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ABSCISSION.¹

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Among the ever recurring phenomena which characterize the lives of plants, perhaps none is more impressive than the usually sudden and complete loss of foliage by trees and shrubs on the approach of winter, unless it be the untimely occurrence of the same change ensuing upon an untoward drought or some equally unfavourable climatic disturbance. The uncouthness and semblance of death attaching to a leafless tree when it should be enfolded in a robe of verdure strikes a sad note, however little one may appreciate the exact nature of the importance of leaves in the economy of the plant. And, when one enters a tropical region, it is the everlasting verdure which at once wakens the interest.

But the fall of the leaf is only one of a series of similar behaviours, in many instances leading to an increase in individuals rather than a mere riddance of parts which are unable longer to resist the conditions imposed upon them. The multiplication of simple plants, such as the algae, by a separation between contingent cells, the breaking away of pieces of stem, of leaves, brood-bodies and the like, so commonly occurring, but usually unobserved, in the mosses (Correns, 1); the shedding of leaves in plants which, like *Bryophyllum* and *Begonia*, use them as a means to propagation by the growth of new plantlets from the leaf-margins or elsewhere; the separation of staminate

¹The text of a lecture delivered under the title "Abscission in Flowers, Fruits and Leaves" before the Ottawa Field-Naturalists' Club, Jan. 27, 1914. Although of a general nature, it includes the results of original observations on a series of about 30 species, with especial reference to the mechanism of abscission. The details of this phase of the work are reserved for another paper, and a brief preliminary account only is given here. All the work on the cotton, (*Gossypium herbaceum*), here reported was done at the Alabama Polytechnic Institute (account of Adams Fund) or at West Raleigh, N.C., (accounts of Bureau of Plant Industry, U.S. Dept. of Agric. and of McGill University).