may be very well observed in *Ampelopsis Veitchii*. The internodes of the apparently chief shoots are equally marked in this respect. In both ordinary shoots and in tendrils, the plane of abscission lies near, but not precisely at, the base of the internode affected, and is not marked by any histological differentiation. In certain instances the abscission-plane is oblique, or even decurrent, such deviations being found where morphological displacement has occurred. According to the more generally accepted view, the tendril in *Ampelopsis* and *Vitis* is a chief shoot. Its normal position is therefore directly opposite a leaf, from the axil of which the supplanting shoot of the second order arises. However, the tendril frequently, and even usually may, in particular individuals (*Ampelopsis quinquefolia*, according to my observation), suffer an upward displacement of as much as 20 mm., and in such event the abscission plane of the internode above the secondary shoot will be oblique in a degree commensurate with the amount of displacement of the tendril. (Figure 1.) The fact of this morphological disturbance is of great importance in understanding the position of the abscission-plane in the cotton peduncle, as we shall presently see.

The only other further example of shoot abscission to be here cited is that of the clumps of spines in certain cacti, of which *Cereus Thurberi* serves as an excellent example. The fleshy fruits of this species are covered by

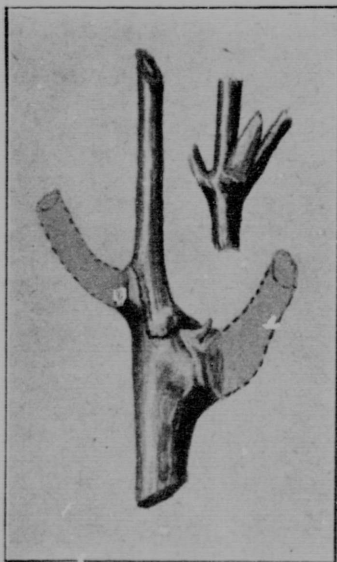


Figure 1. Oblique abscission of an internode in consequence of the upward displacement of the tendril which normally occurs directly opposite a leaf. The normal relation is shown in the upper figure. (*Parthenium argentatum*.)