

that one may describe the process as a fragmentation of the lower part of the style. In the course of a short time, the raw edges of the fissures become brown by oxidation, thus discovering them to the eye. The separation of the corolla proceeds at the same time, although the actual cadence is evident only on the following morning. The abscission plane in the tobacco corolla is irregular and lies a millimeter above the base of the tube (Kubart, 19), while in the epigynous forms it is found above the ovary, and so not at all near the morphological base of the elements of the corolla.

It is only rarely that in leaves there is any externally visible structural indication of the position in which abscission will ensue, and it frequently happens that grooves which are sometimes taken for such indications bear no relation at all to the process. It is probable that in the case of the corolla, or of the individual petals, it is more frequently the case that a more constricted region is made use of. Fitting points this out especially in *Geranium*, *Erodium*, etc., describing it as an extremely narrow, isthmus-like reduction of the blade—a very usual condition. Nevertheless, such a reduced region is entirely wanting in many other species, so that it seems hardly probable that there is any necessary connection between the two phenomena.

PERIODICITY IN ABSCISSION.

We consider, under the head of periodicity, more especially that of leaf abscission. It is true that external conditions affect also that of floral organs, and, to the careful studies of Fitting (20) and Hannig (12) more especially, reference will be made beyond. The apparent synchrony between the fall of the leaf and the end of the growing season being the most widely recognized, it is convenient to discuss this especially.

I say apparent, since, in a large measure, we are deceived in temperate and boreal regions, as well as in the tropics, by the continuity of verdure in its entirety. The constant dying-off of leaves escapes attention, albeit a little careful observation will discover the fact. During, or soon after, the unfolding of the buds in spring, the bud-scales suffer abscission, and as the new shoots advance in age the earlier formed leaves in their turn drop off. Nevertheless, the majority of the leaves produced during the season are, under normal seasonal conditions, shed within a rather short space in the autumn, the exceptions to this rule being the so-called evergreens, in which the life of the leaf is extended over a longer period, namely, two seasons or more. Obviously, in these the longevity of the leaf is predominant, seasonal responses being seen in the growth of stem