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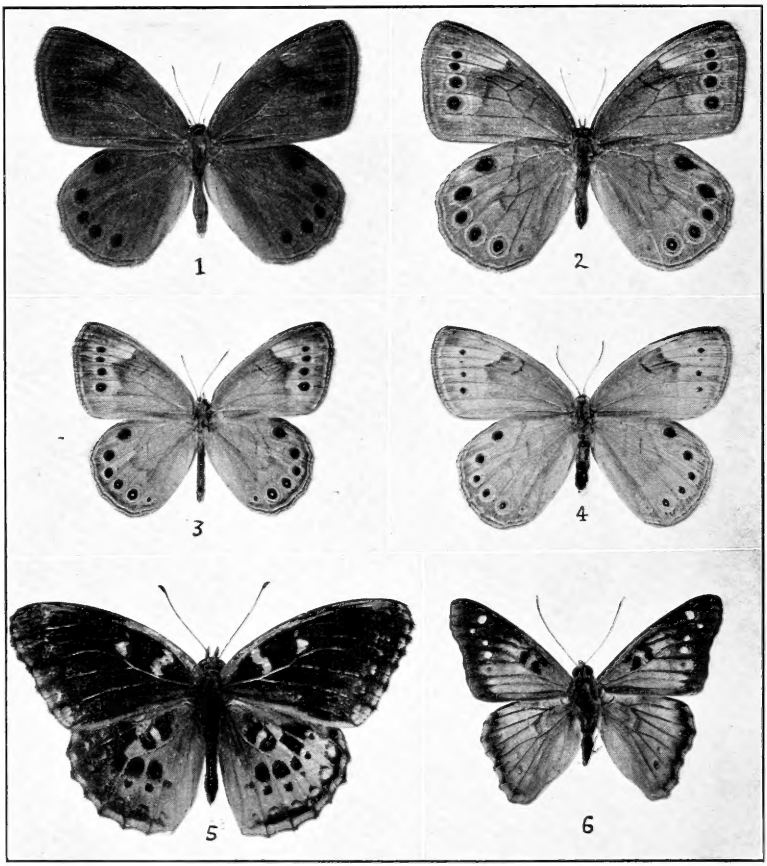


1, 2, SATYRODES CANTHUS, N. VAR. FUMOSUS ♂, ♀; 3, 4, SATYRODES CANTHUS—LEUSSLER.

5, ARGYNNIS ALCESTIS, N. ABERR. SUFFUSA; 6, CHLORIPPE CELTIS N. ABERR. INORNATA—WOLCOTT.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXVII. MARCH, 1916. No. 3.

CONTENTS:

Description of two Hitherto Undescribed Aberrations, the one of Argynnis alcestis, the other of Chlorippe celtis (Lep.).

By ROBERT H. WOLCOTT, University of Nebraska, Lincoln, Nebr.

(Plate IV, figs. 5 and 6)

There exists a lack of agreement among entomologists as to the degree to which the various forms of an insect shall be recognized by name, especially when the form in question is in the nature of an aberration. Nevertheless the writer ventures to describe two such aberrations, believing that the recording of all such marked departures from the type which may occur in nature is desirable from the point of view of the student of variation, and that reference to all such departures is facilitated and rendered definite by the bestowal of a name.

The first of these aberrations is a form of *Argynnis alcestis* Edw. which may be appropriately called

Argynnis alcestis n. aberr. **suffusa** (Plate IV, fig. 5).

The whole surface of the fore wings is suffused with black, except for a narrow strip along each margin. Two fulvous spots remain in the discal cell and faint indications of the fulvous spots just within the submarginal line, which is very broad. On the hind wings the submarginal line is also very broad and a black suffusion covers the greater part of the discal cell. In the usual form there is an area beyond each of the median row of black lunules which is of a slightly paler tint than the rest of the wing but in this specimen these areas are largely suffused by black, causing this row of narrow lunules to be replaced by a band of conspicuous black spots. Beneath, the black suffusion on the fore wings ceases abruptly along a line extending from a point two-thirds of the way out from the body on the inner margin to one three-fourths of the way out on the costal margin and parallel to the outer margin. The apical silvered spots are almost obliterated. On the under side of the hind wings the silvered spots of the submarginal row are to a considerable extent suffused with black; the silvered spots of the median row are largely black; and much black appears about and between the silvered spots on the basal portion of the wing, these spots themselves being slightly larger than in the ordinary form. The black, silver, and cinnamon brown of this surface of the hind wings produces a lively contrast which is quite pleasing.

This form is described from one male specimen collected in a bog south of Grand Rapids, Michigan, in August, 1897. It has the appearance of showing the effect of cold, but if that factor was the only one involved in its production it seems strange that such an aberration is so rarely met with among the species of this genus.

The second form is one of *Chlorippe celtis* Bd.-Lec.

Chlorippe celtis n. aberr. **inornata** (Plate IV, fig. 6).

In this form the ground color of all the wings above is of a browner tone than the average specimen. The median band of white spots on the fore wing is gone and the olive-brown ground color extends out over the discal portion of the wing, leaving only an apical black patch with four white spots, and a black border along the outer margin. No trace of submarginal pale lunules is present and the eye spot between the first and second median nervules is represented by only a small dot. On the upper surface of the hind wing all markings are obliterated except a faint trace of the two eye spots next the anal angle and the faint markings in the discal cell. An irregular submarginal blackish band extends across the wing and is broadest toward the costal margin. On the under surface, the wings show the same tendency to

obliteration of the markings, only the spots in the discal cells of both wings being clearly defined as in the ordinary form. However, very faint traces of the rest of the eye spots on the hind wings can be seen and the markings near the inner angle of the fore wings, including the spot between the first and second median nervules, are very faintly indicated, as in the usual type.

This form also is described from a single male specimen collected near Ashland, Nebraska, June 14, 1913. The name *inornata* very naturally suggests itself as appropriate.

The types of both of these aberrations are in the writer's collection.

DESCRIPTION OF PLATE IV.

Fig. 1. *Satyrodes canthus* Linn., n. var. *fumosus*. Male.
Fig. 2. *Satyrodes canthus* Linn., n. var. *fumosus*. Female.
Fig. 3. *Satyrodes canthus* Linn. Male.
Fig. 4. *Satyrodes canthus* Linn. Female.
Fig. 5. *Argynnis alcestis Edw.*, n. aberr. *suffusa*. Male.
Fig. 6. *Chlorippe celtis* Bd.-Lec., n. aberr. *inornata*. Male.
(Photograph by Ralph W. Dawson.)

A new Variety of Satyrodes canthus from Nebraska (Lep.)

By R. A. LEUSSLER, Omaha, Nebr.

(Plate IV, figs. 1-4)

Satyrodes canthus Linn., n. v. **fumosus** (Plate IV, figs. 1, 2).

This is a variety of *canthus,* very large in size and extremely dark in color, with the spots on the upper surface of secondaries enlarged, elongated and intensified.

♂. Measures 27 to 31 mm. from centre of thorax to apex of wing, most of the specimens examined measuring 31 mm.

Upperside: Ground color a very dark smoky grey instead of the pale mouse brown of the typical form, fresh specimens having even a blackish appearance. Number and arrangement of spots the same as in the typical form but the spots on the secondaries larger, blacker and more or less elongated. Submarginal line like that in the typical form. Lighter area in outer half of primaries generally less pronounced than in typical *canthus.*

Underside: The same darkening of tone prevails, *i. e.*, var. *fumosus* is as much darker than typical *canthus* on the under surface as it is on the upper. The spots are large and well ringed with yellow and pupilled

with white, making them stand out prominently. The various other markings are the same as in the typical form.

♀. Measures 28 to 32 mm., in most of the specimens examined 31 or 32.

Upperside: Somewhat lighter in tone than the males, yet of the same smoky grey. Spots larger than in the males but with the same characteristics. Other markings same as in the males. Lighter area on primaries more pronounced.

Underside: Also lighter than in the males and in the limbal area there is a distinct light patch, most pronounced in the spaces on either side of the third median nervule. The spots are prominent, as in the males.

Described from 17 males and 8 females, collected in 1912, 1913, 1914 and 1915, of which one male is designated the type and one female the allotype. The type and allotype are in the collection of R. A. Leussler at Omaha, Neb.

The habitat of this variety is a spring-fed marsh in Sarpy County, Nebraska, a few miles south of Omaha, where wild rice, rushes and tall coarse grasses flourish.

It seems quite probable that this form of *canthus* has been developed as a result of geographical isolation.

A striking character of this variety is its very large size. Holland in his Butterfly Book gives the expanse of *canthus* as from 1.65 to 1.90 inches. A number of Michigan specimens examined vary from 21 mm. to 25 mm. in the dimension corresponding to that given above. Minnesota specimens average slightly larger, and apparently the species tends to become still larger farther west.

Edwards figures a dark *canthus* in Vol. III of his Butterflies of North America (fig. 5, Pl. 1, Satyrids) which he designates "var." and in the text refers to some large Colorado examples, which he states exceed any eastern ones, the males being 2.2 in. and the females 2.4 in. in expanse. Then he adds "but they do not differ in other respects from their congeners." The variety here described besides being of very large size differs very materially from its congeners.

For purposes of comparison specimens of typical *canthus* from Michigan are shown in Figs. 3 and 4 in the plate.

Phenacaspis spinicola n. sp.; an apparently new Coccid from Indiana (Hem., Hom.).

By Harry F. Dietz and Harold Morrison,* Indianapolis, Indiana.

The following description of what seems to be a new species of Diaspinae is published as a preliminary to a systematic paper on the Coccidae of Indiana, which is now completed and will be issued about the first of April.

We have had some difficulty in deciding the generic position of this species, but after a careful study of related species, including the type of *Phenacaspis* and eight species of *Chionaspis,* have concluded that it should be included in *Phenacaspis* Cooley.

Phenacaspis spinicola new species.

Scale of Female: Length 1.5-2 mm.; strongly broadened behind, widest behind the middle, apex broadly rounded, sometimes more irregular in shape, thin, somewhat convex, color normally white but often gray or dirty gray; exuviae large, occupying fully one-third of the total length of the scale, the first pale brown and shiny, the second very light yellow and dull; ventral scale well developed along the edges, very thin or wanting in the centre, often remaining attached to the dorsal scale.

Scale of Male: Length about .8 mm.; elongate, narrow, sides approximately parallel or slightly curved; white, more or less distinctly tricarinate, roughened above; exuvia, pale yellow, occupying fully two-fifths of the total length of the scale.

Body of Female: Elongate, narrow, broader just in front of the pygidium, distinctly segmented, cephalic segment almost triangular, apex rounded, the two segments preceding the penultimate segment more or less distinctly constricted at the sutures.

Pygidium of Female: Rather large, parabolic in shape; deeply incised at apex by the sunken median lobes; median lobes large, deeply sunken into the pygidium, broad, the outer margins nearly straight, then angularly curved to the median chitinous thickenings, inner margins strongly curved from base to apex, close together and parallel for a short distance at base, distinctly crenulate, second lobes distinctly divided into spatulate lobules, the inner more prominent than the median lobes, inner lobule of third lobes well developed, but broad, only slightly projecting, with serrate margin; no incisions in the margin of the pygidium; with a more or less distinctly hexagonal thickening on the median line at the base of the median lobes, this deeply notched caudally; no plates present, gland spines as follows: one just outside

*The arrangement of the authors' names is alphabetical and indicates neither seniority nor precedence.

median lobe, one just outside of the outer lobule of the second lobe, one beyond the rudimentary outer lobule of the third lobe, one about half-way between this and the base of the pygidium and a group of two to four just caudad of the base of the pygidium; spines as shown in figure; anal opening circular, slightly nearer to base than to apex of pygidium; circumgenital gland openings arranged in five groups, median 8-9, anterior laterals 10-15, posterior laterals 7-10; marginal gland openings as follows: one between the first and second lobes on a slight prominence, one on a slight prominence between second gland spine and inner lobule of third lobe, one just beyond this, opening at the outer angle of the inner lobule of the third lobe, one, the first of a row, on a

Phenacaspis spinicola n. sp.—Pygidium of female, dorsal surface to right, ventral surface to left. (R. E. Snodgrass, del.)

slight prominence a little beyond the third gland spine, one a little beyond this, a little inside of the margin, apparently opening into a pocket, one on a slight protuberance beyond the fourth gland spine and the last a little beyond this; dorsal gland openings somewhat variable, but about as shown in figure; micropores so far as observed as follows: two, one in front of the other, cephalad of the outer lobule of the second lobes, one close to the second gland opening of the first row of dorsal gland openings.

Types deposited in the writers' collections, co-types in the U. S. N. M. Coll., Cornell University collection, collection of Prof. R. A. Cooley, Ohio State University collection, Stanford University collection and Academy of Natural Sciences of Philadelphia collection.

This species has been found in two places just outside of Indianapolis, Indiana, September 15, 1915, and in two places east of Vincennes, Indiana, August 31, 1915, in all cases on the honey locust (*Gleditsia triacanthos*), infesting especially the green spines on the trunk of the tree, but also to some extent the bark, twigs and leaves. In all cases it was scarce, and cannot be considered as being of economic importance.

New and Noteworthy Hemiptera from New England.[1]

By H. M. Parshley, Bussey Institution, Harvard University.

During the past two years I have examined a large number of New England Hemiptera, among which I have found several new forms and numerous species not hitherto supposed to occur in this region. The records noted herewith are of special interest, and in several cases the known range of the species is materially extended. Such results show clearly how inadequate is our present knowledge as a basis for generalizations on the distribution of the Hemiptera, and they emphasize the importance of intensive investigations restricted to limited areas.

GERRIDAE.

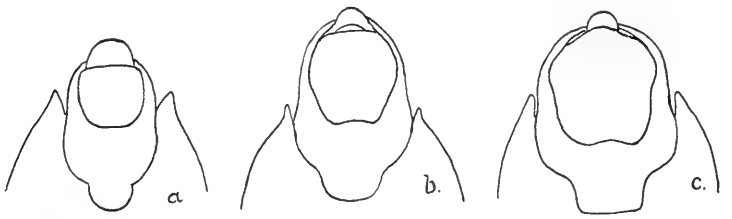
Gerris argenticollis sp. nov. (Fig. *a*).

Dark velvety brown above with fine sericeous pubescence. Anterior lobe of the pronotum with median and marginal yellow stripes, the former faint, the latter clothed with thick silvery pubescence; posterior lobe with yellow margins. Inner margins of hemielytra marked at base with white between the veins. Under surface black or silvery depending on the direction of the light; acetabula, bases of anterior legs and margins of abdomen marked conspicuously with yellow; omphalium and legs variable, black to pale brown.

Relative proportions: of antennal segments, 1st 26, 2nd 13, 3rd 12, 4th 10; of intermediate legs, femur 50, tibia 43, 1st tarsal segment 20, 2nd 10.

Thorax comparatively robust; abdominal spines not reaching apex of abdomen.

♂. Fifth abdominal sternite notched at middle of posterior margin; sixth abdominal sternite not carinate, ventral surface of abdomen not



Male genitalia of *Gerris*, ventral view; *a*, *G. argenticollis* n. sp.; *b*, *G. marginatus* Say; *c*, G. *buenoi* Kirk.

[1] Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, No. 109.

distinctly depressed just anterior to genital segment (as it is in *buenoi*), median ventral (second) emargination narrow, semicircular; genital segment narrow, Fig. *a*.

♀. Lateral plates of genital segment together very slightly wider than long, widest at middle, carinate ventrally.

Length from tip of tylus to apex of abdominal spines, ♂ 7.5-8 mm.; ♀ 8-8.5 mm.

Holotype (♂) and allotype (taken in copulation) in my collection; paratypes in the Museum of Comparative Zoology, Cambridge; Boston Society of Natural History; United States National Museum; and the Academy of Natural Sciences, Philadelphia.

Described from 10 males and 16 females taken at Forest Hills, Massachusetts, 26 April, 4 May, 20 May, 1915, from a woodland pond where it was associated with *G. marginatus* Say and *G. buenoi* Kirk. A female specimen from Southern Pines, North Carolina, 15 March, 1915 (Manee) belongs to this species. This form pertains to the subgenus *Gerris*. It is distinguished from *G. buenoi* and *G. marginatus* by the white markings at the base of the hemielytra, the form of the genitalia, Figs. *a-c*, and the marginal stripes of the anterior lobe of the pronotum which are not silvery in the former and lacking in the latter.

MIRIDAE.

Heterocordylus malinus Reut. Durham, New Hampshire (No. 2485, W. & F.).

This is the most northern record for the species, and the first indication of its occurrence in New England. It is seriously destructive in New York, where it is known as the "apple red-bug."

Pithanus maerkeli H. S. Eastport, Maine, 15 July, 1909 (C. W. Johnson).

In going over some unmounted material belonging to the Boston Society of Natural History, I recently came across seven brachypterous specimens of this European species, which were taken by sweeping in a field. This record, the first for New England, indicates the establishment of the species in this country. It was first recorded by Olsen, from

Long Island, and I have lately seen a specimen from Truro, Nova Scotia, taken by Mr. W. H. Brittain.

HEBRIDAE or NAEOGEIDAE.

Hebrus (or **Naeogeus**) **burmeisteri** Leth et Sev. Edgartown, Martha's Vineyard, Massachusetts, 28 June, 1912. (C. W. Johnson).

One specimen only of this species has been present in the material which I have thus far examined.

REDUVIIDAE.

Apiomerus ventralis Say. Monmouth, Maine, 26 June, 1906, Framingham, Massachusetts, 12 June, 1904.

One of several unusually interesting Hemiptera collected by Mr. C. A. Frost, the coleopterist. It has been considered a southern and western species.

Zelus socius Uhl. Monmouth, Maine, 18 July, 1914 (Frost), Hopkinton, Massachusetts, 14 June, 1914 (Frost), Portland, Connecticut, 10 August, 1913 (Walden).

These I believe to be the first New England records for this species.

TINGITIDAE.

Galeatus peckhami Ashm. Mt. Washington (Glen House, Osgood Trail), New Hampshire, 20 July, 1915 (C. W. Johnson).

This curious Tingitid is a notable addition to the New England fauna.

CORIZIDAE.

Corizus hyalinus Fab. Woods Hole, Massachusetts, 2 July, 1905 (J. A. Cushman).

This species inhabits the warmer regions of the Old and New Worlds and is an addition to the rather long list of more typically southern forms occasionally found along the southern coast of New England.

COREIDAE.

Anasa repetita Heid. Wallingford, Connecticut, 1911 (D. J. Caffrey), Boston (near Chestnut Hill), Massachusetts, 24 Sept., 1914 (Parshley).

The first New England records for this species were published by Mr. C. W. Johnson, Psyche, 1914, p. 82. I took the specimen noted above while sweeping underbrush in open woods, together with *A. armigera*.

Anasa armigera Say. Boston, Massachusetts, 24 Sept., 1914; 13 Oct., 1915 (Parshley).

I believe that these are the first New England records for this species. The two specimens were taken at almost the same spot in two successive years. The individual captured in 1914 differs in some details from typical western specimens in my collection, but the other is so distinctly intermediate as to forbid even racial separation from typical *armigera*.

PENTATOMIDAE.

Zicrona caerulea Linn. Newbury Neck (near Surrey), Maine, 22-24 June, 1904 (F. A. Eddy).

This cosmopolite is widely distributed in the West, but there is only one other record of its occurrence in New England (Mt. Washington, New Hampshire). I have compared the specimen with others in my collection from the Caucasus and Java and note but slight differences apart from size.

A New Species of Heterothrips (Thysanoptera) from Eastern United States.

By J. DOUGLAS HOOD, U. S. Biological Survey, Washington, D. C.

Heterothrips vitis sp. nov.

1913—*Heterothrips arisaemae* Morgan, Proc. U. S. Nat. Mus., Vol. 46, p. 44. (Appomatox, Virginia; on wild grape). (A misidentification, nec Hood, 1908).

Female (macropterous).—Length about 1 mm. Color dark blackish brown, with tarsi and distal ends of all tibiae very pale yellow; basal portions of antennal segments 3 and 4 more or less yellowish, the remainder of antenna grayish brown.

Head about 1.6 times as long as median dorsal length and about 0.7 as long as prothorax, widest near base, cheeks tapering roundly anteriorly; surface closely transversely striate and with a few minute spines, impressed in the region of the anterior ocellus; frontal costa with deep, U-shaped emargination; ocellar area not delimited by chitinous lines. Eyes setose, about two-thirds as long as head, slightly wider than their dorsal interval, not bounded behind by a chitinous line. Ocelli of posterior pair twice the diameter of anterior ocellus, about half as wide as their interval. Antennae about 2.8 times as long as head; segment 3 more or less conical and about 2.8 times as long as

wide; 4 much shorter than 3, about twice as long as wide, sides broadly rounded in basal fourth, nearly straight beyond; 5-8 more or less barrel shaped, with sense cones, 5 narrowed at base; 9 about three times as long as wide, obliquely truncate at base, its axis tipped more or less outward from that of rest of antenna; segment 1 slightly lighter than head, 2 about concolorous with it, very slightly, if at all, paler at apex; 3 and 4 pale yellowish, with orange pigment apically, 3 narrowly and 4 widely, darkened with gray at apex; 5-9 grayish brown, 5 paler subbasally.

Prothorax about 1.4 times as long as head and about 1.6 times as wide as long, broader behind, sides and posterior margin rounded, anterior margin nearly straight; notum with a few inconspicuous bristles, its surface closely transversely striate with anastomosing lines. Wings of fore pair nearly half as wide at middle as near base, the greatest sub-basal width (exclusive of scale), about one-ninth the length of wing; costal margin, anterior vein, and posterior vein with about 30, 26, and 16 spines, respectively.

Abdomen stout, pubescence dense, disposed on close, anastomosing striae; posterior margins of abdominal tergites 1-5 fringed at sides with numerous slender spines which are not at all coalesced at base to form plates or scales; tergites 6-8 and sternites 2-6 with their entire posterior margins similarly produced.

Measurements of holotype: Head, length 0.090 mm., width 0.144 mm.; prothorax, length 0.126 mm., width 0.206 mm.; prothorax, width 0.269 mm.; fore-wing, length 0.780 mm., width near base 0.084 mm.; width at middle 0.045 mm.; abdomen, width 0.319 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length in microns	20	35	61	44	32	29	14	15	14
Width in microns	28	25	22	21	18	15	12	10	5

Total length of antenna, 0.264 mm.

Male (*macropterous*).—Length about .7 mm. Color and structure essentially as in female. Tergite of abdominal segment 9 with a pair of heavy, fingerlike, chitinous processes between the usual two pairs of long bristles behind middle.

Measurements of allotype: Head, length 0.076 mm., width 0.125 mm.; prothorax, length 0.102 mm., width (inclusive of coxae) 0.172 mm.; pterothorax, width 0.209 mm.; fore-wing, length 0.552 mm., width near base 0.072 mm., width at middle 0.039 mm.; abdomen, width 0.166 mm.

Antennal segments:	1	2	3	4	5	6	7	8	9
Length in microns	18	33	53	37	32	29	14	14	11
Width in microns	24	21	19	18	16	14	11	9	5

Total length of antenna, 0.241 mm.

Described from 49 females and 15 males, as follows:

Maryland: Plummer Island (type locality), May 23, 1915 (W. L. McAtee, L. O. Jackson, J. D. Hood), on flowers of wild grape, 10 females, 3 males; Great Falls, May 23, 1915 (W. L. McAtee, L. O. Jackson, J. D. Hood), on flowers of wild grape, *Smilax* and *Rhus toxicodendron*, 31 females, 8 males.

District of Columbia: Washington, June 6, 1915 (V. A. Lawrence and J. D. Hood), on flowers of wild grape, 7 females, 2 males.

Virginia: Great Falls, May 19, 1915 (L. O. Jackson), on flowers of wild grape, 1 female, 2 males.

The *types* are now in my collection.

The specimens here described are very uniform in most of the characters used in the differentiation of the species. Other individuals, particularly males, taken at the same time and possibly in company with them, exhibit variations in the proportionate lengths of the antennal segments, the sculpture of the pronotum, and the abdominal armature; but more material of these forms is needed before their proper status can be decided.

This species is allied by the simple, spinose fringe of the lateral, posterior margins of the abdominal tergites, to *minor, sericatus* and *analis*. The transversely striate pronotum separates it readily from *minor*, which was described from Panama; and *sericatus*, a Porto Rican species, differs radically in that the legs of the female are yellow and the body of the male orange yellow. Its affinities, then, are with *analis*, known only from Maryland. This is the only species of the genus with which it agrees in the male sex in having the ninth abdominal tergite produced in a pair of converging, fringe-like processes. In *analis*, however, the third antennal segment is very long, being about 3.6 times as long as its greatest width; the middle portion of the antenna, from segments 3-5, inclusive, is a very pale grayish yellow; and the mid and hind tibiae are annulate at both ends with pale yellow.

Additional Records of New Jersey Acarina.

By Harry B. Weiss, New Brunswick, New Jersey.

For a preliminary list of New Jersey mites, see Entomological News, Vol. xxvi, 149-151.

Linopodes antennaepes Banks. Fort Lee (Trans. Amer. Ent. Soc., Vol. xxi, p. 221). Common under pieces of wood, bark, etc., that have been on the ground for some time.

Bdella cardinalis Banks. Fort Lee. Under leaves, in moss, under rotten wood. (Trans. Amer. Ent. Soc., Vol. xxi, p. 219.)

Bdella marina Pack. New Jersey seashore. (Trans. Amer. Ent. Soc., Vol. xxi, p. 219.)

Anystis agilis Banks. Fort Lee, on grass, trees, bushes. (Trans. Amer. Ent. Soc., Vol. xxi, p. 211.)

Tetranychus mytilaspidis Riley. Occurs on citrus stock growing in greenhouses in New Jersey. H. B. Weiss.

Trombidium granulatum Banks. Fort Lee. (Canad. Ent., 1902, p. 171.)

Tetranobia clavispinis Bks. Pemberton, May 20, on unidentified grass in cranberry bog. H. B. Scammell.

Galumna octo-punctata Ewing. Pemberton, Feb. 21, under loose bark of catalpa. H. B. Scammell.

Galumna depressa Bks. Whitesbog, Sept. 27, on *Vaccinium corymbosum* (blueberry). H. K. Plank.

Galumna armipes Banks. Fort Lee. (Proc. Acad. Nat. Sci., Phila., 1906, p. 492.)

Galumna robusta Banks. Fort Lee. (Trans. Amer. Ent. Soc., Vol. xxii, p. 7.)

Oribatula pallida Banks. Fort Lee. (Proc. Acad. Nat. Sci., Phila., 1906, p. 494.)

Eremaeus pilosus Banks. Fort Lee. Common in crevices of the bark of trees. (Trans. Amer. Ent. Soc., Vol. xxii, p. 11.)

Liacarus nitidus Banks. Fort Lee. Common on ground under wood, bark, stones. (Trans. Amer. Ent. Soc., Vol. xxii, p. 10.)

Oribata minuta Banks. Fort Lee. Common in decaying animal substances; also occurs in moss, under bark on the ground. (Trans. Amer. Ent. Soc., Vol. xxii, p. 12.)

Oribatella signata Bks. Medford, May 29, on foliage of cranberry beneath the surface of the water. H. B. Scammell.

Oribatella formosa Bks. Pemberton, May 8, on laurel. H. B. Scammell.

Rhizoglyphus hyacinthi Boisd. Newark, October, injuring hyacinth bulbs. H. B. Weiss.

Eriophyes cephalanthi Cook. Riverton, July, August. Elizabeth,

Aug. 10. On *Cephalanthus occidentalis* (button bush). H. B. Weiss.

Eriophyes cornutus Banks. New Jersey. Causes silver sheen on peach leaves. (Proc. Wash. Ent. Soc., Vol. vii, p. 141.)

Eriophyes eucricotes Nalepa. Kingston, Elizabeth, Riverton, Rutherford, Springfield, on *Lycium barbatum* (matrimony vine). H. B. Weiss.

Eriophyes fraxini Garm. Springfield, July. Galls on ash leaves.

Eriophyes oleivorus Ashm. Occurs on lemons and oranges growing in greenhouses in New Jersey. H. B. Weiss.

Eriophyes rosea Schult. Plainfield, on sugar maple. Red frost gall of maple. H. B. Weiss.

Eriophyes tristriatus Nalepa. Elizabeth. Felt mite gall on walnut. H. B. W.

Eriophyes vitis Landois. Chester, Sept. 28. Felt mite gall on wild grape. H. B. Weiss.

Eriophyes sp. Trenton, Springfield, Riverton, August. On pearl bush (*Exochordia*). H. B. Weiss.

Eriophyes sp. Rutherford, on *Sambucus canadensis.* Margins of leaves involute.

Eriophyes sp. Rutherford. Brown warts on upper surface of alder leaves.

South Carolina Ants (Hym.).

By M. R. Smith and W. A. Morrison, Entomological Laboratory, Clemson Agricultural College, South Carolina.

The following represents a list of ants collected from various localities in South Carolina during the fall of 1915. Where no locality is given the species was collected in the vicinity of Clemson College. The identifications were made by Dr. W. M. Wheeler, to whom the writers are greatly indebted:

Subfamily Dorylinae.

Eciton opacithorax Emery.

Subfamily Myrmicinae.

Solenopsis geminata Fabr.—Marion.
Solenopsis pergandei Forel.
Solenopsis molesta Say—Marion.
Pheidole morrisi Forel.—Marion.
Pheidole dentata Mayr.—Marion.
Pheidole crassicornis Emery.
Pheidole vinelandica Forel.
Cremastogaster lineolata Say.
Cremastogaster lineolata Say, var. *lutescens* Emery.
Cremastogaster victima Smith.

Aphaenogaster treatae Forel.
Aphaenogaster lamellidens Mayr.
Aphaenogaster texana Roger, var. *carolinensis* Emery.
Pogonomyrmex badius Latr.
Leptothorax curvispinosus Mayr.
Trachymyrmex septentrionalis McCook.

Subfamily DOLICHODERINAE.

Dolichoderus (*Hypoclinea*) *mariae* Forel.
Dolichoderus (*Hypoclinea*) *taschenbergi* Mayr. var. *aterima* Whlr.
Dolichoderus (*Hypoclinea*) *plagiata* Mayr.
Dorymyrmex pyramicus Roger.
Dorymyrmex pyramicus Roger, var. *flavus* Pergande.
Dorymyrmex pyramicus Roger, var. *niger* Pergande—Marion.
Tapinoma sessile Say.
Iridomyrmex pruinosus Roger, var. *analis* André.
Iridomyrmex pruinosus Roger, var. *humilis* Mayr.—Charleston.

Subfamily CAMPONOTINAE.

Prenolepis imparis Say, var. *minuta* Emery.
Prenolepis imparis Say, var. *testacea* Emery.
Lasius niger Linn., var. *americanus* Emery.
Lasius (*Acanthomyops*) *claviger* Roger.
Lasius (*Acanthomyops*) *interjectus* Mayr.
Formica pallide-fulva Latr. subsp. *schaufussi* Mayr.
Formica fusca Linn., var. *subsericea* Emery.
Camponotus castaneus Lat., subsp. *americanus* Mayr.
Camponotus castaneus Latr.
Camponotus herculeanus Latr., subsp. *pennsylvanicus* DeGeer.
Camponotus fallax Nyl., var. *nearcticus* Emery.
Camponotus fallax Nyl., var. *decipiens* Emery.

The species here given were found attending *Aphis-maidiradicis,* the corn and cotton root louse, by Prof. W. A. Thomas of this Division.

Cremastogaster lineolata Say, var.
Dorymyrmex pyramicus Roger, var. *niger* Pergande.
Solenopsis molesta Say, var.
Solenopsis geminata Fabr.
Pheidole dentata Mayr.
Pheidole morrisi Forel.
Prenolepis sp. Emery.
Pheidole vinelandica Forel.

In this section *Prenolepis imparis* appears to be one of the most numerous and hardiest of ants, as it has been active all winter, though the winter here has not been severe.

Additions to the Coleoptera of Meriden, Connecticut.

By Harry L. Johnson, South Meriden, Conn.

In my first list of the Coleoptera of Connecticut published in the issue of Entomological News for July, 1915, I made the statement that it was my intention to add further species to this list as they came into my hands. Since I now have some 275 specimens which are additions to the list, together with several corrections, I think it is advisable to publish them.

I am greatly indebted to the following entomologists for the identification of many species and without whose help this list would have been necessarily incomplete and uncertain: Mr. A. B. Champlain and Mr. Charles Leng, of New York, have identified most of the Carabidae; Mr. Schwarz, of the National Museum, together with Mr. C. A. Frost, of Framingham, Mass., have determined the bulk of the material, while Mr. Fisher, of Washington, D. C., is responsible for most of the Cerambycid determinations; Mr. E. D. Harris, of New York, Mr. N. S. Easton, of Fall River, Mass., and Mr. W. E. Snyder, of Beaver Dam, Wis., have also helped in determinations of species, while Mr. Britton and Mr. Walden, of the Connecticut Agricultural Experiment Station, are largely responsible for most of the corrections to my former list.

A short description of collecting grounds in connection with this list is deemed necessary. To the northwest of South Meriden there lies a long, narrow valley enclosed by hills and cliffs which is traditionally known as "Oregon" by the inhabitants of the village. Through the center of this valley flows the Connecticut river, on its northern bank runs the track of the "Cannon Ball Express," while along the southern bank a road, known as the Cheshire or Oregon road, wends its way. Everything from sandy shores to deep woods and dense vegetation is found in this valley, thus affording a variety of collecting which is not easily imagined. My favorite collecting route is along the Oregon road for a couple of miles until I come to a bridge which takes me across the river, allowing me to make my return trip along the railroad track and thence home.

Black Pond is a large and very deep body of water, more

than half surrounded by high cliffs situated to the east of the city of Meriden. The fauna of this locality differs considerably from that surrounding my own home and almost always supplies new names for the list with each visit, an abandoned road through the hills to the north of this pond being one of my favorite collecting places.

Family CICINDELIDAE.

Cicindela hirticollis Say. Rare. Taken from June 7 to Aug. 6.

Family CARABIDAE.

Carabus limbatus Say. Rare. Taken in a trap made by sinking a glass jar containing some molasses into the ground so that the top was level with the ground. Dense woods were selected as best for the trap and a specimen of *C. limbatus* was secured in it on May 30.

Calosoma willcoxi Lec. Rare. Taken with *C. frigidum* while killing caterpillars. May 21-27.

Calosoma frigidum Kirby. Not common. Taken from May 27-June 12. All my specimens were captured while running along the fence on the Oregon road where they were busy killing and eating the caterpillars of *Malacosoma americana.* These worms fairly swarmed along the fence and every now and then would be seen an open spot where the Calosomas had broken their ranks and left the dead and wounded on the field.

Calosoma sycophanta Linn. Rare. 1 specimen May 14.

Scarites subterraneus Fab. Rare. 2 specimens on June 30 and July 7.

Schizogenius lineolatus Say. Very rare. Secured one on the 27th of May.

Bembidium contractum Say. Rare. Taken on July 9.

Tachys nanus Gyll. Common. Sept. 19-20.

Pterostichus adoxus Say. Not common. Taken under boards and stones on May 15.

Pterostichus sayi Brullé. Somewhat rare. Under boards from May 1 to July 7.

Pterostichus corvinus Dej. Several taken July 14 and 16.

Pterostichus mutus Say. Quite rare. Taken from April to September.

Amara exarata Dej. Seldom taken. Appears during August, September and October.

Amara apricarius Payk. Not common. Taken September first.

Dicaelus elongatus Bon. Rare. Occurs under damp boards and leaves. May to October.

Platynus sinuatus Dej. Found under stones from April 30 to Aug. 26.

Platynus excavatus Dej. Occurs near and under rocks in July.

Platynus octopunctatus Fab. Quite rare. Have taken but two specimens.

Platynus crenistriatus Lec. Not common. Found in moist localities from April 11 to Sept. 27.

Platynus rubripes Zimm. Very rare. 1 specimen Oct. 3.

Lebia grandis Hentz. 1 specimen taken in Wallingford, Conn., on July 27 by Mr. D. J. Caffrey.

Lebia atriventris Say. Fairly common from June to July.

Lebia fuscata Dej. Rare. May 31.

Dromius piceus Dej. Not common. Taken from March 20 to July 18.

Axinopalpus biplagiatus Dej. Not common. Found under moist bark of ash and oak from March 8-15.

Cymindis americana Dej. Rare. Taken in moist localities on Sept. 7.

Chlaenius aestivus Say. April 11-Sept. 20.

Chlaenius pennsylvanicus Say. April 29-July 7.

Lachnocrepis parallelus Say. Rare. 1 specimen July 13.

Oodes americanus Dej. 1 specimen June 2. Very rare.

Stenolophus conjunctus Say. Not common. March 3-May 14.

Tachycellus badiipennis Hald. Quite common from April 11 to 19.

Anisodactylus rusticus Dej. Common from April to August.

Anisodactylus nigerrimus Dej. Common. Found in wet localities under boards, stones and rubbish from April 20 to Sept. 14.

Anisodactylus sericeus Harr. Rare in my experience. 1 specimen May 24.

Family HALIPLIDAE.

Haliplus fasciatus Aubé. Not common. I have one taken on March 10 and another specimen taken in Hamden, Conn., by Mr. B. H. Walden on Oct. 24.

Haliplus ruficollis DeG. Rare. 1 specimen April 6.

Cnemidotus edentulus Lec. Common during March.

Family DYTISCIDAE.

Hydrocanthus iricolor ? Say. Rare. 1 specimen on April 10.

Laccophilus maculosus Germ. Rare. Taken in a small pond known as Little Hanover on April 5.

Laccophilus undatus ? Aubé. Common in Little Hanover during March and April.

Hydroporus americanus ? Aubé. Not common. July 18.

Copelatus glyphicus ? Say. Rare. Taken in sluggish pools on April 5.

Family Gyrinidae.

Dineutes emarginatus Say. Common. July 12.-Oct. 17.

Family Hydrophilidae.

Sphaeridium scarabaeoides Linn. Rare. 1 specimen from pasture May 2.

Cercyon nigricolle ? Say. Rare. 1 specimen May 13.

Family Staphylinidae.

Staphylinus maculosus Grav. Taken while flying. May 3-June 1.

Staphylinus cinnamopterus Grav. Sept. 27. Seldom taken.

Philonthus lomatus Er. 1 specimen July 6.

Stenus juno ? Fab. Very rare. 1 specimen May 15.

Platystethus americanus Er. Taken from under rubbish on July 10. Rare.

Triga picipennis Lec. Taken from beneath bark of maple on March 15. Rare.

Family Phalacridae.

Phalacrus penicillatus Say. April 20-July 14. Quite rare.

Olibrus apicalis. Common. Taken from flowers in May, June and July.

Family Coccinellidae.

Hippodamia glacialis Fab. Common on alfalfa from March 29-Aug. 31.

Brachyacantha 4-punctata Melsh. Rare. Occurs from June to September.

Family Erotylidae.

Languria gracilis Newm. Rare. Taken by sweeping. June 8-July 9.

Family Cucujidae.

Silvanus surinamensis Linn. Taken under bark on July 12. Not common.

Silvanus planatus ? Germ. Found under bark of elm on March 19.

Laemophlaeus fasciatus Melsh. Taken under moist bark of trees from April 20-May 25.

Laemophlaeus testaceus Fab. Not common. Found under wet bark of elm, March 28.

Laemophlaeus pusillus Sch. Very rare. 1 specimen August 1.

Family Cryptophagidae.

Telmatophilus americanus Lec. Common throughout the month of May.

Family Dermestidae.

Byturus unicolor Say. Not common. May 25.

Attagenus piceus Oliv. Quite common from June 2-July 4.

Anthrenus castaneae Melsh. Rare. 1 specimen by sweeping on June 30.

Anthrenus lepidus. Rare. Taken by sweeping in Oregon on July 2.

Family Histeridae.

Hister merdarius Hoffm. Very common.

Family Nitidulidae.

Stelidota geminata Say. 1 specimen taken July 16. Quite rare.

Family Latridiidae.

Stephostethus liratus ? Lec. Swept one specimen of this rare species from deep grass on July 16.

Melanophthalma cavicollis Mann. Rare. 1 specimen July 23.

Family Trogositidae.

Tenebrioides corticalis Melsh. Taken from under bark of elm, maple and oak from March 28-April 13. Very common.

Tenebrioides americana Kirby. Took one specimen under bark of maple on March 28.

Family Parnidae.

Psephenus lecontei Lec. Took one specimen July 11.

Elmis vittatus Melsh. Rare. 1 specimen by sweeping June 18.

Family Dascyllidae.

Anchytarsus bicolor Melsh. Rare. 1 specimen July 13.

Cyphon ruficollis Say. Not common. Swept from flowers of wild carrot and wild parsnip. May 31-July 6.

Cyphon obscurus Guer. Rare. Obtained by sweeping in boggy meadows.

Cyphon variabilis Thunb. Rare. May 7.

Family Elateridae.

Microrrhagus triangularis Say. Rare. 1 specimen July 13.

Oedostethus femoralis Lec. Rare. Taken by sweeping cat-tail June 19-July 3.

Monocrepidius aversus Lec. Very rare. Taken at light on window July 16.

Monocrepidius auritus Hbst. Taken by sweeping in May.

Elater miniipennis ? Lec. Rare. June 21-25.

Elater laesus ? Lec. Found in his home by Fred Kaiser of So. Meriden, on March 26.

Elater rubricus Say. Rare. Taken in June.

Elater obliquus ? Say. Rare. Swept from elm foliage near little Hanover from April 9-July 7.

Agriotes mancus Say. Not common. Taken by sweeping meadows from June 1-July 7.

Melanotus pertinax Say. Rare. 1 specimen May 14.

Limonius stigma Hbst. Very rare. 1 specimen April 16.

Limonius griseus ? Beauv. Common on meadow grass from May 21-June 9.

Oestodes tenuicollis Rand. Common. Taken from cat-tail June 2-20.

Sericosomus viridanus Say. Very rare. 1 specimen May 8.

Corymbites tessellatus Linn. Taken from bark of elm and other trees. May 3-16.

Corymbites cylindriformis Hbst. Common. Taken by sweeping in May.

Corymbites tarsalis Melsh. Very rare. Swept from foliage on April 29 and May 2.

Corymbites hamatus Say. Rare. Taken from foliage of elm on June 7.

Corymbites inflatus Say. Rare. May 21.

Hemicrepidius decoloratus Say. Rare. July 9-16.

Melanactes piceus DeG. Very rare. Taken from dead and dying trees July 7.

Family Buprestidae.

Dicerca pugionata Germ. Very rare. 1 specimen May 3.

Anthaxia viridifrons Lap. Taken in Wallingford from dead hickory on April 24, by D. J. Caffrey and also in New Haven on dead hickory by H. B. Kirk on May 10. Have never met with it in my locality.

Chrysobothris femorata Fab. Rare. Taken from June 19-July 7.

Chrysobothris 6-signata Say. May 9-July 28. Taken in New Haven by Mr. Walden also.

Eupristocerus cogitans Web. Rare. Beaten from blackberry bushes and oak from May 20-July 13.

Agrilus acutipennis Mann. Beaten from shrubbery. Rare.

Agrilus anxius Gory. Rare. Picked off from low shrubs.

Agrilus cephalicus Lec. Rare. Beaten from oak on July 6.

Agrilus arcuatus var. **coryli** Horn. Very rare. 1 specimen July 16.

Agrilus masculinus Horn. Rare. Obtained by beating from May 31-June 14.

Agrilus obsoletoguttatus. 2 specimens from No. Branford, Conn., collected on June 23 by B. H. Walden.

Family Lampyridae.

Calopteron terminale Say. Rare. Taken along fences and marshy places from August to September.

Pyropyga nigricans Say. Fairly common. Taken from flowers of meadow-sweet and wild carrot during the early part of July.

Photinus marginellus Lec. Common from June to August.

Telephorus nigritulus ? Lec. Very rare. Taken from meadow-sweet blossoms on July 13.

Telephorus rectus Melsh. Rare. 1 specimen June 19.

Trypherus latipennis Germ. 2 specimens taken on sandy shore of Little Hanover July 6-13.

Family MALACHIDAE.

Collops eximius Er. Rare. Swept from flowers of spicebush.

Collops 4-maculatus Fab. Quite common along fences and on cultivated land from March to July.

Anthocomus erichsoni Lec. Quite common on flower heads in July.

Attalus terminalis Er. Common. Occurs with *A. scincetus.*

Attalus scincetus Say. Taken on flowers of meadow-sweet June 7. Rare.

Family CLERIDAE.

Cymatodera bicolor Say. Rare. July 6.

Clerus rosmarus Say. Common. Taken by sweeping from April to July.

Hydnocera cyanescens Lec. Rare. June 25-July 7.

Hydnocera tabida Lec. Very rare. 1 specimen July 13.

Necrobia violacea Linn. Common. Occurs in numbers around skeletons of horses and cattle from April 8-May 18.

Family PTINIDAE.

Sitodrepa panicea Linn. 1 specimen taken by sweeping July 6.

Hadrobregmus carinatus Say. Rare. 1 specimen June 10.

Anobium notatum Say. Rare. Taken by sweeping on July 2.

Endecatomus rugosus Rand. Frequent in the sapwood of an aged elm.

Lyctus caniculatus. Rare. 1 specimen June 18.

Family CUPESIDAE.

Cupes concolor Westw. Rare. Beaten from oak on July 6.

Family CIOIDAE.

Cis fuscipes Mellie. Common under bark of trees in March.

Family LUCANIDAE.

Platycerus quercus Web. Quite rare. Taken flying April 29 and May 6.

Family SCARABAEIDAE.

Copris anaglypticus Say. Common. Found on roadsides and in pastures in June and July.

Onthophagus pennsylvanicus Harold. Rare. Taken by sweeping August 27.

Ataenius gracilis Melsh. Very rare. 2 specimens by sweeping on May 14.

Aphodius vittatus Say. Very rare. 1 specimen April 24.

Aphodius lividus Oliv. Rare. Taken by sweeping in April and June.

Aphodius inquinatus Hbst. Common. Taken on the wing during March and April.

Hoplia trifasciata Say. Common. Taken on wild cherry, etc.

Hoplia modesta Hald. Rare. Taken from low shrubs during the early part of July.

Serica trociformis Burm. Very rare. 1 specimen July 12.

Diplotaxis atlantis Lec. Not common. Taken from poles at light in May and June.

Lachnosterna tristis Fab. Taken at light in April and May. Very rare.

Lachnosterna gracilis Burm. Taken at light in July and August.

Anomala oblivia Horn. Common. Occurs on the blossoms of wild cherry in the spring.

Ligyrus gibbosus DeG. Taken at light in May. Rare.

Family CERAMBYCIDAE.

Elaphidion villosum Fab. Rare. Taken at light.

Elaphidion unicolor Rand. Taken at light July 18. Very rare.

Purpuricenus humeralis Fab. Very rare. 2 specimens taken on wild parsnip July 13.

Clytanthus ruricola Oliv. Occasionally found on wild carrot in May and June.

Cyrtophorus verrucosus Oliv. Rare. Taken on meadow-sweet and wild carrot April 24-July 9.

Anthophilax malachiticus Hald. Taken in Oregon by my sister on June 9th. Found on the ground at the edge of a small brook.

Acmaeops directa Newm. Fairly common on the blossoms of wild carrot. The specimens I have taken here vary considerably from the type in having the thorax a dark brown or nearly black in some cases.

Arhopalus fulminans Fab. Quite rare in my experience. Mrs. Deming, of Middletown, has taken it in considerable numbers from wood-piles and in wood-sheds.

Typocerus acuticauda Casey. Quite common on wild carrot and parsnip from June 26-July 9. Occurs earlier than *T. velutinus*.

Leptura proxima Say. Very rare. 1 specimen July 12.

Leptura mutabilis Newm. Rare. Taken from wild carrot in May and June.

Leptura mutabilis var. **luridipennis.** Very rare. Have taken but one specimen of this.

Leptostylus macula Say. Quite rare. Taken from July 1-24.

Liopus alpha Say. Not common. Beaten from dead oak June 15-July 4.

Oncideres cingulata Say. Rare. Taken on electric light pole on August 20.

Saperda obliqua Say. Very rare. My single specimen flew into my study room on the night of July 4th and lit on a pinned

specimen in one of my cases, where it clung so tightly that the mounted specimen was ruined before I could disengage it.

Oberea tripunctata Swed. Rare. Taken by sweeping deep grass June 14-July 6.

Tetraopes tetraophthalmus Forst. Common on milkweed in June and July.

Family CHRYSOMELIDAE.

Donacia aequalis Say. Common on low foliage at edge of pond from April to July.

Donacia rufa Say. Not common. Found on skunk's cabbage in May and June.

Orsodachna atra Ahr. A common species of great variation. Occurs in the following forms: Yellow thorax, yellow legs and black elytra; black thorax, yellow legs and black elytra; yellow thorax, brown legs and brown elytra; black thorax with dark brown legs and black- and yellow-striped elytra, and a small uniform brownish form. April 14-May 29.

Zeugophora scutellaris Suffr. Very rare in my vicinity. 1 specimen July 13.

Lema brunnicollis Lec. Rare. Taken in the early part of July.

Lema trilineata Oliv. Rare. Occurs from May till August.

Babia 4-guttata Oliv. Rare. Taken from flowers of meadow-sweet July 2-6.

Chlamys cribripennis Lec. Rare. Taken by sweeping from April 15-August 21.

Bassareus formosus Melsh. Rare. Taken on July 14.

Bassareus mammifer Newm. Rare. Taken during July also.

Bassareus lituratus Fab. Taken sparingly in June.

Cryptocephalus 4-maculatus Say. Common. Taken from leaves of blackberry in May and June.

Cryptocephalus ornatus Fab. Fairly common. Taken from meadow-sweet flowers.

Cryptocephalus cinctipennis Rand. Rare. Also taken from meadow-sweet.

Pachybrachys viduatus Fab. Rare. Taken from meadow-sweet on July 6.

Pachybrachys roboris. Very rare. 1 specimen July 9.

Monachus saponatus Fab. Common. Taken by sweeping marshy meadow grass in July.

Xanthonia villosula Melsh. Very rare. 1 specimen July 6.

Adoxus vitis Linn. My single specimen is a product of the sweeping method. Very rare in this vicinity.

Tymnes tricolor Fab. Very rare. 2 specimens on July 4 and 7.

Chrysodina globosa Say. Rare. By sweeping swampy land in July.

Colaspis tristis Oliv. Common. Taken from low shrubs near Black Pond from June 25-July 7.
Prasocuris varipes Lec. Obtained by sweeping in May.
Chrysomela lunata Fab. Rare. May 21-Aug. 13.
Chrysomela spiraeae Say. Rare. Have taken one specimen of this species on sumach.
Phyllodecta vulgatissima Linn. Fairly common from June 7-Sept. 5.
Cerotoma caminea Fab. Taken crawling along the ground in April.
Galeruca decora Say. Common from May to July.
Monoxia puncticollis Say. Taken by sweeping, but very rare. July 7-13.
Hypolampsis pilosa Ill. Very rare. 1 specimen July 13.
Oedionychis vians Ill. Rare. 2 specimens taken in April and June.
Oedionychis thoracica Fab. Common from April to September.
Oedionychis fimbriata ? Forst. Very rare. 2 specimens taken on April 25 and June 1.
Disonycha xanthomelina Dalm. Taken by sweeping. 1 specimen Sept. 22.
Disonycha rufa Ill. 1 specimen April 27. Very rare.
Haltica chalybea Ill. Rare. Taken from April 29-May 2.
Haltica marevagans Horn. Rare. Taken from low shrubs on July 12.
Crepidodera helxines Linn. Taken by sweeping. Common from May to July.
Crepidodera rufipes Linn. 1 specimen May 25.
Orthaltica copalina Fab. Taken from poison ivy on June 19. Common.
Longitarsus melanurus Melsh. Rare. 1 specimen July 9.
Phyllotreta sinuata Steph. Common. Taken on plants allied to the fennel family in June and July.
Phyllotreta bipustulata Fab. 1 specimen taken by sweeping. Very rare.
Chaetocnema minuta Melsh. Rare. Taken from May 3-10.
Chaetocnema subcylindrica ? Lec. Common. April 27-May 3. Swept from poison-ivy.
Dibolia aerea ? Melsh. Quite common in May.
Microrhopala xerene Newm. Rare. 1 specimen July 2.
Odontota horni Smith. Rare. 1 specimen June 14.
Stenispa metallica Fab. 3 specimens taken by sweeping from May 24-July 14.

Family BRUCHIDAE.

Bruchus alboscutellatus Horn. Rare. Taken by sweeping in July.

Family TENEBRIONIDAE.

Xylopinus rufipes Say. Taken on electric light pole on night of July 18. Rare.

Tenebrio obscurus Fab. Fairly common from June 2-July 20.

Uloma impressa ? Melsh. 1 specimen on May 14.

Paratenetus punctatus Sol. 1 specimen July 12.

Platydema excavatum Say. Occurs plentifully in company with *Hoplocephala bicornis* Oliv. under bark of fallen trees in March and April.

Platydema subcostatum Lap. Very rare. 1 specimen July 18.

Family CISTELIDAE.

Capnochroa fuliginosa Melsh. Rare. Taken at light clinging to pole on July 10.

Androchirus erythropus Kirby. Taken at light on pole in Hemlock Grove on July 18.

Family MELANDRYIDAE.

Penthe obliquata Fab. Very rare. 2 specimens dug from under rotten stump.

Synchroa punctata Newm. 1 specimen at light on July 19.

Family OEDEMERIDAE.

Nacerdes melanura Linn. Very rare. 1 specimen taken from the post office building in Meriden on June 17.

Family MORDELLIDAE.

Anaspis rufa Say. Rare. Took one specimen June 19.

Mordella scutellaris Fab. Taken by sweeping. Fairly common from June to July.

Mordellistena pustulata Melsh. Very rare. Taken by sweeping on July 2.

Mordellistena bihamata Melsh. Very rare. Swept from flowers on July 13.

Family ANTHICIDAE.

Corphyra collaris Say. Taken with *Orsodachna atra* on willow catkins in May. Very common.

Macratria confusa Lec. Very rare. Taken in June and July.

Family MELOIDAE.

Meloe angusticollis ? Say. Not common. Taken crawling over the grass.

Macrobasis unicolor Kirby. Very common.

Epicauta vittata Fab. Rare. 1 specimen June 7.

Family RHIPIPHORIDAE.

Rhipiphorus dimidiatus ? Fab. Taken from heads of white daisy in July. Rare.

Family Otiorhynchidae.

Hormorus undulatus Uhler. Rare. 1 specimen June 7.
Otiorhynchus ovatus Linn. Taken by my sister in late spring.

Family Curculionidae.

Sitones hispidulus Germ. Common in meadows from May 3-24.
Sitones flavescens Marsh. 3 specimens taken from July 7-20.
Apion nigrum Hbst. Common. Obtained by sweeping. May 16-July 13.
Phytonomus punctatus Fab. Rare in my vicinity.
Listronotus caudatus ? Say. 1 specimen on August 9. Very rare.
Hylobius pales Hbst. Rare. 1 specimen May 10.
Onychylis nigrirostris Boh. 1 specimen May 18. Rare.
Bagous transversus Lec. Rare. Taken by sweeping in May and July.
Magdalis armicollis Say. Rare. Immature specimens are of a light reddish color throughout. Found during May and June.
Anthonomus scutellatus Gyll. Rare. Another result of using the sweeping net.
Anthonomus sycophanta Walsh. Quite rare. Taken by sweeping in Oregon in May.
Elleschus bipunctatus Linn. Fairly common. Evidently an introduced species.
Tychius picirostris. Common from May 24-June 8.
Conotrachelus nenuphar Hbst. Rare. Found in deep grass. This beetle imitates bird droppings to perfection and thus escapes the notice of many people.
Gymnetron teter Fab. Common. Taken from mullein in June and July.
Tyloderma aerum Say. Rare. Taken by sweeping in May.
Cryptorhynchus parochus Hbst. Rare. Taken by searching low shrubbery from April 26-June 23. Have one specimen taken by Mr. H. B. Kirk in No. Branford on June 23.
Cryptorhynchus lapathi Linn. Not common. May 21-Sept. 9.
Cylindrocopturus binotatus Lec. 1 specimen collected in New Haven on April 28 by Mr. Walden.
Ceuthorhynchus cyanipennis. Rare. Taken by sweeping April 22-May 24.
Ceuthorhynchus septentrionalis Gyll. Rare. Taken by sweeping flowers in May and June.
Rhinoncus pyrrhopus Lec. Common. Taken by sweeping in May and June.
Baris scolopacea. Rare. Taken by sweeping on July 16.
Madarellus undulatus Say. Very rare. 1 specimen April 22.

Family CALANDRIDAE.

Cossonus bohemanni ? Horn. Rare. Taken from under bark on March 23.

Cossonus impressifrons Boh. Common. Under bark in July.

Family SCOLYTIDAE.

Xyleborus caelatus Eich. 1 specimen taken in Stafford, Conn., by Dr. Britton on Aug. 24.

Family ANTHRIBIDAE.

Hormiscus saltator Lec. Very rare. 1 specimen July 13.

Cratoparis lunatus Fab. Found under bark of oak in the spring.

In connection with the preceding list it is necessary at this time to make several corrections to my first list published in Entomological News for July, 1915. The following names should be erased from the list as incorrectly determined:

Carabidae: *Ardistomis viridis* Say, *Pterostichus pennsylvanicus* Lec., *Amara pallipes* Kirby, *Platynus decens* Say, *Lebia collaris* Dej., *Chlaenius diffinis* Chd.

Gyrinidae: *Dineutes horni.*

Staphylinidae: *Quedius fulgidus* Fab., *Dianous* sp.

Dermestidae: *Dermestes marmoratus* Say, *Anthrenus thoracicus* Melsh.

Elateridae: *Elater hepaticus* Say, *Monocrepidius lividus* DeG.

Scarabaeidae: *Trox unistriatus* Beauv., *Hoplia trivialis* Harold, *Serica intermixta* Blatch., *Lachnosterna gibbosa* Burm., *Cremastochilus harrisii* Kirby.

Cerambycidae: *Neoclytus capraea* Say, *Acanthoderes quadrigibbus* Say.

Chrysomelidae: *Donacia pusilla* Say, *Galeruca notata* Fab.

Tenebrionidae: *Xylopinus aenescens* Lec.

Meloidae: *Epicauta cinerea* Forst.

The following corrections in synonymy are also advisable:

Cicindela vulgaris Say. should be *Cicindela tranquebarica* Herbst.

Coccinella sanguinea Linn. should be *Cycloneda munda* Say. according to Mr. Britton, of the Conn. Agricultural Exp. Station at New Haven.

Copris carolina Linn. should be *Pinotus carolinus.*

Leptura zebra Oliv. should be *Leptura nitens* Forst.

Toxotus vittiger Rand. is now listed as *Toxotus trivittatus.*

Galeruca sagittariae Gyll. is now listed as *G. nymphaeae* Linn.

Hoplocephala bicornis Oliv. is now *Arrhenoplita bicornis* Oliv.

Connecticut Coleoptera.

By Annie Trumbull Slosson, New York City.

I have read with interest the list of Connecticut beetles by Mr. Harry L. Johnson published in the News of July, 1915. I find that I can add a few names to that list and append them herewith. All were taken near Hartford, my old home.

Carabidae.

Notiophilus aeneus *Hbst.*
Pterostichus sayi *Brullé.*
Dicaelus elongatus *Bon.*
Chlaenius aestivus *Say.*
Chlaenius pennsylvanicus *Say.*
Anisodactylus verticalis *Say.*

Gyrinidae.

Dineutes vittatus *Germ.*
Dineutes emarginatus *Say.*

Staphylinidae.

Staphylinus cinnamopterus *Grav.*
Philonthus aeneus *Rossi.*

Nitidulidae.

Epuraea rufa *Say.*
Stelidota geminata *Say.*

Trogositidae.

Thymalus fulgidus *Er.*
Bactridium cavicolle *Horn.*

Elateridae.

Betarmon bigeminatus *Rand.*
Limonius plebejus *Say.*

Cerambycidae.

Cyllene pictus *Drury.*

Chrysomelidae.

Diabrotica lemniscata *Lec.*

Tenebrionidae.

Platydema excavatum *Say.*
Platydema ruficorne *Sturm.*
Platydema laevipes *Hald.*

Meloidae.

Meloe angusticollis *Say.*
Epicauta vittata *Fab.*

Otiorhynchidae.

Otiorhynchus ovatus *Linn.*

Curculionidae.

Pseudobaris nigrinus *Say.*

Dinner to Professor Herbert Osborn.

A dinner in honor of Prof. Herbert Osborn was tendered him by about forty of his former students on Wednesday evening, December 29, 1915, at the Chittenden Hotel, Columbus, Ohio. The occasion was highly enjoyed as a home-coming by both Professor and Mrs. Osborn. Some verses entitled "Herbert Osborn, an Appreciation," composed by J. G. Sanders, and followed by the signatures of other students, illuminated in black, red and gold on vellum, was presented to the guest of honor. The sixth (last) stanza read:

"Fond memories of you, kind sir, we hold
Most dear in summer's heat and winter's cold;
We pledge our love, our faith, in ease or stress:
Good friend—your best reward is our success."

New Thysanoptera from Florida—III.

By J. R. WATSON, Gainesville, Fla.

(Plates V and VI)

Aeolothrips floridensis n. sp. (Plate V, figs. 1-3).

♀.—*Measurements.*—Total body length 1.7 mm.; head, length 0.17 mm., width 0.2 mm.; prothorax, length 0.16 mm., width 0.25 mm.; mesothorax, width 0.25 mm.; metathorax, width 0.37 mm.; abdomen, width, 0.4 mm.

Antennae: Segment 1, 32; 2, 53; 3, 129; 4, 96; 5, 70; 6, 13; 7, 12; 8, 15; 9, 12 microns; total, 0.4 mm.

Color, dark brown with much red pigmentation, which is particularly marked on the lighter pterothorax and base of abdomen.

Head about one-fifth longer than wide, elevated a little between the antennae; cheeks slightly arched, diverging very slightly posteriorly; there are no prominent spines but minute papillae with short hairs occur along the cheeks; dorsal surface with minute cross striations.

Eyes prominent, black, with large facets, sparsely pilose, oval in dorsal aspect but greatly elongated on the ventral surface, where they end in rather a sharp point. *Ocelli* present, approximate, the posterior pair not touching the margins of the eyes.

Mouth cone acute, reaching beyond the middle of the prothorax.

Antennae nine-segmented, segments 1 and 2 concolorous with the head, segment 3 and the basal half of 4 yellow, the very tip of 3 and the remainder brown. Sense areas on segment 3 greatly elongated. Spines rather numerous but short. Those on segments 2 and 3 dark, the others colorless. Two on the dorsal surface of the second segment near the anterior end are a little stouter and longer than the others, while between and a little anterior to their bases is a dark, round papilla.

Prothorax more than half again as wide as long, a little shorter than the head; sides quite markedly bulging and diverging posteriorly, deeply notched in the middle; without prominent spines.

Mesothorax much wider than the prothorax, markedly rounded at the anterior angles, without spines.

Metathorax narrower than the mesothorax, sides moderately convex, converging posteriorly, no spines.

Legs rather long, concolorous with the body (i. e., reddish brown) except the tarsi which are light brown, without the reddish pigmentation; fore femora but slightly enlarged; tibiae with a short spine at the anterior end. Legs sparsely furnished with short but rather thick curved hairs.

Wings moderately long, membrane of the fore pair reaching to about

the end of the abdomen. Near the end of the posterior border the wings are densely margined with long brown hairs, none on the basal portion. On the anterior margin the hairs are rather short and sparse. The posterior half of the wing is shaded a decided but not very dark brown and is clothed with short hairs, as is also the hind wing; the second longitudinal vein has heavy dark brown spines. Hind wings nearly as long as the fore, no brown longitudinal shading as in the fore pair; on the anterior margin the hairs are rather short and dense.

Abdomen spindle-shaped, abruptly narrowing at the seventh segment. One or two short, weak, curved, inconspicuous spines on the lateral margin of each segment. On the eighth and ninth there are eight very long stiff spines; two much shorter ones at the end of the abdomen.

Described from a single female taken on oats with *Aeolothrips bicolor* at Gainesville, Florida, April 26, 1914.

Type in the National Museum.

*Key to North American species of Aeolothrips.**

1. Fore wings with dark cross bands.
   - *a.* Wings with cross veins.
     - *b.* Last 4 segments of antennae much longer than the 5th; abdominal segments 2 and 3 and the posterior half of 1 white or yellow .....*Ae. bicolor,* Hinds.
     - *bb.* Last four segments of antennae little if any longer than the fifth.
       - *c.* Prothorax and segments 2 and 3 of the abdomen white .....*Ae. albocinctus,* Haliday.
       - *cc.* Without white bands.....*Ae. fasciatus,* Linn.
   - *aa.* Wings without cross veins. Last four segments of antennae about 1.25 times as long as the fifth.....*Ae. nasturtii,* Jones†
2. Fore wing with a dark longitudinal band along posterior margin.
   - *a.* With normal veins in the anterior wings.
     - *b.* Antennal segment 3 about as long as 1 and 2 together; segment 4 brown .....*Ae. kuwanaii,* Moulton
     - *bb.* Antennal segment 3 about 1.5 as long as 1 and 2 together; basal half of segment 4 yellow, *Ae. floridensis,* n. sp.
   - *aa.* Anterior wings without veins .....*Ae. longiceps,* Crawford

* Modified from that of Moulton, 1911, U. S. Bur. Ent., Tech. Ser. No. 21.

† Hood, in Ent. News, xxvi, p. 162, expresses the opinion that this species is the male of *Ae. kuwanaii.*

Anthothrips floridensis n. sp. (Plate VI, figs. 10 to 12).

♀.—*Measurements.*—Length 1.3 mm. (1.1 to 1.5). Head, length 0.19 mm., width 0.18 mm.; prothorax, length 0.16 mm., width 0.26 mm.; mesothorax, width 0.29 mm.; abdomen, width 0.29 mm.; tube, length 0.107 mm., width at the base 0.049 mm., at the end 0.035 mm.; antennae, segment 1, 20.4; 2, 41; 3, 40; 4, 49; 5, 41; 6, 36; 7, 37; 8, 26 microns; total length 0.276 mm.

Color dark brown, fore tarsi and tibiae yellow, mid- and hind-tarsi light brown; segments 1 and 2 of antennae dark brown; 3, yellow; base of 4 and 5 yellowish brown; tips of 4 and 5 light brown; 6, light brown; 7 and 8 dark brown. Eyes reddish brown.

Head a little longer than broad; cheeks slightly arched, without warts, posterior portion of dorsal surface quite noticeably transversely striated. Ocelli large and well separated, posterior pair placed about opposite the middle of the eyes whose margins they nearly touch, dark brown; postocular bristles well developed, sharp-pointed. Mouth cone shorter than its breadth at the base and very rounded at the tip, reaching to about three-fourths the length of the prothorax.

Antennae eight-segmented, not as long as the width of the mesothorax, segments short and stout, the fourth a little thicker and considerably longer than the others, sense cones short.

Prothorax considerably wider than long when measured to outer angles of the coxae, somewhat triangular in outline, sides converging anteriorly, a spine on each posterior angle.

Mesothorax somewhat wider than prothorax, sides nearly parallel but somewhat narrowed in the middle.

Legs short, fore femora but slightly thickened.

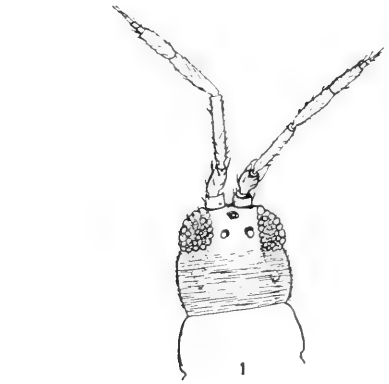
Wings well developed, membrane reaching nearly or quite to the end of the tube in most individuals; decidedly constricted in the middle; hairs of the fringe long and nearly equal, in a single row except on the hind border of the fore wing where there are eight hairs of a second row.

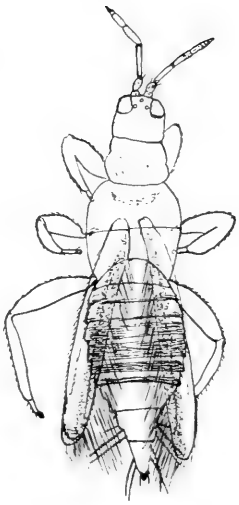
Abdomen about as wide as mesothorax, usually widest at the base from which it slopes to the tip, gradually at first and then more abruptly. Tube rather small and short, tapering but little, six terminal spines longer than the tube, and a number of shorter ones. Spines on the remainder of the abdomen weak and inconspicuous.

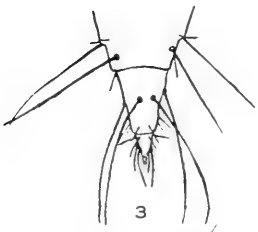
Described from nine specimens, Gainesville, Florida, April 22, 1914. Food plant maize. Male not seen.

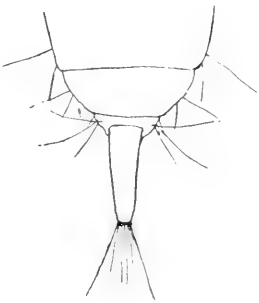
The *type* is in the American Museum of Natural History, cotypes in the author's collection.

This species differs from *A. niger* (Osborn) in its smaller size, the presence of the post-ocular bristles, the relative

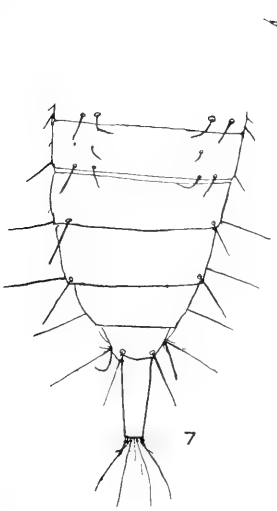


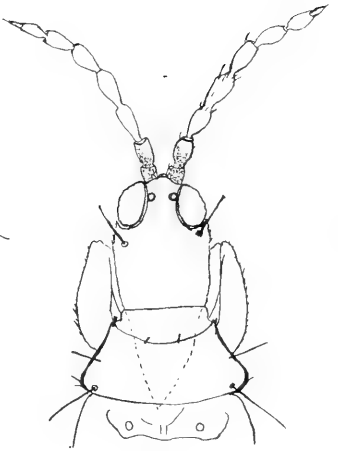


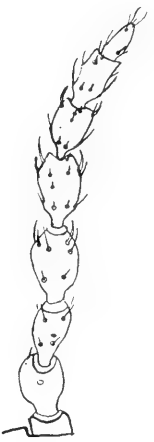


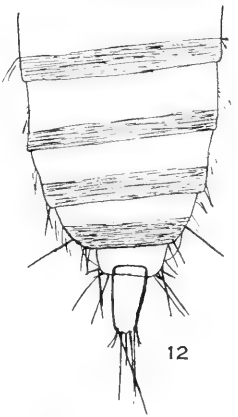


1-3, AEOLOTHRIPS FLORIDENSIS;
4-6, LIOTHRIPS CARYAE FLORIDENSIS—WATSON.









7-9 LIOTHRIPS FLAVOANTENNIS;
10-12 ANTHOTHRIPS FLORIDENSIS—WATSON.

lengths of the antennal segments, especially the greater length of the fourth, in the relative dimensions of prothorax, head and abdomen, in the shape of the abdomen, and in the long hairs on the tube. From *A. variabilis* Crawford it differs in its smaller size, in the sharp tips of the post-ocular bristles, the longer mouth cone, the shorter antennae, relative size of head and prothorax, shape of pterothorax, the weak spines of the abdomen, and the relative lengths of the antennal segments, especially the fifth.

The following key (modified from that of P. R. Jones, U. S. Bur. Ent., Tech. Series, Bull. No. 23, pt. I, 1912) will enable one to separate the North American species of *Anthothrips.*

1. Postocular spines wanting; antennae almost uniformly brown except segment 3 and base of 4, which are light brown....*A. niger,* Osborn
2. Postocular spines well developed.
   a. Postocular spines and most of those on the postero-lateral margin of abdominal segments knobbed.....*A. flavipes,* Jones
   aa. Postocular and abdominal spines not knobbed.
      b. Apex of femora with a small, anteriorly directed, triangular tooth within; antennae uniformly brownish black .....*A. nigricornis,* Jones
      bb. Apex of femora without such tooth.
         c. Segments 3 to 6 of antennae bright yellow, abdominal spines (except those of the tube) slender and rather faint..*A. verbasci,* Osborn
         cc. Segments 3 to 6 of antennae light brown, abdominal spines stout and conspicuous, *A. variabilis,* Crawford
         ccc. Only segment 3 of antennae wholly bright yellow; abdominal spines short and inconspicuous .....*A. floridensis,* n. sp.

Liothrips flavoantennis n. sp. (Plate VI, figs. 7-9).

♀.—*Measurements.*—Total body length, 1.8 mm. Head, length 0.24 mm., width 0.185 mm.; prothorax, length 0.14 mm., width 0.31 mm.; mesothorax, width 0.365 mm.; abdomen, width 0.41 mm.; tube, length 0.19 mm., width at base 0.072 mm., at the end 0.038 mm. Antennae: Segment 1, 27; 2, 56; 3, 81; 4, 74.5; 5, 63; 6, 54; 7, 52; 8, 33 microns; total length 0.4 mm.

Color uniformly dark brown except the antennae. *Head* nearly one and one-third times as long as wide, sides slightly arched, widest a short distance behind the eyes, converging slightly behind; warts on the cheeks small and with small short spines, surface of the head showing rather faint cross striations, postocular spines long, stout, knobbed

at the end, dark, but the knob white as are most of the spines on the body. Eyes dark in color, rather large. Ocelli rather large. Posterior pair placed near the margin of the eyes and anterior to the middle; anterior pair directed forward.

Mouth cone very long and sharp-pointed, reaching fully to (and sometimes beyond) the posterior border of the prothorax.

Antennae one and two-thirds times as long as the head. Segment 1 dark brown, only a little lighter than the head; segment 2 brownish yellow, darker at the base; segments 2 to 7 bright yellow; 8 brownish yellow; segment 3 averaging only slightly shorter than 1 and 2 together, in some individuals longer, in others shorter; sense cones and spines about one-third the length of segment 3, very pale in color, almost white.

Prothorax subtriangular in outline, seven-twelfths as long as head and over twice as broad as long, measuring from outer angles of coxae. A very long, stout, knobbed spine on each posterior angle; a short, thick one on each anterior angle, and between them one intermediate in length; a pair along the anterior border.

Mesothorax one-fifth broader than prothorax. *Legs* rather long and slender, concolorous with the body except the tarsi which are a lighter brown. The fore tarsi often darker than the meso- and metatarsi; fore femora considerably less than half as wide as the head, sparsely provided with short, very stiff, almost spine-like hairs; these are longer and less stiff on the other femora and on the tibiae and tarsi.

Wings well developed, not at all constricted in the middle; hairs long and copious, from eight to thirteen (usually ten) near the end forming a second row; membrane brownish towards the base where it is provided with a short vein which bears three very heavy, long, knobbed spines.

Abdomen with rather convex sides, at the widest portion (which is about the fourth segment) one-ninth wider than prothorax. Posterior angles from segments 4 to 9 with spines; those on segments 6 to 9 long and heavy. Tube rather narrow, tapering to nearly half its diameter at base; length nearly three times the width at the base; terminal hairs shorter than the tube.

Described from nine females taken from wild grape vine, April 23, 1914, at Gainesville, Florida. Males unknown.

Type in the collection of the National Museum.

Liothrips caryae floridensis n. subsp. (Plate V, figs. 4-6).

♀.—*Measurements.*—Total body length 2.6 mm. Head, length 0.275 mm., width 0.24 mm.; prothorax, length 0.25 mm., width 0.39 mm.; mesothorax, width 0.51 mm.; metathorax, width 0.49 mm.; abdomen, greatest width 0.53 mm; tube, length 0.228 mm., width at base 0.09 mm., at the end 0.046 mm.; antennae, total length 0.5 mm.; segment 1, 34; 2, 61; 3, 94; 4, 84; 5, 75; 6, 68; 7, 61; 8, 34 microns.

Color brown to brownish yellow with heavy red pigmentation on thorax and abdomen.

Head rather large; cheeks somewhat convex and slightly converging posteriorly, covered with numerous minute serrations, each of which carries a small hair; vertex with strong cross-striations; postocular spines prominent, about as long as the eye, with sharp-pointed tips. Eyes bright orange color by reflected light, facets rather small and numerous, not pilose. Ocelli rather prominent, orange yellow; posterior pair situated well forward, anterior to the middle of the eyes, the margins of which they approximate but do not touch; anterior ocellus directed forward.

Mouth cone rather long but rounded at the tip, reaching seven-tenths of the distance across the prothorax.

Antennae somewhat less than twice as long as the head; segments 1 and 2 light grayish brown, 3 yellow, 4 to 8 yellowish brown, becoming darker toward the tip, 4 frequently brown only at the base, and the base of 5 often yellow. Spines and sense cones light-colored and inconspicuous.

Prothorax triangular in outline; nearly as long as the head but considerably narrower than the mesothorax. One strong spine on the dorsal part of each lateral margin projects backward, and a smaller one on the ventral part projects forward. There is a short spine near the anterior angle. Pterothorax without prominent spines. Legs rather long, concolorous with the body; fore tibiae somewhat enlarged.

Wings scarcely reaching .75 the length of the abdomen; membrane clear, bordered with long hairs, 17 to 22 hairs of a double line interlocated on the posterior border of the fore pair.

Abdomen long, widest at the base, whence it tapers gradually to the sixth segment and then more abruptly to the tube; hairs short, pale and inconspicuous, especially on segments 1 to 4. Tube long and narrow.

♂.—Very similar but usually smaller, averaging less than 2 mm. in length.

Larva.—Ground color pale yellow. This extends over all parts of the legs and antennae. The thorax and abdomen are so liberally provided with a blood red pigment as to cause the insect to appear deep red to the unaided eye. There are no white or black bands on the thorax as described for *L. caryae* by Fitch.

Described from numerous individuals taken from deserted galls of *Phylloxera* on hickory leaves, Gainesville, Florida. Both young and adults feed on the succulent walls of the galls which ultimately become hard and black. The larvae are very common in these galls from late April to June, but the adults are more difficult to find and have not been collected before

the middle of May. The entire life history of this generation of these insects is spent in these galls instead of their being used only as a place of protection during metamorphosis as was surmised to be the case with *L. caryae* by J. D. Hood (Proc. Biol. Soc. Wash., XXVII, p. 160).

The *type* will be placed in the U. S. National Museum.

Differs from *Liothrips caryae* (Fitch) in color (including that of the antennal joints), size, length of wings and the longer prothorax; the larva is quite different in color. It should perhaps be given specific rank, but its characters and its ecological relationships are in many ways so similar to those of *L. caryae* that it seems best to give it only subspecific rank.

The following key modified from that of Moulton (1911) will enable one to separate the North American species of *Liothrips.*

1. Head about 1.3 (or less) times as long as wide.
   - *a.* Fore wings brownish at the extreme base; tube .8 or .9 as long as head.
     - *b.* Head 1.15 times as long as wide; marginal abdominal spines yellowish; usually only segment 3 of antennae all clear yellow.
       - *c.* Black; postocular bristles blunt, .6 times as long as eye; fore wing with about 14 hairs of a second row; antennal segments 5 and 6 mostly blackish brown to black,
         L. ocellatus, Hood
       - *cc.* Postocular bristles sharp-pointed and almost as long as eye; fore wing with 17-22 interlocated hairs; antennal segment 5 yellowish.
         - *d.* Color brown or black; length about 2 mm.; wings long; prothorax .6 times as long as head; antennal segments 6-8 blackish brown,
           L. caryae (Fitch)
         - *dd.* Color brown to yellow with much deep red pigmentation; length about 2.6 mm.; wings reaching only about .75 the length of the abdomen; prothorax .9 times as long as head; antennal segments 6-8 yellowish brown,
           L. caryae floridensis, n. sub. sp.

bb. Head 1.3 times as long as wide; color dark brown, spines light brown; antennal segments 3-7 and apex of 2 clear yellow.....*L. flavoantennis,* n. sp.

aa. Fore wings nearly black in basal half; head about 1.3 times as long as wide; marginal abdominal spines nearly black; tube .6 times as long as head.....*L. umbripennis,* Hood

aaa. Fore wings brownish in basal half,

L. umbripennis mexicanus, Cr.

2. Head about 1.5 times as long as wide.

a. Antennae lemon yellow; spines on prothorax large and prominent; mid-laterals present, fully as long as anterior marginals; tube two-thirds as long as head.....*L. citricornis,* Hood

aa. Antennal segments 1 and 2 concolorous with the head; spines on prothorax not prominent; mid-laterals wanting.

b. Antennal segments 1 and 2 almost black, 3 light yellow to light brown, others brown; tube one-half as long as head.

c. Head converging anteriorly,

L. fasciculatus, Crawford

cc. Head distinctly converging posteriorly,

L. fasciculatus stenoceps, Crawford

bb. Antennae 1.25 times as long as head; segment 1 and base of 2 concolorous with the body, apical half of 2 and of 5 and 6 to 8 light brown, 3, 4 and base of 5 yellow; tube one-half as long as head,

L. maconnelli, Crawford

Explanation of Plates V and VI.

Plate V, figs. 1-3, *Aeolothrips floridensis* n. sp.

Figs. 4-6, *Liothrips caryae floridensis* n. subsp.

Plate VI, figs. 7-9, *Liothrips flavoantennis* n. sp.; 7, posterior portion of abdomen; 8, dorsal view of head and prothorax; 9, dorsal view of left antenna.

Figs. 10-12, *Anthothrips floridensis* n. sp.; 10, dorsal view of head and prothorax; 11, dorsal view of right antenna; 12, tip of abdomen.

Florida Entomological Society.

In *Science* for Feb. 4, 1916, we are advised that the Florida Entomological Society has recently been organized at Gainesville, Florida, with Prof. J. R. Watson, President; Mr. Wilmon Newell, Vice-President, and Mr. R. N. Wilson, Secretary-Treasurer. This is the first Entomological Society organized in the Southern States. We wish it a long and useful life.

ENTOMOLOGICAL NEWS.

PHILADELPHIA, PA., MARCH, 1916.

Discontinue the Fahrenheit Thermometric Scale.

In the House of Representatives, on December 6, 1915, Mr. Albert Johnson, of Washington, introduced the following bill, which was referred to the Committee on Coinage, Weights and Measures, and ordered to be printed.

A Bill (H. R. 528) *to discontinue the use of the Fahrenheit thermometer scale in Government publications.*

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the centigrade scale of temperature measurement shall be the standard in United States Government publications, the use of the Fahrenheit scale being discontinued, at the option of Heads of Departments or other independent branches of the Government, either immediately upon the signing of this bill or at any time before January 1, 1920, except as provided in Section 3.

Sec. 2. During the period of transition, the Fahrenheit equivalent of centigrade degrees may be added in parentheses or as a footnote or in any other way, if in the opinion of Heads of Departments or independent officers it seems necessary.

Sec. 3. The use of the Fahrenheit scale shall be permitted after January 1, 1920, in cases where it is required by State and municipal law, or in certificates of tests of instruments graduated in the Fahrenheit scale.

On December 14, 1915, this bill being under consideration, Mr. Johnson spoke in its favor. His speech, followed by extracts from letters of 200 scientific men whom he addressed on the subject, has been printed and furnishes a strong body of evidence in favor of this change.

The subject is one which largely affects entomologists and their work. All of us have surely experienced the inconvenience of translating values from one thermometric scale to another. As long as the Fahrenheit scale is used by the United States Weather Bureau we shall have to take it into account, and yet the Centigrade scale is that in which temperatures are stated in the majority of scientific publications of the rest of the world. There can be no question as to the desirability of one international scale. Dr. S. W. Stratton, Director of the United

States Bureau of Standards, writes in Mr. Johnson's pamphlet: "In my opinion the strongest reason for the adoption of the Centigrade scale is the one given above, viz., the international uniformity."

The American Entomological Society in Philadelphia fully endorsed Mr. Johnson's bill on December 13, 1915. We hope that other entomological societies will take similar action and acquaint Mr. Johnson of their act. Letters to members of Congress from individuals and from associations will help the cause. Mr. Johnson will be glad to send the reprint of his speech and of the letters to any societies whose secretaries will express a wish to that effect.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

Punkies feeding on a fish fly. (Dip.: Chironomidae; Neur.: Sialidae).

On July 4, 1915, while eating lunch beside a delicious spring which feeds one of the characteristic bogs near Beltsville, Maryland, my attention was attracted by motion in a nearby bush. Upon looking for the cause I found a fish fly (*Chauliodes fasciatus* Walker) crawling along a small twig. This large insect partially lifted its wings at frequent intervals and hitched along as if in discomfort. When I picked up the *Chauliodes*, a flock of about six minute flies appeared in the air about it, and as I held the fish fly between thumb and finger seemed reluctant to leave it. This disposition on the part of the little flies enabled me to capture one of them. The specimen has been identified by Mr. J. R. Malloch as *Ceratopogon fusicornis* Coquillet, a species which with two new species Mr. Malloch has recently segregated* in a new genus *Euforcipomyia*.—W. L. McAtee, Washington, D. C.

Curious behavior of Cicindela unipunctata (Col.: Cicindelidae; Hym.; Formicidae).

On July 14, 1915, the writer chanced upon a specimen of *Cicindela unipunctata* Fab. in a woodland road just east of Dead Run, Virginia, a locality opposite and a little down stream from Plummer's Island, Maryland. An ant, *Formica fusca* var. *subsericea* (Say), was running all over the body surface of the beetle, which stood high from the

*Bul. Ill. State Lab. Nat. Hist. XI, Art. IV, December 1915, pp. 312-315.

ground. It even ran over the face and onto the lower side of the head. As I had frequently seen tiger beetles capture and devour ants, I fully expected that venturing about that part of the tiger beetle would be the end of the ant. But it was not; the beetle maintained its pose and the ant continued reconnoitering.

My next thought was that the beetle must be dead, so in a leisurely careless way I stooped to pick it up. At the approach of my fingers it ran like a flash and I almost lost it.

Having revolved in my mind several theories that might account for this behavior, I offer my favorite. That is, that being perfectly quiet and waiting for something to come within pouncing range is this tiger beetle's way of hunting, and that having established itself on guard it was not to be swayed from its poise, even by what would seem most annoying attentions of the ant.—W. L. McAtee, Washington, D. C.

Vanessa californica and Frost (Lepid.).

On November 1st, while pruning fruit trees in the upper Wenatchee Valley, I observed a *Vanessa californica* flying just above the tops of the young trees. The morning was quite frosty; in fact, the crust on the ground was thick enough to bear my weight; the sun was obscured by high-flying snow clouds, while a light but raw breeze off the snow fields of the Cascades made the feel of my heavy mackinaw coat very comfortable indeed. I was so surprised to meet with a butterfly under such conditions that I called to my brother-in-law, Mr. J. C. Hopfinger, who was working nearby, and together we watched it for some time. It was headed into the wind, but was not making any progress, and presently began to drift, but rising higher as it did so, finally disappeared from our sight.

Its movements seemed rather sluggish,—not at all like the flight of *californica* in summer—and I kept expecting it to drop to the ground, but it did not do so, and at the last seemed to be flying more strongly than when I first observed it.

This occurred near Leavenworth, Washington, in the higher foothills of the Cascades.—J. D. Yancey, Port Columbia, Washington.

Color Phases in Argynnis diana (Lep.).

I note with interest in the January issue of the News, page 35, the query of Mr. W. C. Wood as to the color of his female specimen of *A. diana*, caught near here (Blacksburg, Virginia), in which specimen the basal two-thirds of the underside of the hind wings is dark, bluish-black instead of "dark, red-brown," as described by Edwards.

I first collected *Argynnis diana* near Asheville, North Carolina, in the summer of 1880, since which time I have collected it throughout its Alleghany range, particularly near Brevard, North Carolina, and Caesar's Head, South Carolina, and for the past twenty-five years, here in Montgomery, Washington and Giles Counties, Virginia.

During this period of years, I have taken the female from the 1st of July until late in September, and have handled hundreds of specimens in various stages of perfection and wreckage, and have in my collection a carefully selected series illustrating different color phases. From my experience with the fly, I am inclined to believe that perfect, freshly-emerged females always have the underside of the hind wings and apex of fore wings of the dark blue-black color described by Mr. Wood, and that this speedily assumes the rusty brown as the insect ages, even before the upper surface shows any wear or dimness. The case is similar with *Protoparce rustica,* which, when freshly-emerged, has no trace of the familiar rust color, but is of a clean black and white. All the fresh specimens of *diana* in my collection, as well as my recollection and notes of other captures, indicate the correctness of the above idea. Some slightly worn females show in direct light the brown color, but held at a slight angle, and particularly in artificial light, the blue-black can still be seen. I have one female, nearly fresh, in which the outer third of hind wing, underside, which usually retains the blue-black, is also rusty brown, with blue-black angular dashes running to the outer margin. I have specimens showing the green coloring on the upper surface, instead of the blue; also specimens showing various shades of blue, and the blue area on the upper surface of hind wings varying from an almost complete band to isolated, blue, angular dashes. —Ellison A. Smyth, Jr., Va. Polytechnic Institute, Blacksburg, Virginia.

Entomological Literature.

COMPILED BY E. T. CRESSON, JR., AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of systematic papers are all grouped at the end of each Order of which they treat, and are separated from the rest by a dash.

Unless mentioned in the title, the number of new species or forms are given at end of title, within brackets.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London.

For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

2—Transactions, American Entomological Society, Philadelphia. **3**—The American Naturalist. **4**—The Canadian Entomologist. **5**—Psyche. **6**—Journal, New York Entomological Society. **8**—The Entomologist's Monthly Magazine, London. **10**—Nature, London. **11**—Annals and Magazine of Natural History, London. **13**—Comptes

Rendus, Societe de Biologie, Paris. **40**—Societas Entomologica, Zurich. **50**—Proceedings, U. S. National Museum. **67**—Entomologiske Tidskrift, Stockholm. **68**—Science, New York. **69**—Bolletino, Societa Italiana Entomologica. **84**—Entomologische Rundschau. **87**—Bulletin, Societe Entomologique de France, Paris. **102**—Proceedings, The Entomological Society of Washington. **180**—Annals, Entomological Society of America. **185**—Journal, Quekett Microscopical Club, London. **189**—Journal of Entomology and Zoology, Claremont, Calif. **193**—Entomologische Blatter, Cassel. **198**—Biological Bulletin, Marine Biological Laboratory, Woods Hole, Mass. **216**—Entomologische Zeitschrift, Frankfurt a. Main. **275**—Philippine Journal of Science, Manila. **278**—Annales, Societe Zoologique Suisse et du Museum d'Histoire de Geneve, Revue Suisse de Zoologie. **324**—Journal of Animal Behavior, Cambridge. **335**—Smithsonian Miscellaneous Collections. **344**—U. S. Department of Agriculture, Washington, D. C. **369**—Entomologische Mitteilungen, Berlin-Dahlem. **383**—Proceedings and Transactions of the Nova Scotian Institute of Science, Halifax. **407**—Journal of Genetics, Cambridge, England. **420**—Insecutor Inscitiae Menstruus: A monthly journal of entomology, Washington. **438**—Bulletin, Illinois State Laboratory of Natural History, Urbana. **447**—Journal of Agricultural Research, Washington. **477**—The American Journal of Tropical Diseases and Preventive Medicine, New Orleans. **490**—The Journal of Parasitology, Urbana, Illinois. **521**—Bulletin Mensuel l'Academie des Sciences et Lettres de Montpellier.

GENERAL SUBJECT. **Adams, C. C.**—An ecological study of prairie and forest invertebrates, **438,** xi, 33-279. **Ainslie, C. N.**—An improved collecting bottle, **5,** xxii, 211-12. **Bradley, J. C.**—Rules for entries in bibliographies, supplementary to the American and British Library Associations' Catalog rules. Published for use of students in a course on the technics of entomological literature (Ithaca, N. Y.), 8 pp. **Cockayne, E. A.**—"Gynandromorphism" and kindred problems, **407,** v, 75-132. **Croft, H. H.**—Obituary, **4,** 1916, 1-5. **Davis, W. T.**—Shooting insects with a bean-shooter, **6,** xxiii, 253-4. **Fabre, J. H.**—Obituary notice by W. M. Wheeler, **324,** vi, 74-80. **Heyden, L. von**—Biographical notice, **193,** xi, 193-203; **369,** iv, 255-67. **Krausse, A.**—Ein neuer automatischer gesiebe-ausleseapparat, **369,** iv, 278-9. **Lampa, S.**—Bibliography, **67,** xxxvi, 273-281. **Meixner, A.**—Die beiden auflagen von Dr. G. W. F. Panzer's Faunae Insectorum Germanicae Initia, **369,** iv, 268-78. **Nelson, E. M.**—Various insect structures, **185,** xii, 593-6. **Webster, F. M.**—Obituary by W. R. Walton, **68,** xliii, 162-4. **Woodworth, C. W.**—Quantitative entomology, **180,** viii, 373-83.

PHYSIOLOGY AND EMBRYOLOGY. **Patterson, J. T.**—Observations on the development of Copidosoma gelechiae, **198,** xxix, 333-72.

MEDICAL. **Roberg, D. N.**—The role played by the insects of the dipterous family Phoridae in relation to the spread of bacterial infections. II Experiments on Apiochaeta ferruginea with the cholera vibrio, **275,** x, 309-339. **Townsend, C. H. T.**—The insect vector of Uta, a Peruvian disease, **490,** ii, 67-73.

ARACHNIDA, ETC. **Barber, H. S.**—Migrating armies of Myriopods. (A correction), **102,** xvii, 189. **Moles, M. L.**—Three common spiders of Laguna, **189,** vii, 209-10. **Parvlowski, E.**—Sur la structure des organes phagocytaires chez Scorpio maurus; Sur la phagocytose chez Scorpio maurus, **13,** lxxviii, 746-47; 748-50.

NEUROPTERA, ETC. **Krecker, F. H.**—Phenomena of orientation exhibited by Ephemeridae, **198,** xxix, 381-88. **Lloyd, J. T.**—Notes on the immature stages of some New York Trichoptera, **6,** xxiii, 201-12. **Warren, A.**—A study of the food habits of the Hawaiian dragon flies or Pinau. (Coll. of Hawaii Pub. No. 3) 45 pp.

Cummings, B. F.—New species of lice, **11,** xvii, 90-107.

ORTHOPTERA. **Caudell, A. M.**—The genera of the Tettiginiid insects of the subfamily Rhaphidophorinae found in America No. of Mexico. [2 n. gen.; 6 n. sps.], **50,** xlix, 655-90. Three interesting O. from the vicinty of Washington, D. C., **102,** xvii, 189. **Giglio-Tos, E.**—Mantidi esotici, **69,** xlvi, 31-108, 134-200.

HEMIPTERA. **Amans**—Sur le vol des Cigales, **521,** 1915, 182-92. **Ball, E. D.**—Adaptations to arid conditions in Cercopidae and Membracidae, **180,** viii, 365-8. **Dewitz, J.**—On the poisons of plant lice, **180,** viii, 343-46. **Funkhouser, W. D.**—Life history of Vanduzea arquata, **5,** xxii, 183-98.

Davis, W. T.—A new Cicada from Arizona, **6,** xxiii, 239-41. **Quaintance & Baker**—A n. gen. and sps. of Aleyrodidae from British Guiana, **180,** viii, 369-72. **Wilson, H. F.**—A synopsis of the aphid tribe Pterocommini, **180,** viii, 347-58.

LEPIDOPTERA. **De Gryse, J. J.**—Some modification of the hypopharynx in lepidopterous larvae, **102,** xvii, 173-79. **Essig, E. O.**—The brown Ctenucha (brunnea), **189,** vii, 241-4. **Fracker, S. B.**—The classification of lepidopterous larvae (Illinois Biol. Mon. ii, No. 1), 164 pp. **Klotz, W.**—Abnormitat von Philosamia cynthia, **216,** xxix, 84. **McDunnough, J.**—Notes on types of L. in Snow collection, **4,** 1916, 25-8. **Scott, H.**—Tineid moths of Central America [Review of Biologia Centrali-Americana, Vol. IV, Lepid.], **10,**

xcvi, 533-4. **Winn, A. F.**—Heliotropism in butterflies; or, turning towards the sun, **4,** 1916, 6-9.

Barnes & McDunnough—Notes on some recently described species of N. A. Lep., **4,** 1915, 282-4. **Closs, A.**—Xylophanes algrensis, sp. nov., **369,** iv, 290-1. **Fruhstorfer, H.**—Neue neotropische Rhopaloceren, **40,** xxxi, 3-4. Zwei neue Pieridenrassen aus dem neotropischen faunengebiet, **84,** xxxii, 76. **Heinrich, C.**—Two n. sps. of Coleophora, **420,** iii, 143-4. **Perrin, J.**—Additions to the catalog of butterflies and moths, collected in the neighborhood of Halifax, N. S., **383,** xiv, 49-56.

DIPTERA. Back & Pemberton—Effect of cold-storage temperature upon the Mediterranean fruit fly, **447,** v, 657-66. **Barrett, H. P.**—Notes on the breeding places of Anopheles, **477,** iii, 406-10. **Bishopp, F. C.**—The distribution and abundance of the ox warbles, Hypoderma lineata and H. bovis in the U. S., **180,** viii, 359-64. **Hutchison, R. H.**—Notes on the preoviposition period of the house fly, Musca domestica, **344,** Bul. 345. **Moreira, C.**—L'habitat du Masicera brasiliensis, parasite des Anosia, **87,** 1915, 269. **Shannon, R. C.**—Eastern Symphoromyia attacking man, **102,** xvii, 188-9. **Thompson, W. R.**—Sur la biologie de deux Tachinaires a stade intramusculaire (Plagia trepida et Strumia scutellata), **13,** lxxviii, 717-21.

Aldrich, J. M.—Two new Canadian D., **4,** 1916, 20-2. **Alexander, C. P.**—New or little-known crane flies from Colombia, Ecuador and Peru, **2,** xlii, 1-32. Two new crane-flies from Porto Rico; New nearctic crane-flies in the U. S. National Mus. [12 sps.], **420,** iii, 104-7; 127-42. **Banks, N.**—Notes on some Virginian species of Platypeza [5 new], **6,** xxiii, 213-16. **Dyar & Knab**—Notes on the species of Culex of the Bahamas, **420,** iii, 112-15. **Edwards, F. W.**—On the systematic position of the genus Mycetobia, **11,** xvii, 108-16. **Felt, E. P.**—New gall midges [5 new], **4,** 1916, 29-34. **Hunter, W. D.** A new species of Cephenomyia from the U. S., **102,** xvii, 169-73. **Jennings, A. H.**—Two n. sps. of Simulium from tropical America, **102,** xvii, 199-200. **Johnson, C. W.**—Note on the species of the genus Acrocera, **5,** xxii, 198-203. **Knab, F.**—New Ceratopogoninae from Peru: A new American fruit-fly, **420,** iii, 109-11; 146. **Malloch, J. R.**—A revision of the N. Am. Pachygasterinae with unspined scutellum [2 n. gen.; 2 n. sps.], **180,** viii, 305-20. Some additional records of Chironomidae for Illinois and notes on other Illinois D. [13 new], **438,** xi, 307-63. **Shannon, R. C.**—A new Eastern Brachyopa, **420,** iii, 144-5. **Townsend, C. H. T.**—New western and southwestern Muscoidea [19 n. gen.; 18 n. sps.], **6,** xxiii, 216-34. Diagnoses of n. gen. of Muscoid flies founded on old species, **50,** xlix, 617-33. Nine new tropical American genera of Muscoidea; New

gen. of muscoid flies from the Middle Atlantic states [5 n. gen.; 5 n. sps.]; Synonymical notes on Muscoidea, **420,** iii, 91-97; 97-104; 115-22. **Van Duzee, M. C.**—Notes on Chrysotimus, with the description of a n. sp., **4,** 1916, 23-4. **Walton, W. R.**—The Tachinid fly Mauromyia pulla, and its sexual dimorphism, **102,** xvii, 190-93.

COLEOPTERA. Barber, H. S.—Macrosiagon flavipennis in cocoons of Bembex spinolae, **102,** xvii, 187-8. **Brocher, F.**—Recherches sur la respiration des insectes aquatiques, **278,** xxiii, 401-38. **Coad, B. R.**—Studies on the biology of the Arizona wild cotton weevil, **344,** Bul. 344 **Frost, C. A.**—Remarks on collecting at light, with a list of the C. taken, **5,** xxii, 207-11. **Harris, J. A.**—On differential incidence of the beetle Bruchus, **6,** xxiii, 242-53. **Hyslop, J. A.**—Notes on the habits and anatomy of Horistonotus uhlerii, **102,** xvii, 179-85. **Knab, F.**—Dung-bearing weevil larvae, **102,** xvii, 193-4. **Leng, C. W.**—Coccinella transversoguttata, Trichodes nuttalli, and Malachius aeneus, **6,** xxiii, 254. **Morse, E. S.**—Fireflies flashing in unison, **68,** xliii, 169-70.

Blatchley, W. S.—Notes on Smicronyx with descriptions of a n. sp. and a n. var., **4,** 1916, 10-12. **Carnochan, F. G.**—Notes on the genus Phelister [2 new], **5,** xxii, 213-14. **Champion, G. C.**—Notes on Melandryidae, **8,** 1916, 1-10. **Morse, A. P.**—Leptura emarginata in England [Notice], **5,** xxii, 212. **Schaeffer, C.**—New C. and miscellaneous notes, III [5 new], **6,** xxiii, 235-8. **Schenkling, S.**—Neue beitrage zur kenntnis der Cleriden, **369,** iv, 310-22 (cont.).

HYMENOPTERA. McIndoo, N. E.—The sense organs of the mouth-parts of the honey bee, **335,** lxv, No. 14, 55 pp. **Morgan, T. H.**—The Eugster gynandromorph, **3,** 1, 39-45. **Rohwer, S. A.**—The mating habits of some saw-flies, **102,** xvii, 195-98. **Wheeler, W. M.**—On the presence and absence of cocoons among ants, the nest-spinning habits of the larvae and the significance of the black cocoons among certain Australian species, **180,** viii, 323-42. The marriage-flight of a bull-dog ant (Myrmecia sanguinea), **324,** vi, 701-3.

Cockerell T. D. A.—New Californian bees [4 new], **189,** vii, 230-33. **Crawford, J. C.**—New No. American H. [3 sps.]; The bee genus Holocopasites [3 new], **420,** iii, 107-9; 123-6. **Grimshaw, P. H.**—The Greville collection of Chalcididae and Proctotrypidae in the Royal Scottish Museum, with some reference to Walker's types, **206,** 1915, 344-51 **Morley, C.**—A revision of the Ichneumonidae. Part IV, Tribes Joppides and Banchides [British Museum Publications]. **Rohwer, S. A.**—Ametastegia glabrata, a holarctic sawfly, **102,** xvii, 198-9. **Wheeler, W. M.**—A new bog-inhabiting variety of Formica fusca, **5,** xxii, 203-6.

Doings of Societies.

Entomological Section, Academy of Natural Sciences, Philadelphia.

Meeting of November 18th, 1915. Twelve persons present, Mr. Philip Laurent, Director, presiding.

Lepidoptera.—Mr. Daecke exhibited *Thecla liparops,* taken at Carlisle Junction, Pennsylvania, July 9th, 1909, and *Thecla edwardsi,* Hunter's Run, Pennsylvania, July 11th, 1914, the latter species being abundant. Dr. Skinner exhibited the Academy collection of the Pierid genus *Delias* and called attention to the predominance of orange in butterflies that extend their range into the tropics.

Diptera.—Mr. Hornig said he had found *Culex pipiens* breeding on November 1st and *Anopheles punctipennis* on November 5th this fall.

Orthoptera.—Mr. Rehn referred to the area from Florida to Texas, over which he had collected in conjunction with Mr. Hebard this summer. Former studies of the Orthoptera in the adjoining territory were mentioned. The distribution of certain species was pointed out and the various delimiting barriers mentioned and illustrated. Mr. Laurent exhibited a mounted specimen of *Paratenodera sinensis* in the act of catching and holding a humming-bird. He related the occurrence of a Mantid of this species, catching a humming-bird, in Germantown, Philadelphia, and represented the act by the mounted specimens shown.—Henry Skinner, *Recorder.*

The Convocation Week Meetings: Horticultural Inspectors.

The fourteenth annual meeting of the American Association of Official Horticultural Inspectors, an affiliated division of the Association of Economic Entomologists, was held in Columbus, Ohio, December 28 and 29, 1915. The following papers of an entomological character were presented:

Harry B. Weiss, New Brunswick, N. J., Foreign Pests Recently Established in New Jersey—E. R. Sasscer, Washington, D. C., Imported Insect Pests Collected on Imported Nursery Stock in 1915, Remarks on Inspection Facilities in the District of Columbia, and Vacuum Fumigation and Its Application to the Control of Insects Affecting Plants and Plant Products—J. G. Sanders, Madison, Wis., The Uniform Horticultural Inspection Law—J. H. Dayton, Painesville, Ohio, Report of the Legislative Committee of the National Nurserymen's Association (Reported the acceptance of the Uniform Inspection Bill by the nurserymen at their national convention in Detroit, Michigan, June, 1915; said that it was a gratifying advance in horticultural legislation to note the closer feeling of co-operation among the nurserymen and the entomologists; conveyed the sentiments of the nurserymen to this Association and expressed a wish for the continued good feeling and co-operation existing at present.)—F. M. O'Byrne, Gainesville, Fla., Nursery Inspection in Florida.—J. Edward

Taylor, Salt Lake City, Utah, Co-operation in the Establishment of State Quarantines.—N. E. Shaw, Columbus, Ohio, The Ohio Inspection System.

During the discussion of Mr. Weiss' paper it was moved by Dr. Headlee that it is the sense of this body that the federal quarantine be strengthened and that an absolute quarantine be placed on all plants imported with soil about the roots, except such as are introduced by the U. S. Department of Agriculture for experiment and those to be held in quarantine for a reasonable period. This motion was passed unanimously and the Secretary instructed to notify the Federal Board of this action. Mr. Burgess reported that Christmas trees and greens to the extent of over forty-one carloads, containing 1200 to 1800 trees each, had been shipped from the quarantine area in New England, all of which had been inspected previous to shipment, and a considerable number of egg clusters of the "Gipsy Moth" had been found on these trees. All carload lots went from New Hampshire and Maine and had been shipped to many of the States of the Union, including Michigan, Wisconsin, Minnesota, Washington and Oregon, where already grows a plentiful supply of Christmas trees. It was the sense of the inspectors present that the Federal Quarantine should be replaced on Christmas greens, otherwise several of the States would absolutely quarantine the shipments of Christmas trees originating in the moth quarantine area.

(From notes furnished by J. G. Sanders, *Sec'y.*)

[To the total of 84 entomological papers and papers of general bearing on entomology, listed on pages 91-96, *anteá*, as presented at the Convocation Week meetings of 1915, the above notes add 9.—Ed.]

Feldman Collecting Social.

Meeting of October 20th, 1915, at the home of H. W. Wenzel, 5614 Stewart Street, Philadelphia. Twelve members were present, Pres. Wenzel in the chair.

Diptera.—Mr. Hornig said he had found many mosquito larvae in Cobbs Creek, Pennsylvania, all of which at the time he had considered *Culex pipiens* Linn., but had bred from them some *Aedes jamaicensis* Theob.

Lepidoptera.—The same speaker said he had found larvae of *Hemileuca maia* Dru. at Westville, New Jersey, in 1913, which pupated the same year. Some of these emerged in 1913 and two came out within the present week. Mr. Haimbach recorded *Racheospila atripes* Druce from Homestead, Florida, v-14-15, collected by Dr. Castle. The type was described from Panama and is in the Staudinger Collection.

Coleoptera.—Mr. Daecke said he had found many *Toxotus trivittatus* Say, which never varied until he caught one at Cove Mt., Pennsylvania, June 27, 1915, which he exhibited, and which has the proximal portion of the marginal stripes on the elytra missing; also exhib-

ited a specimen of *Dicerca obscura* Fabr., Rockville, Pennsylvania, October 3, 1913; the New Jersey list records this species in July and August. A specimen of *Dicerca lepida* Lec. was shown from Hummelstown, Pennsylvania, July 13, 1915, collected on ironwood by Mr. Knull; this is extremely rare. Mr. H. W. Wenzel exhibited a female Scarabaeid from Huachuca Mts., Arizona, (July) collected by H. A. Wenzel. This is undoubtedly a *Xyloryctes* and most likely a new species. Geo. M. Greene exhibited *Eurytrachelus bucephalus* Pt. from Java and *Eutrachelus temmincki* Latr. from Borneo in comparison with our local *Dorcus parallelus* Say, and *Eupsalis minuta* Oliv.

Adjourned to the annex.

Meeting of November 17, 1915, at the home of H. W. Wenzel, 5614 Stewart St., Philadelphia; eleven members were present. Pres. Wenzel in the chair.

Hymenoptera. Mr. Kaeber exhibited a pair of wasps in copulation, beaten from hickory at Upper Darby, Pennsylvania, vi-28-15, which were identified by Mr. Harbeck as *Methoca stygia* Say.

Lepidoptera. Mr. Laurent stated that though he knew the season was late he was surprised to see on November 13th specimens of *Colias philodice* Gdt. flying at Mt. Airy, Philadelphia, Pennsylvania.

Coleoptera.- Dr. Castle stated that the *Balanini* mentioned in the September minutes as common at Pine Beach, New Jersey, are *B. uniformis* LeC. and they are much darker than California specimens in his collection; he exhibited a weevil, *Chioyanthobius schwarzi* Pierce, from Enterprise, Florida, vii-10-15. Mr. H. W. Wenzel exhibited *Coccinella affinis* Rand, and *Lina scripta* Fabr. found by H. A. Wenzel at Westville, New Jersey, xi-14-15, and *Plagiodera armoraciae* Linn. from Staten Island, New York, ix-9-15, collected by Wm. T. Davis. All three species were hibernating on willow.

Adjourned to the annex. GEO. M. GREENE, *Sec'y.*

Chicago Entomological Club.

Meeting of November 21, 1915, at the home of Thomas Smart, eleven members present.

Lepidopterists exhibited specimens of *Melalopha* and *Datana* and discussed their characteristics and larval habits, etc. Local captures reported were *Melalopha apicalis, inclusa, strigosa, albosigma* and *brucei; Datana ministra, angusii, perspicua, integerrima* and *contracta.*

Coleopterists had the Meloidae as a subject and extensive series were exhibited. Notable among them was a specimen of *Pomphopoea sayi* (not quite typical) taken by Mr. Wolcott at Beverly Hills, Illinois, on blossoms of *Spiraea salicifolia* on June 7, 1915. This is new to the region. Mr. Liljeblad showed a specimen of *Nemognatha cribraria* taken at Hessville, Indiana, August 13th, also new to the region.—A. KWIAT, *Secretary.*

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued

Wanted—*Cicindela patruela, hentzii, modesta, audubonii, ancocisconensis, imperfecta, rectilatera, abdominalis, formosa* and *unipuncta*. Fine North American and exotic specimens given in exchange.—Harry L. Johnson, South Meriden, Conn.

Send for my list of Coleoptera No. 1, January, 1916.—F. W. Nunenmacher, 1118 Oakland Ave., Piedmont, California.

For Exchange (specimen for specimen)—*Catocala titania* for *C. santa, C. jair, C. amestris, C. coelebs, C. olivia, C. canadensis, C. meskei*, from the east, *C. wernerii* and *C. beutenmuellerii*.—Ernst Schwarz, 6310 N. Newstead Ave., St. Louis, Mo.

Tremex columba (Hymenoptera)—Perfect specimens, male and female, offered in exchange for No. Am. Coleoptera and Lepidoptera.—Philip Laurent, 31 East Mt. Airy Ave., Phila., Pa.

Wanted—Bibliog. Amer. Econ. Entom., I-IV; Tech. Ser. Bul., 2-7; Entom. Circ., 1, 10, 17, 27, 40, 41, 44, 46, 89; Insect Life, Vols. 4-6; Nomenclator Zool. Cash or exchange.—Philip Dowell, Port Richmond, New York.

Wanted—*Papilio pilumnus, palamedes, aliaska, nitra, brevicauda, bairdi, ajax*, in exchange for Lepidoptera from my vicinity.—Adolph Mares, 2524 S. Homan Ave., Chicago, Ill.

For Exchange—Illinois and Indiana Coleoptera for North American species new to my collection.—C. Selinger, 1338 South 50th Avenue, Cicero, Ill.

Wanted—Living pupae of *Papilio asterias, P. zolicaon, S. cynthia, S. cecropia, promethea, io, polyphemus, regalis, imperialis, augulifera, rubra* and other Saturnidae in exchange or for cash.—A. F. Porter, Decorah, Iowa.

Wanted—A person in the vicinity of New York City who can spread butterflies skilfully.—W. Tonnclé, 200 W. 72d St., New York City.

Carabidae of genera *Omophron, Nomaretus*, and especially *Elaphrus* wanted for cash. Specimens other than those from N. E. States more desired.—Alan S. Nicolay, 416a Grand Ave., Brooklyn, New York.

Liberal exchange given for Lepidoptera needed for the collection of the American Entomological Society, 1900 Race St., Phila., Pa.

For Exchange or Sale—Insect Life, Vol. I, Nos. 4, 5, 6; Vol. II, Nos. 7, 8, 9, 10; Vol. III, Nos. 4, 5, 9, 10; Vol. 7, bound; U. S. Bur. Ent. Bull. (N. S.). Nos. 31, 44. Wanted 5th Ill. Report, and Riley's 9th Mo. Report.—E. G. Kelly, Wellington, Kansas.

Lepidoptera—I have for exchange Eastern U. S. Noctuidae and Geometridae mounted on pins, including *Catocala elonympha, similis, praeclara, gracilis, coccinata, epione, relicta* and varieties. Also cocoons of *P. cynthia* and *C. angulifera*—John H. West, 2057 East York Street, Phila., Pa.

TO SOCIETIES AND MUSEUMS

An experienced collector, now residing in the tropics, who has made a special study of tropical work, is in a position to accept, on moderate terms, a collecting commission for any Museum or Society wishing to make the very interesting and highly requisite addition of a full series of all orders of Neotropical Insects to their existing collection. Special data with every specimen, all fresh taken and free from mould, acari, etc. Write first "Exotica" care ENTOMOLOGICAL NEWS, 1900 Race St., Philadelphia, Pa.

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