

on the abdomen of the male, which in *N. kansensis* is confined to the fifth segment. The female of the latter has a wider lateral margin and larger triangular spots on the abdomen.

***Euparyphus greylockensis* sp. nov.**

Male. Face and inferior orbits black, a yellow, arrow-shaped mark on the side of the face, orbits with white pubescence; frontal triangle yellow, ocellar triangle and occiput black, ocelli yellow; antennæ black. Thorax black, sparsely covered with yellowish hairs; two spots, the humeri with stripes extending to the suture and the post-alar callosities, yellow; pleuræ black, with long white hairs, a large triangular spot just forward of the wing with a second spot between this and the middle coxa yellow. Scutellum yellow, the extreme base and tips of the spines black. Abdomen black and marked with yellow as follows: base of the first segment very narrowly margined; the third segment with oblique stripes, each scarcely one-third the width of the segment in length, extend from the posterior angles, between these and the middle of the segment are two small spots; fifth segment with a central marginal triangle; venter black, a spot on the lateral margin of the third, and the posterior margin of the fifth segment yellow. Femora black, tip of the femora, all of the tibiæ and the basal half of the tarsi yellow, the outer half of the tarsi and a band on the middle of the posterior tibiæ black. Halteres yellow. Wings hyaline, third longitudinal vein simple. Length, 6 mm.

One specimen, Mt. Greylock, Mass., August 8, 1907 (Owen Bryant). Type in the Boston Society of Natural History. Distinguished from *E. tetraspilus* Loew, by its yellow scutellum and peculiar abdominal markings. *E. bellus* Loew, is separated from *E. tetraspilus* by third longitudinal being forked.

NOTES ON PSYLLIDÆ: *LIVIA*.¹

By EDITH M. PATCH.

As a preparation for work with New England Psyllids, it has been the good fortune of the writer to receive specimens from widely separated localities for systematic study. Much of this material has no data other than the locality and date of collection, and it is with the hope that host plant and other biological information may be added by collectors from time to time, that these meagre records are given as a beginning. Photographs of the wing, head and caudal segment are given for the most part instead of detailed description. In order to connect the published account with the specimens studied, the accession numbers of each specimen are given together with what data are available.

¹Papers from the Maine Agricultural Experiment Station: Entomology No. 51.

Livia maculipennis Fitch.

A brief description of this species is given by Thomas (1879), which is quoted as follows:—

“*Diraphia maculipennis*, Fitch. The Spotted-winged Diraphia.

“This is a smaller species than the preceding, being only about one-tenth of an inch long to the tips of the wings. It is of a tawny-red color, the thorax being shaded more or less with dusky; the antennæ have a broad black band near the tips. The fore-wings somewhat shorter and broader than in either of the preceding species; hyaline with a broad smoky band at the tips, a spot back of the shoulder, and some freckles near the margin, of the same color; the marginal and other veins all white, alternating with numerous black rings. The breast, blackish; legs, dusky or brownish.”

The specimens examined by the writer agree with this description except that the wings vary from “hyaline with a broad smoky band at the tips” in the paler specimens to wings which are densely smoked over most of the surface, and that most of the specimens are larger than those recorded by Fitch. The white or colorless veins are in all specimens examined “alternating with numerous black rings.”

Livia bifasciata Provancher (1890) appears from the description to be this species.

The nymph of this species has not yet been recorded.

Figs. 1, 6, and 8 give the wing, head, and cauda.

Lot 1339 Sub. 11. Two females lent by Dr. E. P. Felt with the data “Phoenicia N. Y. Aug. 25, 1904, Van Duzee collector, N. Y. S. Coll. (8).”

Lot 1347 Sub 26. One female lent by Dr. C. Gordon Hewitt with data “Brockville, Ont. Sept. 20, 1903. Collected by W. Metcalfe.”

Lot 1440 Sub 3. Four females lent by Dr. W. E. Britton with data “New Haven, Conn. Collected by B. H. Walden, 13th May, 1911, 30th May, 1911, 26th June, 1910.”

Lot 1348 Sub 1. One female and two males lent by Prof. C. P. Gillette with data “Colo. Agr. Coll. No. 2779.”

LITERATURE.

- 1879 Thomas, C., Third Report (Illinois Eighth) p. 14. Description after Fitch.
On Sweet Flag, *Acorus calamus*.
1890 Provancher, L., Faune Entomolog. du Canada et partic. de la prov. de Québec.
Hemiptères. p. 307. (*Livia bifasciata* new species.)
1895 Mally, C. W., Proceedings Iowa Academy of Science for 1894, p. 153. Listed
for Ames, Iowa.
1910 Smith, J. B., Insects of New Jersey, p. 108. Listed.

Livia vernalis Fitch.

Thomas (1879) describes this species as follows:—

“*Diraphia vernalis*, Fitch. The Vernal *Diraphia* or Jumping Plant-louse.

“Found upon the leaves of the pine during the greater part of the year, puncturing them and sucking their juices. They are of an orange-yellow or bright rust-red color, about (.15) one-seventh of an inch in length, with a square-flattened head, concave on its upper side, with a slight, impressed line along the middle of the front. The antennæ short and thread like, about as long as the head; their basal joints largest, and forming one-fourth of their entire length; the forewings thick and leathery, feebly transparent, dull, pale, brownish yellow; the breast coal-black and legs pale.”

The Colorado specimens differ somewhat from those from Connecticut, the emarginate projections of the front of the head being smaller in the former and the second antennal joint being larger. These are both present in collections determined as *vernalis* by good authorities. In the absence of biological data it is perhaps best to indicate the Colorado material as variety a. for the present.

Livia saltatrix Provancher (1890) is possibly this species.

The nymph of this species has not yet been recorded.

Figs. 2, 5, and 9, illustrate wing, head, and caudal segment of variety a. Fig. 4 pictures the head of a Connecticut specimen. Fig. 10 pictures the cauda of Lot 1339 Sub 59.

Lot 1339 Sub 59. One male lent by Cornell University with data “*Livia vernalis* Fitch. Ag. Coll. Mich. 205. Cornell U. Lot 157 Sub. 38. Received by exchange from Carl F. Baker.”

Lot 1347 Sub 27. One female lent by Dr. C. Gordon Hewitt with data “Aylmer, Que. 31-V-1903. W. Metcalfe.”

Lot 1348 Sub 2. Two females lent by Prof. C. P. Gillette, one

with data "*Livia vernalis* Fitch var. Colo. 388. Trinidad, Colo. 5-14-92. C. P. G." The other with data "Colo. 1624, 6-4-94. Ft. Collins. C. P. G."

Lot 1348 Sub 60. One specimen lent by Prof. C. P. Gillette with data "Antonito, Col. 8-5-99. Dry ground. C. P. G."

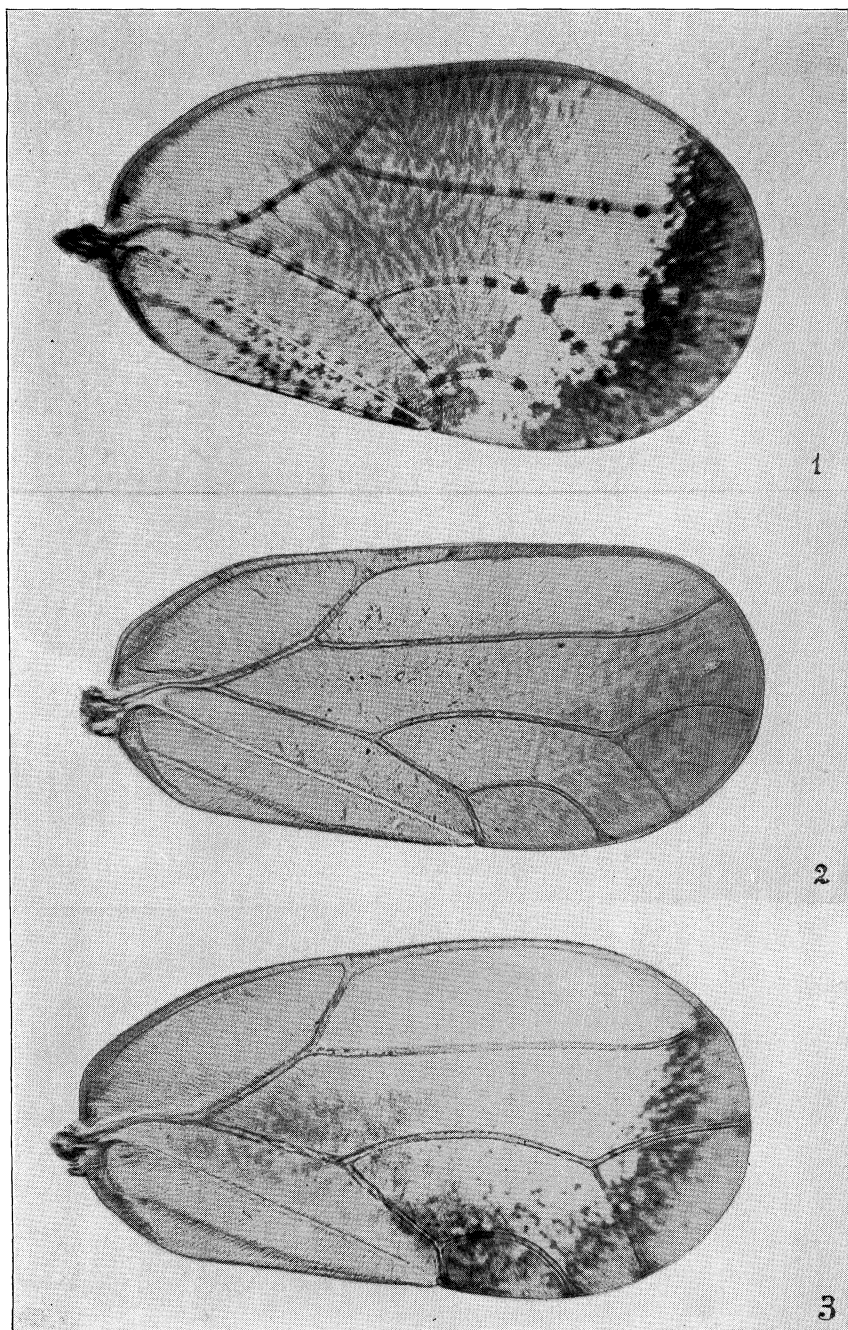
Lot 1440 Sub 1. Four specimens lent by Dr. W. E. Britton with data "*Livia vernalis*, North Haven Ct. 15th July, 1910. B. H. Walden."

LITERATURE.

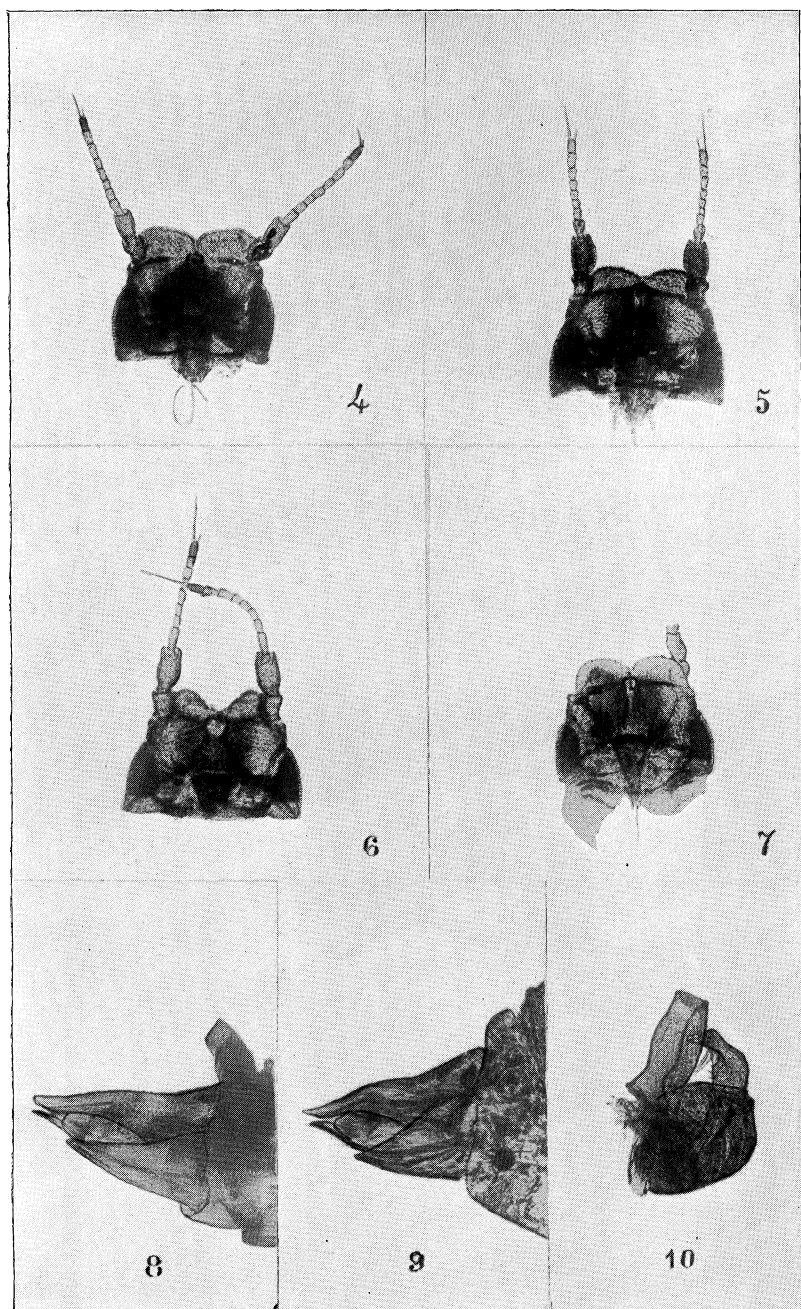
- 1851 Fitch, Asa., Catalogue with references and descriptions of the Insects collected and arranged for the State Cabinet of Natural History, p. 64. Original description "Found in spring in vessels of sap of the sugar maple."
 1879 Thomas, C., Third Report (Ill. Eighth) p. 14. Described. Adults recorded on pine most of the year.
 1884 Riley, C.V. Proc., Biol. Soc. Wash. Vol. 2, p. 68. *Livia vernalis* Fitch (*Diaphia femoralis* Fitch) (*calamorum* Fitch).
 1890 Packard, A. S., Forest Insects, p. 803. Description after Fitch. Listed for pine.
 1890 Provancher, L., Faune Entomolog. du Canada et partic. de la prov. de Québec. Hemiptères. p. 307. *Livia saltatrix* new species.
 1893 Riley, C. V., in Lintner IX, p. 411.
 1894 (1895) Mally, C. W., Proc. Iowa Acad. of Sci. for 1894.
 1909 (1910) Smith, J. B., Insects of New Jersey. "Common throughout the eastern United States on *Juncus* sp.; imago in winter on pine."

Livia marginata sp. nov.

A single male specimen collected at Colebrook, Connecticut, 21st of July, 1905, by H. L. Viereck apparently needs a name. The species is probably close to *maculipennis* and the cauda resembles that of that species. The head as is evinced by the front margin and the basal segments of the antennæ is more like that of *vernalis*. The wing is of the same general type as *maculipennis* though it is conspicuously different in that it lacks the dark spots on the veins. The deep smoky band at the wing tip extends in the specimen at hand from Cu² to R⁸ which as will be seen by referring to the figures is different from the space darkened in *maculipennis*. Lot 1440 Sub 2. Figs. 3 and 7 show the wing and head of this species.



PATCH—PSYLLIDÆ: *LIVIA*.



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