

GALL MIDGES AS FOREST INSECTS.

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The minute gall midges or Itonididae have been practically ignored by the forester and, taken as a group, little is known of their economic importance under average woodland conditions. The larger, frequently abundant deformations produced by the gall-making wasps, Cynipidae, and the sawflies, Tenthredinidae, are relatively much better known, though it is probable that they are of less economic importance.

Numerous gall midges, referable to the Lestremiinae and Heteropezinae, live as larvae in decaying woody tissues and materially hasten the process of disintegration. Species of *Miastor* and *Oligarces* inhabit the inner bark of various trees in incipient stages of decay, while some species of *Monardia*, such as *M. lignivora* Felt have been reared from the fungous affected heart-wood of pine and undoubtedly hasten decay. Some *Epidosariae* inhabit dead, mostly dry, woody tissues.

All of the foregoing species are of less importance than the gall-making forms infesting living trees. The deformations of the latter may be conveniently classified according to the part affected.

Seed of fruit-inhabiting midges, such as *Dasynura canadensis* Felt, may destroy a considerable proportion of seed in spruce cones. The same is true of *Oligotrophus betulae* Winn. and birch seed, while *Itonida catalpae* Comst. infests *Catalpa* pods and is a pest of some importance. Whitish, flower-shaped, fungoid galls, probably a bud and possibly a fruit deformation, are numerous in some parts of the South on Bald Cypress, *Taxodium distichum*, and are caused by *Itonida anthici* Felt. The extent to which fruit infestation may go in this group is shown by the rearing of seven species from the fruit of various wild cherries.

Bud galls are produced by many species and usually mean the death of the affected part, or at least a resultant deformation. The *Catalpa* midge, mentioned above, not only infests the seed pods but destroys the greenish tips and produces stunted, comparatively worthless trees. *Phytophaga ulmi* Beutm. and *Dasynura ulmea* Felt infest lateral and terminal buds of elm sprouts and occur somewhat abundantly, though their injuries have not as yet been considered of much practical importance. The Box Elder in the West suffers from the attack of two gall midges, namely, *Cecidomyia negundinis* Gill., a bud-inhabiting