

Bulletino della Societa Entomologica Italiana, 1879 and 1880. From the Society.

Note sur le genre *Macroderes* Westwood, par A. Preudhomme de Borre. From the Author.

Quelques mots sur l'organisation et l'histoire naturelle des Animaux Articulés, par A. Preudhomme de Borre. From the Author.

Note on a new Northern Cutting Ant, *Atta septentrionalis*.—Notes on the Architecture and Habits of the American Slave-making Ant, *Polyergus lucidus*, by Rev. H. C. McCook. From the Author.

APRIL 8, 1881.

Vice-Director Dr. HORN in the chair.

The Publication Committee laid upon the table signatures 3 and 4 (pages 17—32) of volume ix, of the Transactions of the American Entomological Society, and signature 1 (pages 1—8) of the Proceedings of the Section, printed since the last meeting.

The Publication Committee reported that the Printing Press belonging to the American Entomological Society, had broken down after a use extending over 19 years, and in such a manner as to render it of no further use. The printing will not, however, be delayed but for a short time, as the Committee expect soon to be in possession of a new press of an improved kind.

In behalf of Mr. W. H. Ashmead, Dr. Horn presented the following paper, entitled

On the CYNIPIDOUS GALLS of Florida.

BY WILLIAM H. ASHMEAD.

Jacksonville, Florida.

[PAPER No. 1.]

Having been engaged during the past winter on a study of the cynipidous galls of Florida, I propose to give the results of my investigations in some short papers.

As comparatively little of importance has been published respecting the galls of the live oak *Quercus virens*, I make that the subject of my first contribution:

THE GALLS OF THE LIVE OAK, *Quercus virens*.

Of the many curious galls affecting this tree, the first to which I wish to call attention is one which may be designated by the popular name of

The Live Oak: Pea Gall.

Baron Osten Sacken was the first to give an account of it twenty years ago in his paper entitled, "On the Cynipidæ of the North American

Oaks and their Galls," p. 57, published in the Proc. Entom. Soc. Phila. 1861. He says:

"*Quercus virens*, Live Oak.—Small, globular galls on the under side of the leaf. Diam. 0.15 to .2." Pale brownish when ripe; filled inside with a spongy, cellular mass, which is more dense than that of the preceding (*C. confluentis*), and not unlike the pith of a reed in texture. Single kernel in the centre.

"I am indebted for these pretty galls to Dr. Foreman, who brought them from Georgia, and although I do not know the fly, I have no doubt, from the structure of the gall that it is the produce of a *Cynips*."

In this supposition my researches prove him to be correct. Early this winter, I procured specimens of this gall from a tree, the leaves of which were literally covered with them, and from which I have bred the gall-fly and its parasites, the latter will be described in a future paper.

***Cynips q. virens* n. sp.**

Galls.—Small, globular, the size of a pea or slightly larger; from two to ten, attached to the under side of the leaf; pale brownish in color, filled inside with a dense, yellowish-brown, spongy, cellular mass. A single kernel in the centre. Diameter 0.15 to 0.25 inch.

Gall-Fly.—♀.—Length .15 inch. Head reddish-brown, finely punctate, pubescent; mandibles black; antennæ 13-jointed, reddish-brown, first two joints somewhat fulvous, nearly connate, third longest, about five times as long as second, following joints gradually decreasing in size, excepting thirteenth which is slightly longer than twelfth and infuscated; thorax brown, coarsely punctate, pubescent; parapsidal grooves distinct, two longitudinal grooves on præscutellum blackish; scutellum round very finely rugoso-punctate, pubescent; wings hyaline and remarkably long, veins brownish and thick, radial area almost closed, areolet distinct, petiolated, abdomen dark reddish-brown, all segments visible, basal half of second light reddish; legs light reddish-brown, posterior femora slightly infuscated.

Described from one bred specimen. Although I have nearly two hundred specimens of the galls in boxes, I have raised but a single *Cynips*, and that issued from the gall early in February.

The Live Oak Potato Gall.

By the above name I designate a gall which is found quite abundantly on the twigs and branches. It is evidently the same mentioned by Baron Osten Sacken (loc. cit. p. 259, 1862). He says:

"*Quercus virens*, Live Oak.—Woody swellings on the limb. The specimen communicated by Mr. Glover is a fragment of a branch about one and one-half inches long, with two such swellings; the one is rounded about 0.7 long and 0.5 broad; the other much smaller. I opened the latter and found on the inside a small hollow from the structure of which I have no doubt that the gall is the produce of a *Cynips*."

I obtained specimens of this gall early in January and February, and have succeeded in raising several of the flies. Many of these galls are picked by birds and gnawed by mice; both of which evidently highly esteem the rich, juicy morsel within.

Cynips q. batatoides n. sp.

Galls.—Abrupt, potato-like, irregular swellings of the twigs and branches, varying in size and form, from 0.4 to 0.7 and sometimes an inch long, and 0.3 to half an inch or more broad; the outer surface is rough of the same color as the bark; internally it is white and in consistency not unlike a potato. No kernels; each insect separated by a very thin, hardly perceptible parchment-like substance. In one of the galls I counted fifteen gall-flies.

Gall-Fly.—♀.—Length .12 inch. Head brownish-red, finely punctate, slightly pubescent, mandibles bidentate, tips black; palpi yellowish; antennæ 15-jointed, reddish-brown, joint third not quite thrice as long as first and second combined, joints four to eight subequal, nine to fifteen about equal, terminal joint smallest; thorax more coarsely punctate, brownish-red, covered with fine, short, whitish pubescence, parapsidal grooves indistinct, two longitudinal grooves; scutellum rugoso-punctate, slightly ridged, ridge more perceptible anteriorly and blackish; wings hyaline, veins black, radial area open, areolet distinct, petiolated; abdomen smooth and polished, of a uniform reddish-brown; legs yellowish or yellowish-red, thighs, coxæ and trochanters darker, feet black.

Described from numerous bred specimens all females.

The structural characters of this species indicate the possibility of its belonging to Giraud's genus *Drycosmus*, as defined by Baron Osten Sacken, (loc. cit. 4th article, p. 337).

The Bud-like Gall of the Live Oak.

This gall seems to have been entirely overlooked by all observers; it is difficult to see why, for although not nearly so plentiful as the previously described species, it is yet by no means rare and quite noticeable upon the ends of the twigs.

Cynips q. succinipes n. sp.

Galls.—Clusters of from five to twenty small galls crowded around a terminal twig or branch; globular or bud-like in form; externally yellowish-brown with a surface like buckskin, becoming black with age; internally hard and tough with a single kernel hard and smooth. Diameter from .10 to 0.2 inch.

Gall-Fly.—♀.—Length .14 to .15 inch. Brownish-red; head brown, finely granulated, face densely covered with rather long whitish or yellowish-white pubescence, more sparsely covered on vertex, ocelli black, smooth, shining; antennæ 13-jointed, reddish-brown, pubescent; third joint thrice as long as second, slightly infuscated, fourth joint nearly as long as third, seventh to twelfth about equal; thorax reddish-brown rather densely pubescent, two black subdorsal vittæ

extending from middle of mesothorax forward to collare in straight line with outer ocelli, parapsidal grooves distinct, brownish-black, two small grooves between these and just back of the black vittæ, converging towards scutellum not quite reaching hinder edge; the grooves are blackish and also the surface of the mesothorax a short distance along their edge; scutellum roundish, punctate and pubescent; wings hyaline, veins brownish all strongly defined, radial area nearly closed, areolet closed, the closing vein very pale; legs a clear amber pubescent; abdomen dark brown, smooth and shining basal part of the second segment reddish.

Described from one bred specimen.

The Leafy Gall of the Live Oak.

Another curious and by far the most interesting gall I have yet found in Florida, is that to which I have given the above name. Growing as it does in the bud axil of the leaf, and not unfrequently in close proximity to the others, the gall would naturally be taken by most observers for the blossom of the oak; indeed I never until lately suspected it to be the product of a *Cynips*.

On page 72, vol. 2, of "The American Entomologist," is figured a gall discovered by H. F. Bassett, so well known for his researches in this interesting branch of entomology, which will give one a fair idea of the species under consideration.

At first I was inclined to believe my species and his, which he calls *Cynips frondosa* identical; but on a careful study of his description of the gall, (he does not characterize the insect producing it), I have no hesitancy in describing it as new.

Mr. Bassett found his species at Waterbury, Conn., on the Chinquapin Oak, *Q. prinoides*; while Walsh found it on the Bur Oak and White Oak; vide Proc. Entom. Soc. Phil. p. 68, 1864.

He says: "When mature it often attains a diameter of two and a quarter inches, and the modified leaves of which it is composed are then much longer and proportionally much wider than at first, so that instead of being what the botanists term 'lanceolate,' they become oval with their tips usually acute."

Bassett says: "The cells containing the larva are smooth, shining, oval, about one-eighth of an inch long."

Walsh also says: "The larger ones enclose four or five cells and when the gall becomes mature, the cells are gradually disengaged from their leafy matrix and drop to the ground, where no doubt the larva will pass the winter more agreeably among the masses of dead leaves, which accumulate in such situations, than it would do if it were exposed aloft to the stormy blasts, and the cold driving sleet of the dead season of the year."