

allow the passage of the largest eggs.

There are nowhere the so-called compartments for nutrition; each egg follows the other, but the ripe ones are connected by darker funiculi, containing epithelial cells, and around them rounded cells with a nucleus. The interior membrane of the egg tubes is structureless and hyaline, not very easily seen. The exterior membrane is fibrous, and around the larger eggs shows often lacunes and holes filled with epithelial cells with nuclei. The connecting parts around the lacunes are often small and of decided muscular appearance. In the part between two eggs the membrane is striated longitudinally.

The chorion of ripe eggs in the tubes shows sexangular spaces, the borders between them comparatively wide and hyaline. The centre of these spaces are darker and filled with pavement cells, round, of .015 mm. in diameter, with

numerous fine dark spots.

I was not able to find the micropyle in eggs contained in the ovarium. The micropyle of laid eggs is dorsal a little before the inferior pole; there are ten to twelve little holes somewhat different *in situ*, forming small funnels with a stem as long as the diameter of the holes. Near them numerous filiform spermatozoa (?) were seen. The eggs are cylindrical, concave on one side, the ends rounded a little; often one end thicker; the yolk corpuscula .012 to .025 mm. in thickness.

The dissected queens of *E. rippertii* were from Jamaica and Cuba, of *T. gilvus* from Rangoon, Burmah. *E. rippertii* is probably the long sought for imago of *Termes devastans*, Kollar. The above is a part of a proposed monograph of the anatomy of the *termitina* for which a large number of figures have been made.

SECOND CONTRIBUTION TO A KNOWLEDGE OF THE AUTUMN LIFE-HISTORY OF CERTAIN LITTLE KNOWN APHIDIDAE.*

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The present paper is the result of a continuation of the study of the autumn life-history of the *aphididae*, begun in Illinois in 1887. The observations here recorded were made at Columbus, Ohio, during the autumn of 1888, upon the grounds connected with the Ohio State University.

MELANOXANTHUS SALICTI (HARRIS).

This species was first described by Dr. Harris in his treatise on insects injurious to vegetation as *Aphis salicti*.* In the Flint edition of the Treatise, however, Mr. Uhler states in a foot-note that the specific name had been "long ago appropriated by

* For the first article of this series see *Psyche*, Nov.-Dec., 1888, v. 5, p. 123-134.

* 1st ed., 1842, p. 190-191; 2nd ed. 1852, p. 208-209 Flint ed., 1862, p. 239.

Schrank to a very different species of *Aphis* inhabiting Europe," and suggests that the American species "might be called *Aphis salicicola*."

The insect was again briefly discussed as *Lachnus salicicola* by Dr. Cyrus Thomas in 1878,* and finally in his Synopsis of the *aphididae* of Minnesota,† Professor O. W. Oestland refers the species to *Melanoxanthus* and restores the name originally given by Harris, which, he says, "is not occupied when applied to this genus."

The only forms of the species as yet described are the viviparous ones.

My observations upon the insect began in October, 1888, when I found it very abundant on the twigs of a species of willow (*Salix*) growing in the bottoms of the Olentangy river on the Ohio State University farm. The sexed forms were present in great abundance and could be seen mating, while many of the females were busily engaged in oviposition. The following descriptions were drawn up from living specimens.

Winged male.

Length, tip anterior to tip of folded wings	7.50 mm.
Length of body	2.50 mm.
Wing expanse	9.00 mm.

Body small; bluish black, with glaucous bloom. Legs very long, hairy; coxae unicolorous with body; femora and proximas $\frac{1}{2} - \frac{2}{3}$ of tibia reddish brown; apical portion of tibiae together

with tarsi, black. Antennae long, hairy, black throughout; joints I and II short, subequal; III, long, $\frac{1}{3}$ longer than IV, which is also about $\frac{1}{3}$ longer than V; VII slightly longer than VI; joints III to VII roughened with numerous sensoria; cornicles vasiform. Prothorax with a blunt tubercle on each side. Wings hyaline; veins brownish; wing insertions generally greenish black.

Described from numerous specimens taken on twigs *Salix* sp., 29 October 1888. Some of them seen *in copula* with oviparous females.

Oviparous female.

Length of body	3.00 mm.
Width of body across abdomen	1.50 mm.

Body bluish black, with a glaucous bloom. Legs hairy; coxae unicolorous with body; femora and proxima $\frac{1}{2} - \frac{2}{3}$ tibiae yellowish brown, and apical portion of tibiae together with tarsi black. Antennae hairy; joints I and II unicolorous with body, proxima $\frac{2}{3} - \frac{3}{4}$ of III yellowish brown, and the remainder black: joints I and II short, subequal; III longest of any but shorter than IV + V; IV slightly longer than V; VI and VII subequal: V, VI, and VII roughened with numerous sensoria. Prothorax with a blunt tubercle on each side. Cornicles short, vasiform, flanged at tip; orange yellow. Rostrum blackish, reaching anterior margin posterior coxae.

Described from many specimens collected on twigs of *Salix* sp., 29 October 1888.

* 8th rept. State ent. Ill., p. 115-116.

† Geol. and nat. hist surv. of Minn., Bull. No. 4, p. 36.

Egg.

Length 1.00 mm., oval, greenish at first but becoming black in a short time. Deposited on bark of twigs, especially about buds.

MYZUS RIBIS (LINN.).

Notwithstanding the abundance and destructiveness of this species, its life-history does not seem to have been traced, nor the sexed forms described.

During the past season I observed the habits of the species which was abundant on the currant bushes in my garden, finding that the lice left the bushes early in summer but was unable to learn to what plant they migrated. In September winged viviparous females returned to the currants and gave birth to young which developed into oviparous females. The winged males flew in from some other plants, presumably being developed on the same plant as the migrating viviparous females which gave birth to the oviparous form.

Winged male.

Length of body . . .	2.00 mm.
" " antennae . . .	2.70 mm.
" " cornicles . . .	0.50 mm.
Wing expanse . . .	8.50 mm.

Antennae, head, band on dorsum of prothorax, row of dots on each side of dorsum of abdomen, and transverse patch back of middle of same, black. Legs very long, with coxae, apical half of femora, and apical fourth of tibiae, together with tarsi, black, the rest being yellow. Cornicles long, slender, slight-

ly incrassate. Antennae about $\frac{1}{3}$ longer than body, slender, roughened with numerous sensoria; joint I large, thickened, about as long as II; III longer than any except VII; IV and V subequal; VI shorter than V; VII very long and slender. Cauda minutely tuberculate, with several curved stiff hairs arising from the margin.

Described from several specimens taken on under surface of cultivated currant leaves, 31 October, 1888.

Oviparous female.

Length75 mm. to 1.00 mm.

Body globose; greenish, shade varying with age of specimen. Antennae pale at base but blackish apically, and at articulations. Legs pale, articulations and tarsi dusky; the thickened posterior tibiae greenish brown. Antennae short, less than half the length of the body: 6-jointed; joints I and II short, subequal; III and VI subequal, both longer than any of others; IV and V subequal, each about $\frac{1}{3}$ shorter than III; joints III to VI strongly tuberculate, having numerous sensoria. Cauda long and large, spinosely tuberculate, with several long curved hairs arising from its dorsal surface. Rostrum reaching posterior margin of second coxae.

Described from many specimens taken on under surface of leaves of cultivated currant, 31 October, 1888.

In some specimens two large eggs were plainly visible. I did not find the eggs *in situ* but there is little doubt that they are deposited on the twigs, especially about the buds.



Weed, Clarence Moores. 1889. "Second contribution to a knowledge of the autumn life-history of certain little known Aphididae." *Psyche* 5, 208–210.

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