intervenes so constantly during the earlier stages of seedling development as to make it very difficult, if not impossible, to grow the tree from the seed.[3] The usefulness of the seed is thus defeated.

Again, many plants are unable to shed their leaves at all. *Eupatorium adenophorum*, like a multitude of others, does not do so in nature, nor, as found by Wiesner (1905, through Loewi), even under experimental conditions. This disharmony is not confined to herbaceous plants, as I have found it to occur in the perennial shrub *Parthenium argentatum*. This plant, neither in its native health nor under a variety of experimental conditions, is found to lose its leaves save by a long delayed method of wear and tear, somewhat hastened it may be by a clumsy development of corky tissue continuous with that of the stem, but developing first from a centre at the leafbase. (Lloyd, 8).

ABSCISSION OF SHOOTS.

Not a few trees are able to shed, by a process similar, if not identical,[4] with that in leaves, their smaller, and in some cases, even their larger branches. The Central American Rubber Tree (*Castilloa elastica*) is a striking illustration, and has been described by O. F. Cook (9). The young tree produces no permanent branches till the third or fourth year. Those which develop before that time are long and semi-pendulous, measuring scarcely one inch in diameter at the base and reaching a length of ten or twelve feet. These are all shed, being released by a softer layer of tissue, arranged in the form of a socket, quite at their basal extremities. The loss of twigs by poplars, willows and other trees is comparable with, if not as striking as, that of *Castilloa*. The shedding of twigs produced from axillary buds which grow at once, instead of entering a resting condition, occurs in the camphor tree (in Alabama), which, in respect of general appearance of the abscission, is very similar to *Castilloa*. The mechanism of abscission in its living tissues (cortex) is identical with that of the leaf, as v. Hoehnel observed in *Populus*, *Salix*, beech, etc., and as Loewi also found to be the case in *Cinnamomum Camphora*. *Euonymus atropurpureus*, which is grown in this part of the world as a small ornamental tree, also sheds its twigs, more especially those which happen to be exposed to the denser shade of overhanging branches. Loewi observed this behaviour in potted plants, attributing it to too

[3] My attention was drawn to this instance by my colleague, Professor Willey. See Wright, H., Ann. Roy. Bot. Gard. Peradeniya, vol. 2 (?).

[4] It is obvious that when large masses of wood, etc., are involved, some sort of fragmentation must take place, but a really satisfactory account of the underlying causes is not yet available. See, however, v. Hoehnel, 10, 11.