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A New Cecidomid Infesting Box-Elder (Negundo aceroides)

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A NEW CECIDOMID INFESTING BOX-ELDER (*Negundo aceroides.*)

BY C. P. GILLETTE.

Cecidomyia negundinis, n. sp.

Galls.—The galls are produced from terminal buds on all parts of the tree, and each is made up of a number of transformed leaves and petioles, arranged in pairs opposite each other, in which the two leaves are opposite. They are sub-globular in outline and vary from less than one-half of an inch to nearly an inch in diameter. The outer basal portion of the gall is formed by an enormous enlargement of the bases of the petioles of two leaves which unite and form a receptacle like the cup of an acorn, holding the inner portions of the gall. In the central part of the gall the leaf blades may be entirely involved or their tips may be expanded.

Gall Flies.—Females, dry specimens. *Eyes* large, coal black and coarsely granulated. *Antennæ*, one half the length of the insect, 13 jointed, first joint globular, remaining joints cylindrical; second and third joints contracted in the middle; pedicels of joints, short, about one-fourth the length of the joints; all of the joints moderately set with hairs, the longest of which nearly equal the joints in length. *Thorax*, very dark brown, opaque, and naked, except two rows of long gray hairs in longitudinal grooves, running from collar to scutellum, and similar hairs at the sides of the thorax; scutellum of the same color as the meso-thorax, and with a few long gray hairs. Beneath the wings it is yellowish. *Dorsum*, dark brown; sides of *abdomen* and venter, light yellow; abdomen sparsely set with gray hairs above and below. *Ovipositor*, yellowish brown, and in specimens taken while ovipositing, it is exserted one and one-half times the length of the insect. *Legs*, rather pale; tibiæ and tarsi infuscate, rather densely set with silvery hairs. *Wings*, beautifully irridescent, and rather sparsely set with long gray pubescence, fringed all the way around; costal and first longitudinal nervures, rather heavy, and united at the apex of the wing as one continuous vein; the little cross vein between the first and second transverse nervures and the outer or upper branch of the fork in the third transverse nervure are almost obsolete and scarcely visible, except in favorable light. Length of dry specimens, one and one-half mm.; length of fresh specimens, two mm.

The eggs are of a bright orange color, four mm. in length, and much elongated; some are straight, others are variously bent, and all are pointed at one end, and usually with a short pedicel attached.

This insect is decidedly an injurious species. Trees upon the college campus that were worst attacked by this fly the past summer, have had not more than one-half their normal amount of foliage.

On the 18th of April, last, the writer noticed the flies abundant among the branches of the trees, and the process of egg-laying was carefully watched with a hand lens. The females were so intent upon their duties for the propagation of the species that they were not easily disturbed. They do not pierce the bud scales, but work their long, slender ovipositors far down between the scales, and there deposit a large nest of eggs, sometimes forty or more in a place. By separating the scales these clusters of eggs can be plainly seen with the naked eye. The irritation set up by these eggs and the maggots that hatch from them, aided, perhaps, by a poisonous secretion from the mother insect, causes the abnormal development of the part. The galls and the twigs supporting them all die a few weeks later, when the maggots drop to the ground. These dead galls turn black, and remain upon the trees, giving them an unsightly appearance.

EGG-LAYING OF THE APPLE CURCULIO—(ANTHONOMUS QUADRIGIBBUS SAY).

BY C. P. GILLETTE.

I am not aware that anyone has published actual observations on the method of oviposition by this insect. On the 13th of June, 1889, I was fortunate enough to see a female perform the entire operation which was as follows: First a cavity was eaten in the apple as deep as the beak was long, the bottom being much enlarged and sub-triangular in outline. The walls of the cavity converged to the opening which was only large enough to admit the slender beak. When first noticed the beetle had but just begun her work and it was thirty minutes before she had the egg cavity completed. The beetle, almost immediately after withdrawing her beak turned about and applied the tip of her abdomen to the small opening. After remaining in this position for about five minutes she walked away without turning about to inspect the work she had so neatly done. I at once plucked the apple and examined closely the identical spot where the beetle had been at work and was surprised to find that there was no puncture to be seen, but a minute brown speck instead which would not arouse a suspicion of what had been done. The beetle had smoothly plugged the little opening with what appeared to be a bit of pomace, probably excrement, and she had done the job so nicely that no one would suspect that the little speck marked the place of oviposition unless he had seen such marks before and had learned what they signify. With a sharp knife a section was made through the egg-chamber, with the egg at the bottom.