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POPULAR AND ECONOMIC ENTOMOLOGY.

THE ESTABLISHMENT OF FOREIGN INSECTS IN SPITE OF INSPECTION.

BY HARRY B. WEISS, NEW BRUNSWICK, N.J.

At Rutherford, N.J., are located two large nurseries which import a considerable quantity of nursery stock from Europe, Asia and South America every year. During the spring of 1914 three thousand seven hundred and forty-four cases of imported stock were consigned to Rutherford; during the fall of 1914 the number of cases was one thousand seven hundred and sixty-five, and during the spring of 1915 two thousand one hundred and ninety-one cases were received. From these figures, representing the combined imports of the two firms, one can get some idea of the enormous numbers of imported plants which are set out in this vicinity and later distributed to various points in the United States and possibly Canada.

During the inspection seasons, one or more men are stationed at Rutherford for the purpose of examining this stock as it comes in, and all possible precautions are taken to see that nothing undesirable is introduced. Yet, in spite of this, the following foreign species have recently become established in that vicinity.

Phytomyza aquifolii Gour. was lately found mining the leaves of English holly. This species has also been taken, mining the leaves, on English holly imported from Holland. In May, 1915, the European pine-shoot moth, *Evetria buoliana* Schiff was taken in *Pinus mughus* growing in the nursery. During August, 1913, *Agrilis viridis* Linn. var. *fagi* Ratz. was found infesting rose stems and doing considerable damage in this as well as in other sections of the state.

In January, 1914, *Aspidiotus tsugæ* Marlatt was taken in considerable numbers on Japanese hemlock. Since that time, however, all infested trees found have been destroyed.

Myelophilus piniperda Linn., which often does extensive damage to pine trees in Europe, was also found at Rutherford in *Pinus sylvestris*. In 1909 Dr. J. B. Smith had his attention called

to the European Red Tail, *Dasychira pudibunda* Linn., which had been bred from pupa collected near Rutherford. This insect is widely distributed in Europe and parts of Asia, and ranks as a first-class pest along with the Gipsy and Brown-tail Moths.

During June, 1915, a species of *Pseudococcus*, evidently from Japan, was found doing considerable damage to *Taxus* sp., originally from that country, and in July, 1915, a mole-cricket,* as yet unidentified but supposedly from Europe, was found in comparatively large numbers feeding on the roots of various plants. In addition to the above foreign species, Rutherford has also received unwelcome insects from other states, the most important being the Gipsy Moth and the Florida Fern Caterpillar, *Callopistria floridensis* Guen. The Gipsy Moth infestation has, of course, been entirely destroyed.

With one or two exceptions, the above established infestations are light, but it is only a question of time before they will become more troublesome. On account of the similarity between the climate, animals and plants of North America and the northern parts of Europe and Asia, various European pests do very well in this country, especially when allowed to develop unchecked by parasitic enemies and cultural methods. Imported nursery stock is undoubtedly the greatest source of danger, although some species come over in merchandise, or in the packing around merchandise, while others are accidental passengers on boats. Many of our now common and destructive pests were imported before quarantine laws and inspection systems were in force.

The well known San José scale is probably a native of central China. The Gipsy Moth, *Porthetria dispar* Linn. is a serious pest in Europe, and occurs in Asia and northern Africa. The Brown-tail Moth, *Euproctis chrysorrhæa* Linn., is from central and western Europe. The codling moth, *Cydia pomonella* Linn., the pear psylla, *Psylla pyricola* Foerst., the clover leaf weevil, *Phytonomus punctatus* Fab., the clover root-borer, *Hylastinus obscurus* Marsham, the seed corn maggot, *Pegomya fusciceps* Zeit., the pea moth, *Semasia nigricana* Steph., the carrot rust fly, *Psila rosæ* Fab., the imported onion maggot, *Pegomyia ceparum* Bouche., both asparagus

* This has since been determined by Mr. J. A. G. Rehn as *Gryllotalpa gryllotalpa* Linn., the European mole-cricket.

beetles, *Crioceris asparagi* Linn., and *C. 12-punctata* Linn., the strawberry leaf-roller, *Ancylis comptana* Frohl., and the imported cabbage worm, *Pontia rapæ* Linn., are all of European origin.

The alfalfa weevil, *Phytonomus murinus* Fab., is a native of Europe, western Asia and northern Africa; the Mexican cotton boll weevil, *Anthonomus grandis*, came from Central America and Mexico, the sugar beet web-worm, *Loxostege sticticalis* Linn. from Europe and northern Asia, the harlequin cabbage bug, *Murgantia histrionica* Hahn., from Mexico and Central America, the Anguimois grain moth, *Sitotroga cerealella* Oliv. from Europe and the Argentine ant, which has recently become such a pest in the Southern States, from Argentina.

Various other pests have also come to us from abroad, among which are the elm leaf-beetle, *Galerucella luteola* Mull., the wood leopard moth, *Zeuzera pyrina* Linn., the Hessian fly, *Mayetiola destructor* Say., the hop plant-louse, *Phorodon humuli* Schrank, the willow and poplar curculio, *Cryptorhynchus lapathi* Linn., the apple aphid, *Aphis mali* Fabr., the elm bark louse, *Gossyparia ulmi* Geoff., the bed-bug, *Acanthia lectularia* Linn., the Buffalo carpet-beetle, *Anthrenus scrophulariæ* Linn., the larder beetle, *Dermestes lardarius* Linn., and the rice weevils, *Calandra granaria* Linn., and *oryzæ* Linn.

The above list, while not by any means complete, will serve to show the importance of introduced species. The injuries caused by these imported pests are, of course, perfectly enormous, and, running as they do into millions of dollars, are beyond reasonable calculation.

While inspection service is doing considerable to prevent the establishment of foreign insects, it is not by any means complete, and, as has been suggested before, a federal law prohibiting the importation of all nursery stock would be the nearest approach to perfection.

A NEW MIDGE FROM GUATEMALA.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

Hardly anything is known of the Chironomid fauna of the highlands of Central America, but it cannot be doubted that these regions are rich in species still awaiting discovery and description. When Mrs. Cockerell was in Guatemala City, although not specially concerned with Diptera she obtained a couple of specimens of a new form which is described herewith.

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Chironomus guatemaltecus, n. sp.

♀—Length about 6 mm., wing 4 mm., anterior tarsus 5.75 mm. Antennæ 7-jointed, pale ochraceous, last joint black; length of joints in microns: (2) 64, (3) 144, (4) 136, (5) 128, (6) 96, (7) 224; first joint very broad, cushion-like; second short, cylindrical, slightly swollen apically; 3 to 6 flask-like, bulbous at base, narrow and neck-like apically; 7 narrow and cylindrical, tapering apically; joints 2 to 6 with very long hairs (one hair on 4 fully 333 microns long, one on 6 288 microns); 7 with much shorter (about 65-80 microns) curved hairs. Palpi dusky. Thorax finely hairy, pale ochraceous; mesonotum dull (the bands faintly shining), with three reddish or reddish-fuscous longitudinal bands, the middle one divided into two by a fine median line and ending abruptly posteriorly a little beyond middle of mesonotum; lateral bands very broad, evanescent anteriorly; scutellum pale yellowish; metathorax rufofuscous; halteres with dark knob. Abdominal segments with basal half or rather more (especially on segments of apical half) black, and apical border pale ochraceous. Legs very pale ochraceous, marked with dusky; femora with a suffused dusky sub-apical ring; anterior tibiæ with more than the basal half, as well as the extreme apex, dusky; middle and hind tibiæ dusky at extreme apex, and faintly so at base; tarsal joints dark at apex; anterior tibiæ 1408-1440 microns long, anterior basitarsi 1370-2495. Wings hyaline, iridescent, with very pale veins, a dark spot at cross-vein as in allied species; fork of vein 5 a little beyond level of fork of 3-4; end of vein 3 very near wing tip, about as in *C. fallax*, but wing is narrower in proportion to its length than in that species; three very distinct anals.

Hab.—Guatemala City, Guatemala (*W. P. Cockerell*).

In Johannsen's key (Bull. 86, N. Y. State Museum) it runs to *C. viridicollis*, which differs in many details; in the auxiliary key it falls near *C. albistria* Walker, from Hudson's Bay. In Malloch's key (Bull. Ill. Lab. N. Hist., X, p. 416. et seq.) it falls near *C. serus* or *C. decorus*. It is actually very close to *C. decorus*, differing especially by the dusky anterior tibiæ and lack of greenish colour. I am indebted to Professor Johannsen for specimens of *C. decorus* (as well as a number of other species), and find that the species is undoubtedly distinct.

A CONTRIBUTION TOWARDS THE TAXONOMY OF THE
DELPHACIDÆ.

BY F. MUIR.

Hawaiian Sugar Planters' Experiment Station, Honolulu, T.H.

(Continued from Page 302)

*Three New Genera.***Lanaphora**, gen. nov.

Head narrower than thorax; vertex quadrate, the base as broad as the length, apex half the base, a small carina along base and apex; face narrow, sides straight, apex about twice the width of base, a small simple carina down middle; the lateral carinæ of vertex and face developed into deep keels, diminishing in size towards the apex of face; clypeus nearly as long as face, tricarinate. Antennæ longer than face and clypeus together, joints subequal in length, arista apical and long; first joint narrow, slightly flattened, second joint terete with distinct sense organs surrounded with minute hairs; eyes wide with deep antennal emargination on lower edge. Pronotum very slightly emarginate posteriorly, tricarinate, lateral carinæ straight or very slightly convergingly curved, reaching hind margin. Mesonotum tricarinate. First joint of hind tarsus equal to the other two together, spur cultrate, thick, inner surface concave, a minute tooth at apex; no teeth on hind margin, only minute fine hairs; one basal and one median spine on hind tibiæ, five small apical spines. Tegmina pointed at apex, radia not touching media, a short radial cross-vein present, median with two sectors, cubitus touching radia at base of first sector.

This genus differs from *Purohita* in the subequal joints of the antennæ, the basal one of which is not foliaceous, and the lateral carinæ of the face being deeper. If we disregard the spur it comes, along with *Purohita*, next to *Sparnia*.

Type—*L. bakeri*.

Lanaphora bakeri, sp. n.

♂ Light yellow or yellowish white, darker on face, clypeus, coxæ and basal portion of abdominal segments; some darker brown spots on lateral keels of vertex and face, antennæ, especially a ring at base of second joint, and two small irregular rings on tibiæ;

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slightly darker between carinae of pro- and mesonotum. Tegmina hyaline, veins white speckled with brown dots, six irregular light brown spots in basal half, one at end of clavus, one at base of media, one at middle of costa, one at middle of radia and two in median cells; a broad brown mark from end of clavus across tegmina to near costal margin, and along hind margin to near end of cubitus, along second median cell to apex and from end of costal cell to end of radia; wings hyaline with white veins.

Pygophor round, a small pointed process on medio-ventral edge, lateral edges subangularly produced; anal segment a little longer than broad, tubular with anus situate within apex; styles reaching end of anal segment, narrow, flattened, straight on ventral (inner) edge, slightly sinuous on dorsal (outer) edge, narrowing to near apex, where it broadens out and bends at right angle to main part, apex truncate.

♀ Anal segment shorter than in male, anal style narrowly lanceolate.

Length 2.5 mm.; tegmen 4.3 mm.*

Hab.—Mount Maquilin, living at base of leaf-sheath of bamboos among a white, flocculent secretion. Prof. C. F. Baker called my attention to this and the following species when at Los Banos. (Baker and Muir, February.)

Bambucibatus, gen. nov.

Head narrower than thorax base as wide as length, apex much narrower than base, truncate or but slightly curved, lateral carinae large, an exceedingly obscure medio-longitudinal carina; length of face more than double the width, base slightly narrower than apex, the simple median and lateral carinae well developed, clypeus tricarinate; antennae a little longer than face, joints subequal in length, first broad, flattened narrow at base, wide at apex; subtriangular, a keel down middle, second terete, thick.

Pronotum roundly and shallowly emarginate posteriorly, tricarinate, lateral carinae straight or slightly convergingly curved, distinctly reaching hind margin; mesonotum tricarinate. Hind tibiae with one basal, one median and five small apical spines;

*Measurements are from apex of vertex to anus and from base to apex of one tegmen.

spur cultrate, solid, convex on inner surface, a small apical tooth but no teeth on hind margin. Tegmina narrowly rounded at apex, media straight, not bent to touch radia, radial cross-vein present, first median sector bent, touching cubitus.

This genus comes next to *Sagotopsis*, but differs in having the first segment of antennæ flattened and triangular. If we disregard the nature of the spur it comes near *Perkinsiella* and *Sagoopsis* near *Sparnia*.

Type—*B. albolineatus*.

Bambucibatus albolineatus, sp. n.

♂ Light brown, ventral surface and legs lighter, dorsum of abdomen darker. A white or light yellow median line from apex of vertex to end of mesonotum, bordered on each side with dark brown or black; antennæ darker brown. Tegmina brown with colourless patches, a large colourless patch in middle of costal cell, a large one at end of clavus extending to media, three from end of costal cell to second median sector, a small one at end of radia; wings hyaline with brown veins. Pygophor laterally compressed, long on ventral surface shortening to the very short dorsal surface, two small spines on medio-ventral edge; anal segment short, tubular, anus in apex; styles very short and narrow, widest at base, slender in middle and narrowly spatulate at apex.

♀ Anal segment very short, tubular, anus in apex, anal style spatulate, short, broad.

Length 2.5 mm.; tegmen 3 mm.

Hab.—Singapore, under the leaf-sheaths of bamboo. (Muir, February.)

Several specimens contain *Stylops* puparia.

Arcofacies, gen. nov.

Vertex at base broader than length, apex narrower than base, truncate with outline broken by facial carina, lateral edges distinctly keeled, no medio-longitudinal carina or exceedingly faint; length of face more than twice the breadth, sides very slightly arcuate, tricarinate, carina deep, especially the median carina at apex; in profile vertex and face at right angles; clypeus strongly curved, at right angles to face, tricarinate; diagonal carina on gena distinct.

Antennæ as long as face, terete, first joint more than half the length of second. Hind margin of pronotum shallowly and roundly emarginate, tricarinate, lateral carinæ convergingly curved, meeting hind margin; mesonotum long, tricarinate. Hind tibiæ only slightly longer than tarsi, one basal, one median and five apical spines; spur cultrate, thick, convex on inner surface, apex with tooth, hind edge without teeth. Tegmina at rest tectiform, sub-acinacicate, radia not quite touching media, a short radial cross-vein below first median sector, cubitus touching first median sector near base, then bent at right angle.

Type—*A. fullawayi*.

This genus comes near to *Tropidocephala*, especially to such forms as *neoamboinensis*, but its quadrate vertex, long antennæ and tectiform tegmina at once distinguish it.

***Arcofacies fullawayi*, sp. n.**

♂ Light green or yellowish, a white median line from apex of face to end of mesonotum bordered with black, antennæ indistinctly ringed with dark brown, a light band bordered with brown across the lateral portions of pronotum, pygophor and apex of abdomen brown; tegmina light brown over basal third, rest hyaline broadly marked with black, the markings extending from hind margin over middle of cubitus, base of first median sector, radial cross-vein, along radia and subcosta to costal margin, and over media and second median sector to apex; in the dark portion the veins bear white spots, a series of black spots along cubitus, semi-hyaline mark along inner margin of clavus; apical edge of tegmen sinuous; wings hyaline with brown veins.

Pygophor slightly compressed, ovate, a small rounded projection on lower edges of sides, anal segment short, anus at apex, below anus roundly emarginate with rounded corners projecting, but no spines; styles long, reaching to anal segment, base broadest and flattened, tapering to fine apex which is slightly curved and flattened.

♀ Styles (ovipositor sheath) compressed laterally above base.

Length 2.5 mm.; tegmen 3 mm.

Hab.—Manila (D. T. Fullaway, March; Muir, February).

NOTES AND DESCRIPTIONS OF TENTHREDELLA
(HYM.)

BY M.T. SMULYAN, PH.D., AMHERST, MASS.*

The following descriptions and notes on the Tenthredinid genus *Tenthredella* are offered here preliminary to the publication of a paper on the New England species of this genus.

***Tenthredella nortoni*, n. sp.**

The type is in the collection of the United States National Museum: No. 19093.

Type locality—Massachusetts.

Male—Head: Straw colour; the following parts black: the back of head, a large spot on front above antennæ and vertex distinctly trilobed anteriorly and somewhat less distinctly laterally, extending from the posterior margin of the head to between the bases of the antennæ mesally and connecting rather narrowly about half way between the posterior margin of the eye and the posterior margin of the head with a smaller elongate spot behind the upper part of the eye and which extends back about half way towards the posterior margin of the head; an elongate brownish spot on the posterior half of cheek, the upper portion of which is black; antennæ black, the inside of the basal segment in part rufescent, or straw colour. Head behind eyes distinctly narrower than through them; vertex plate quite convex; supraantennal ridges fairly prominent.

Thorax black; the following parts straw colour: prosternum except medially and longitudinally, a minute spot on the ventral face of the propleura on each side, margin of pronotum (interrupted dorsally), which may broaden out on the posterior dorsal margin of the lobes of collar and on the lower portion of the lateral face of the pronotum, pronotal lobe, a V-spot on prescutum, tegulæ (brownish in part), transverse mesoscutel extensions, upper margin of mesoepimeron, an approximately right-angled band on the lower limit of mesoepisternum (wider on the anterior half) and which may be narrowly interrupted about in the middle, pectus except a rather broad band on each side and more narrowly meso-anterior-

* Contribution from the Entomological Laboratory, Massachusetts Agricultural College.
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ly, a large spot on the metaepisternum, upper margin of metaepimeron narrowly, transverse metascutal extensions, and the upper margin of the metapostscutellum narrowly sometimes. Mesoscutellum fairly strongly convex; mesoepisternum sharply pointed.

Abdomen—From pale to quite pale ferruginous; two basal terga completely and more or less of the third or third and fourth except medially and longitudinally, black; sides of basal tergum and basal half of venter straw colour.

Legs—Straw colour; the following parts black: the outside of the anterior coxæ more or less and the intermediate above or above and outside, the posterior coxæ except the inner face and the inner longitudinal half beneath, a longitudinal band on the anterior and intermediate femora above (it may be abbreviated in greater part towards the base on the former), the posterior femora behind and faintly at base before, a longitudinal line on the anterior and intermediate tibiæ above which broadens out apically, posterior tibiæ entirely or almost entirely, the intermediate tarsi above and the posterior except the apical segment (may be only brownish in both).

Wings—Fore wings hyaline, or faintly clouded; costa may be brown; stigma brown to dark brown; costal cell only slightly translucent and quite strongly beyond costal cross-vein; veins blackish. Hind wings hyaline, apical portion may be very faintly clouded; veins brownish to blackish.

Length—9–10 mm.

Described from one specimen.

This species may be Norton's *angulata*, the type of which is lost. It answers fairly well to the description of *angulata*, except in an important respect in connection with the coloration of the head, viz., the presence of the lobate black spot on the front above the antennæ and vertex. It is possible, of course, that Norton failed to mention this, but he noted it in describing *lobata* and *angulifera*, both of which were described previous to *angulata*. The lobate spot in *lobata* and its relation to the black behind the upper part of the eye, which is the same as in *nortoni*, is accurately noted in a later redescription of *lobata* (Trans. Am. Ent. Soc., II, 1868–9, p. 229), but the redescription of the coloration of the head

of *angulata* in the same publication does not differ materially from the original description.

Habitat—Mass.; N. Y.; N. J.

***Tenthredella rohweri* (new name).**

Allantus tricolor Harris, ms. (nomen nudum).

Allantus tricolor Norton, Bost. Jour. Nat. Hist. VII, 1860, p. 247, n. 22, ♀.

Tenthredo tricolor Norton, Trans. Am. Ent. Soc. II, 1868-9, p. 236, n. 22, ♀ (preoccupied).

The type is in the Harris Collection in the Museum of the Boston Society of Natural History, Boston, Mass., manuscript number 515; in rather poor condition. It was taken by J. W. Randall in 1836, probably in the vicinity of Hallowell, Maine.

Tenthredo tricolor being preoccupied, a new name is necessary for this species.

***Tenthredella macgillivrayi*, n. sp**

Tenthredo mellinus var. *a.* Norton, Trans. Am. Ent. Soc. II, 1868-9, p. 227, n. 2, ♀.

The specimen of *T. mellinus* var. *a.* Norton, which I select as the type of this species is Norton's original specimen, and is in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts. Type locality, Norway (Norton), Maine.

A paratype from New Hampshire ("Twin Mt.") is in the collection of the New Hampshire Agricultural Experiment Station, Durham, New Hampshire.

A metatype from New York (Gloversville) is in the New York State Collection, New York State Museum, Albany, New York.

Female—Head: Dark ferruginous; the following parts yellow: clypeus, labrum, mandibles, a small spot at the base of the antennæ near eye, and a very faint, narrow, complete, or partial, inner orbit (in a New York specimen which I have seen the inner orbit was more distinct), a small spot in the anterior portion of the frontal fovea, and the occiput narrowly below and on the sides, black. Head behind eyes only very slightly narrower than through them; supraantennal ridges fairly prominent and sometimes only to about half way towards the anterior ocellus.

Thorax—Dark ferruginous; the following parts black: prosternum, propleura, lateral face of pronotum in part faintly, a large

spot on the mesoscutum on each side, the lower margin of the mesoepimeron in part sometimes, small posterior medial portion of pectus, and the metascutum anterior to cenchri; tegulae and metaepisternum pale yellow. Mesoscutellum only slightly convex; mesoepisternum from fairly sharply to quite sharply pointed.

Abdomen—Dark ferruginous; sides of basal tergum yellowish-white.

Legs—Darkish ferruginous (paler towards the extremities); anterior pair yellowish before; coxæ sometimes slightly at the base, and approximately the apical half of the posterior femora except beneath, black.

Wings—Front wings pale honey-yellow; stigma brown, basal half paler; costal cell from fairly to quite strongly translucent; veins black, or blackish, brown towards base of wing. Hind wings faintly honey-yellow; veins brown.

Length 10.5—11 mm.

Described from two specimens.

The four specimens which I have seen are quite constant, and are apparently quite distinct from *mellina* (Norton).

Habitat—Norway (Norton), Me.; Twin Mountain, N. H.; Gloversville, N. Y. (Aug.); "Can."

***Tenthredella cinctitibiis abdominalis*, n. subsp.**

The type is in the collection of the United States National Museum; No. 19094.

Type locality—"Carriage Road," Mt. Wasington, N. H. (Mr. Geo. Dimmock).

Female—Differs from *cinctitibiis cinctitibiis* in having the abdomen beyond the fourth segment ferruginous and the mesoscutellum only very slightly convex.

Length 11 mm.

Described from one specimen.

There is another specimen of the same sex in the National Museum, but it bears no locality label.

***Tenthredella lobata maculosa*, n. subsp.**

Allantus lobatus var. *a.* Norton, Bost. Journ. Nat. Hist. VII, 1860, p. 253, n. 32, ♀.

Tenthredo lobatus var. *a.* Norton, Trans. Am. Ent. Soc. II, 1868-9, p. 229, n. 6, ♀.

Norton's specimen of var. *a.*, as far as I know, is lost, but there is an authentic female specimen from "Connecticut" in the Norton Collection in the Peabody Museum, Yale University. Can this specimen be the original one?

Type locality—Farmington, Connecticut.

Female—Differs from *lobata lobata* as follows:

Head—A yellowish, or yellowish-white spot, or longitudinal line usually on the posterior portion of the vertex plate on each side, very often a minute elongate spot at the terminus of each arm of the epicranial suture; the black spot on the posterior half of the cheek sometimes coalesces with that along the upper part of the eye; basal segment of antennæ usually black inside, and the yellowish line outside sometimes absent. Supraantennal ridges from moderately prominent to prominent.

Thorax—Margin of pronotum not interrupted antero-dorsally; V-spot on prescutum very often not complete posteriorly; the following additional parts yellow or yellowish-white; a short longitudinal line on the mesoscutum on each side of the posterior portion of the prescutum a triangular spot at the posterior end of the mesoscutum immediately in front of each anterior angle of the mesoscutellum, the anterior margin of the mesoscutellum in part rarely, a small spot on the metascutum behind and under each cenchrus, and the greater mesal upper half of the metapost-scutellum; as a rule only a small spot at the upper anterior angle of the mesoepisternum, and very often a small yellowish-white, or straw-coloured spot at the posterior end of the pectus on each side of the median longitudinal suture. Mesoscutellum from slightly to moderately convex; mesoepisternum from moderately to fairly sharply pointed.

Abdomen—Venter with only the pleura straw colour.

Legs—Trochanters black above, sometimes almost entirely; anterior femora usually black behind; very frequently intermediate femora black except more or less before; the black on apical portion of posterior tibiæ often more extensive above—about half way up towards base.

Wings—Fore wings sometimes hyaline; costa not brown.

Described from a type and five paratypes, the female in the Peabody Museum referred to above being selected as the type. Two of the paratypes are in the collection of the Boston Society of Natural History, two in the collection of the American Entomological Society at Philadelphia, and the fifth is in the collection of the Conn. Agricultural Experiment Station at New Haven, Conn.

Male—The male differs from the female as follows: Greater part of lateral face of pronotum straw colour; an approximately right-angled band on the mesoepisternum, posterior mesal half of pectus, and basal half of venter entirely, straw colour; intermediate coxæ black only at base above, the posterior coxæ except inside and inner longitudinal half beneath, and the apical two-thirds of the posterior tibiæ black (continued to base above).

Length—Female 11–13 mm.; male 11 mm.

The male is here for the first time described, and is the only one that I have seen. It belongs in the collection of the Boston Society of Natural History.

This subspecies approaches *fisheri* Rohwer from Maryland, and may prove to be the same.

Habitat—Sharon, Auburndale, and Woods Hole, Mass. (June and July); Farmington (Norton) and Westville, Conn. (June). I have records also from New York, New Jersey, and Virginia, but they may refer to *lobata lobata*.

INSECT IMPORTATIONS INTO NEW JERSEY DURING THE SPRING OF 1915.

BY HARRY B. WEISS, NEW BRUNSWICK, N. J.

The following insects arrived in New Jersey during the spring of 1915 on nursery stock imported from various countries in Europe. Practically all were alive when taken and many came over in numbers sufficient for them to gain quite a foothold. Identifications, for the most part, were made by specialists through the courtesy of the U. S. Bureau of Entomology.

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Homoptera.

Pseudococcus sp. on palms and rubber plants from Belgium and *Taxus* sp. from Japan. *Coccus hesperidum* Linn. on bay trees from Belgium. *Chrysomphalus dictyospermi* Morg. on palms from Belgium. Plant lice on maples from Holland. *Lepidosaphes ulmi* Linn. on boxwood from Holland. *Targionia bififormis* Ckll. on orchids from Brazil. *Aulacaspis rosæ* Bouche on rose stocks from France. *Parlatoria pergandei* Ckll. on maples from Japan. *Pseudaonidia pæoniæ* Ckll. on azaleas from Japan and *Chrysomphalus perseæ* Comst. on orchids from Central America.

Lepidoptera.

Evetria buoliana Schiff. on *Pinus montana*, *Pinus mughus*, *Pinus wateriana* from Holland. *Apatela rumicis* (pupæ) on roses from France. *Apatela auricoma* (cocoon) on shrubs from France. *Psychid* cases on azaleas from Japan. *Pyralid* or *Tortricid* larva on rhododendrons from Holland. *Noctuid* larva in packing from France. *Lepidopterous* larvæ on boxwood tips from Holland.

Coleoptera.

Rhynchophrid larva in soil around roots of blue spruce from Holland. *Agriotes* sp. (larva) in soil around rhododendron roots from Holland. *Curculionid* larva in soil around rhododendron roots from Holland. *Hister stercorarius* Hoff. in soil around rhododendron roots from Holland. *Cercyon hæmorrhoidalis* Fab. on rhododendrons from Holland. *Trechus* sp. (carabid) on azaleas from Japan.

Hymenoptera.

Isosoma orchidearum punctures in orchids from Brazil, Guatemala, U. S. of Columbia and Venezuela. *Dryophanta longiventris* Hartig (galls) on oaks from France. *Itopectis* and *Brachy-cryptus* spp. from cocoons on azaleas from Japan.

Diptera.

Phytomyza aquifolii Goureau (leaf miner) in English holly

from Holland. Cecidomyid gall on pine from Japan. Larvæ (*Ortalidæ*) in soil around roots of blue spruce from Holland.

Hemiptera.

Tingitid eggs on rhododendrons from Holland.

Acarina.

Notaspis (*Oppia*) sp. on boxwood from Holland.

The only desirable members of this list are *Hister stercorarius*, which is insectivorous and possibly the Hymenopterous parasites *Itopectis* and *Brachyryptus* spp. With the exception of *Cercyon hæmorrhoidalis*, which feeds on decaying vegetable matter and is therefore of no economic importance, most of the other species are, to a greater or lesser extent, injurious. The most unwelcome importation was *Evetria buoliana*, the European Pine Shoot Moth, which came over in the larval stage in surprising numbers on six shipments of pines from Holland. As many as ten infested buds were found on numerous plants. Two shipments were burned entirely and all buds on the remainder trimmed off and destroyed.

In point of numbers, the Homoptera as usual occupy the first place. The following table shows how the different orders have been represented on imported stock during the past three seasons in New Jersey.

	Spring, 1915	Spring, 1914	Fall, 1914
Acarina.....	1	1	0
Lepidoptera.....	7	3	2
Coleoptera.....	6	6	0
Hymenoptera.....	4	3	1
Homoptera.....	9	18	11
Hemiptera.....	1	2	1
Diptera.....	3	0	0
Orthoptera.....	0	1	1

Insect importations will undoubtedly continue just as long as nursery stock is imported and the protection afforded by inspection is necessarily only partial and sometimes ineffective, depending, as it does, on the ability and carefulness of the individual inspector.

TWO NEW TIPULIDÆ FROM NORTHERN ALBERTA.

BY W. G. DIETZ, M.D., HAZLETON, PA.

Among a small collection of Tipulidæ, collected in the Athabasca country in Northern Alberta, Canada, and sent me by Dr. C. Gordon Hewitt, Dominion Entomologist of Canada, for determination, are two species new to science, the description of which herewith follows. I wish to state that the types of all are in the Entomological Collection of the National Museum at Ottawa, Canada.

***Limnobia gracilis*, sp. n. (Fig. 27)**

Wings spotted; marginal cross-vein at tip of first longitudinal vein, the fuscous spot at this point suboval. Halteres pale; knob dark fuscous, pale at apex; femora with two brown bands before the apex.

Fig. 27. *Limnobia gracilis*, wing.

Male—Length of body 8.5 mm., of wings 9.5 mm.

Legs—Middle leg: femur 7 mm., tibia 6 mm., tarsus 5.5 mm.; Posterior leg: femur 7.5 mm., tibia 7.5 mm., tarsus 6 mm.

Head fuscous, rostrum dark brown, shining above; palpi slender, fuscous, third joint yellowish, the second joint shorter than the others. Antennæ short, not reaching the anterior margin of the mesonotum, joints one and two yellowish, stout, the former longer than the latter; flagellum very slender, joints elongate, each with a few very long and some short hairs, but without whorls. Head above and beneath beset with short, anteclinal blackish hair. Occiput somewhat shining and more grayish posteriorly; orbits edged with pale yellow. Eyes large, rather narrowly separated above and almost contiguous beneath.

Thorax above sordid yellow, prolonged into a long slender neck with a brown line each side of median line. Collare somewhat infuscate at middle. Mesonotum with four dark fuscous stripes, the median pair reaching from the transverse suture to the anterior margin and narrowly separated by a yellowish line; the lateral stripes abbreviated anteriorly. Pleura yellowish fuscous, with a silvery sheen. Legs sordid yellow; femora with two fuscous bands before the apex, separated by a pale band; tibiae slightly infuscate towards the apex; outer tarsal joints fuscous; the entire leg, except the coxæ, beset with short, black pubescence.

Wings moderately wide, grayish, marked with four fuscous spots near the costal margin and nebulosities along the posterior-apical margin, as follows: A rounded spot at base of first basal cell; a trapezoidal spot at beginning of præfurca, extending from the first longitudinal vein, but not quite attaining the fourth longitudinal vein; a large subquadrate spot at end of subcostal vein; a suboval spot at end of first vein; transverse veins in apical part of wing edged with fuscous. A nebulous fascia extends across the apical part of the wing and within the wing margin into the fifth posterior cell; a nebulous patch at end of vein six and another large one in the axillary cells. The space between the third and fourth costal spots is yellowish. The marginal cross-vein is at the apex of vein one; the subcostal vein ends somewhat anterior to the proximate end of the submarginal cell, and its cross-vein runs obliquely with vein one. Halteres pale; knob dark fuscous, its apex pale.

Abdomen somewhat shining; first tergite fuscous, yellow at the sides; tergites 2-4 yellow, banded with fuscous posteriorly; fifth tergite yellowish fuscous, tergites 6-8 fuscous; underside similar to the upper. The whole abdomen clothed with short, pale pubescence. Hypopygium ferruginous, pleural lobes large, appendages recurved, beaklike, acute.

Holotype—Tsolinoi Lake—about five miles north of Athabasca Lake. July 5th, 1914.—F. Harper.

Its nearest ally is *L. cinclipes* Say, from which it differs by its smaller size and the fuscous spot at end of vein one is not circular as in that species. It resembles somewhat in coloration *L. cali-*

fornica O. S., but is very much smaller and lacks the limpid spaces in the wing markings of that species.

***Dicranomyia aquita*, sp. n.** (Fig. 28).

Yellowish fuscous. The subcostal vein ends before or but little beyond the origin of the præfurca, its cross-vein at some distance from its apex; stigma light fuscous; discal cell closed.



Fig. 28. *Dicranomyia aquita*, wing.

Male—Length 7 mm.; wing 9.5 mm.

Head gray; rostrum yellowish, more than one-half the length of the head. Palpi and antennæ fuscous, basal joints of flagellum incrassate ovoidal, outer joints elongate, beset with short hairs, but no whorls; occiput beset with short blackish hairs.

Thorax—Collare sordid yellow and, like the neck, brown above; mesonotum grayish fuscous; three broad, but ill-defined, darker stripes; scutel and metanotum grayish; pleura sordid yellow; sterno- and upper part of pteropleura infuscate. Halteres pale, knob fuscous. Legs yellowish, apical part of femora slightly, of tibiæ markedly, fuscous; first two joints of tarsi light fuscous, remaining joints darker. Wings hyaline with faint grayish tinge, immaculate, stigma slightly infuscate, the subcostal vein ending same distance before—in some specimens almost opposite or at most very little beyond—the origin of the præfurca, its cross-vein rather remote from the apex, præfurca longer than vein three from beginning to anterior cross-vein, discal cell closed, the costal margin very closely beset with short, blackish hairs. Abdomen yellowish, with broad median, fuscous stripe, the lateral margin indistinctly margined with fuscous; hypopygium concolorous, the part supporting the large pleural lobes velvety brown.

Female—Length 8 mm.; wing 8.5 mm., similar to male; basal joints of antennal flagellum scarcely incrassate; the lateral margins

of abdomen more distinctly margined, ovipositor concolorous, upper valves robust, greatly attenuated towards the apex, which projects slightly beyond the lower valves.

Holotype—Fort Resolution—Aug 24th, 1914. (F. Harper.)

Allotype—Topotypic.

Paratypes—2 ♂♂, 3 ♀♀, topotypic; 1 ♀, Island at mouth of Rocker River, Aug. 16th, 1914. (F. Harper.)

The variation in the length of the subcostal vein gave me the impression at first that I had two distinct species to deal with. Its nearest ally appears to be *D. distans* O. S., but the subcostal cross-vein is less remote from the apex of the subcostal vein.

THE 1914 RECORD OF CATOCALÆ AND OTHER LEPIDOPTERA.

BY R. R. ROWLEY AND L. BERRY, LOUISIANA, MO.

(Continued from page 307.)

On the 17th took a *nebulosa*, a female *subnata*, *cara* and others. As the 18th was cool, "Catos" were few and mostly high on the trees.

July 19th—In the woods with George Dulaney and Lowell Pinkerton. Took one *viduata*, six *lacrymosa* (one of these was a *paulina*), *habilis*, *neogama*, one *nebulosa*, *palæogama*, two *piatrix*, the first of the season, *cara* and other moths. Temperature 90°. No "Catos" in the hollows, and not plentiful on the hillside. They were resting both high and low.

July 20th was close and warm, above 90°. Took nine *lacrymosa*, four *viduata* and the first *vidua* of the season, *resecta*, *habilis*, *neogama*, *palæogama* and ragged specimens of *junctura*.

The 21st was cloudy and drizzling all day. Took one *lacrymosa*, one *nebulosa*, four *cara*, five *viduata*, five female *resecta*, one *flebilis*, and saw other species taken on the 20th. The moths were under leaves and bark and usually high in the trees. George Dulaney accompanied the senior author on both the 20th and 21st.

The temperature of the 24th was over 100°. Found every tree trunk, stump and hole in the bank full of *Catocalæ*. Drove them up the branch in a perfect swarm. Saw *cara*, *nebulosa*,
October, 1915.

neogama, *vidua*, *palæogama*, *relecta* and *innubens* in numbers. They flew from the roots and tree trunks by the scores. Took ten *viduata*, and saw many more. Moths were very scary and hard to take, flying at our approach. Everything was at the bases of the trees and flew low. Even *viduata* flew from tree to tree, which is unusual, as they fly from side to side of the same tree, and all were within one and a half feet of the tree bases, and several were seen on other than white oak. Took three *vidua*, and saw more. Saw many *habilis*, and took one *lacrymosa*.

Compared with the 19th, 20th and 21st July, there were ten *Catocalæ* on the 24th to one, and they were in the hollow and on the hillside alike. Never saw so many *Catocalæ* in one day before.

On the 25th the senior author visited "Catocala hollow" in the forenoon, starting at seven and returning at noon. Found the hollow and hillsides full of moths, fully as plentiful as on the 24th. Saw a number of *nebulosa*, taking two. Saw a very large red moth with front wings lighter than those of *cara*. It looked larger than any other "Cato" the senior author ever saw. It was probably *amatrix*. One *nebulosa* that escaped the collector was larger than *cara*. On the hillside took ten *viduata* and seven *vidua*, three *lacrymosa*, and saw specimens of other species in abundance. The moths were at the base of every tree and very numerous. *Relecta* was everywhere and *palæogama* by the hundreds. A few "Catos" were three or four feet above the tree bases, and all were wary as on the 24th, although the days were very unlike, the 24th being sunny and the 25th close, cloudy and threatening rain. *Vidua* was on almost all kinds of trees, white and black oak, sugar maple and hickory. *Lacrymosa* was usually on black oak, *palæogama* and *relecta* everywhere. *Viduata* almost always on white oak. *Habilis* everywhere.

On the 20th of July observed a *Limenitis astyanax* ovipositing on wild crab. An egg that was taken home hatched on the 25th of July and the young larva readily fed on apple. It pupated Aug. 16th, and gave an imago August 21st.

July 27th, p.m., thermometer above 100°. *Catocalæ* as plentiful as on previous days. Along the hollow, took four fine *nebulosa*, four *cara*, four *lacrymosa*. On the hillside took seven *viduata*, three *vidua*, and saw many *habilis*, *ilia*, *palæogama* and

neogama. Took a beautiful variety of *palæogama* with much white on the wings. Moths both high and low on the trees, but mostly low. Took three *viduata* on the body of the same white oak. Of the seven specimens of this species taken on this date, five were on white oak, and two on hickory. *Nebulosa* has the habit of flying before you and alighting on dry leaves, the ground or grass, apparently spurning concealment. At rest it is usually found under leaning tree trunks, or logs above the ground. Not very difficult to take after alighting.

The last collecting trip in July was on the 29th and the temperature was under 90°. The party consisted of the senior author, John Degroodt and Misses Gertrude Wallace and Charline Parks. We took eleven *viduata*, two *vidua*, six *lacrymosa*, three *phalanga*, one *nebulosa*, one *junctura*, and the first *angusi* of the season. Moths were not so plentiful as when the temperature was higher. Of the *lacrymosa* specimens two were *paulina* and one *evelina*. The last *viduata* taken on this date was resting on shag-bark hickory, and was a brand new female, the first female of the entire season, and the sixty-second taken in the past 23 days. The two *paulina* specimens and that of *evelina* were also females. The first *viduata* was taken on the 6th of July and the first *lacrymosa*, a female, on July 12th.

At 7.30, August 1st, the thermometer registered 80°. At 1.30 p.m. 90°. In a five-hours tramp did not see 25 *Catocalæ*, and they were high on the trees. Hard to account for this decrease in the number of moths. Took three *vidua* and one *lacrymosa*. Did not see a single *viduata*.

August 3rd, p.m., 90°; clear, with a slight breeze. There were some *Catocalæ* both in the valley and on the hillside. Everything scary. Took five *viduata*, but three of them were battered specimens, one *nebulosa* with bad hind wings, one ragged female *junctura*. Saw a few *residua*, *relecta*, *vidua* and more of *habilis* and *palæogama*. Nearly everything ragged. Saw a *lucetta* and a few wily *lacrymosa*.

Aug. 6th—Temperature 95° and threatening rain. *Catocalæ* fairly abundant both in the valley and on the hillside. Took a fair *nebulosa* and a battered *junctura*, an immense but ragged *cara*, eight *viduata*, but three were unfit for cabinet purposes and all were males, four male *lacrymosa*, one *lucetta* and one *angusi*. Saw

numbers of *neogama*, *vidua*, *palæogama*, *habilis*, *residua*, *resecta*, and a few *innubens*, all ragged. Moths were mostly at the bottom of the tree trunks. Everything hard to approach.

August 8th, 95°—dry. *Catocalæ* fairly common, but out of date. No new species. Took five *viduata*. Two were ragged and one was a female, the second of the year. Captured three fine *vidua*, one *lacrymosa*, two *habilis*, one *phalanga*, one *flebilis* one *lucetta*. The last two were somewhat damaged. Took a brand-new *neogama* and a new *cara*.

Aug. 12th—Warm, clear, woods dry and bare. No water in the creek. *Catocalæ* not numerous. Took three *viduata*, four *lacrymosa*, six *vidua*, *resecta*, *habilis*. Saw *neogama*, *palæogama*, *innubens* one *nebulosa*, *cara*, *residua* and *angusi*.

Aug. 14th—Imagos of *Callidryas eubule*, *Terias lisa* and *Nathalis iola* fairly common.

Aug. 15th—The sun rose with the thermometer at 56°. Temperature warmed up to 90° by mid-afternoon. Saw few *Catocalæ* in the woods. Took one *viduata*, one *lacrymosa* and one *neogama*. Saw a number of *lacrymosa*, but everything was scary and went "sky-high" when approached.

On August 19th Miss Gertrude Wallace took a fine fresh *piatrix* on a window screen.

August 26th—66° at 7 a.m., 82° at noon. Up "Catocala hollow" in the afternoon and in three hours saw but 29 moths, three *habilis*, two *resecta*, one *innubens*, two *neogama*, and the rest *vidua*. Moths high on the trees and on the sunny side.

The senior author did not see a single specimen of *Catocala robinsoni* in 1914, and this is the more surprising, as moths of that species were so plentiful in August and September, 1913.

Aug. 30th—Temperature nearly 90°. In the woods in the afternoon found moths few, and none of those taken were even passable specimens. Captured one *lacrymosa*, one *neogama*, three *habilis*, two *vidua* and one *scintillans*.

Sept. 6th—Saw a few *vidua* one *neogama*, and one *lacrymosa*.

Sept. 19th—Saw two *vidua* and one *palæogama*, but all were ragged.

On Oct. 5th and 11th took five new specimens of *Junonia*

cænia, *Colias eurytheme*, *Pyrameis cardui* and *huntera*, *Danaïs archippus*.

This *Catocala* record for 1914 is remarkable for the abundance of *viduata* and *lacrymosa*, species usually rare; the over-abundance of *amica*, *palæogama*, *relecta*, *neogama*, and *residua*, always fairly common; the re-appearance of *serena* not reported from here since 1901; the presence of *subnata*, never more than rare here; the appearance in increased numbers of those splendid species, *junctura*, *nebulosa* and *dejecta*; the falling off in the numbers of *angusi* and its variety, *lucetta*, *vidua*, *cara* and *amatrix*; in the entire absence of *robinsoni* fairly common here, *parta* and *cerogama*, always rare.

Of the earlier moths, *ilia* and *polygama* were common as usual, *grynea* and *insolabilis* much rarer than usual, *ultronia* more abundant than ever seen here before, *clintoni* and *minuta* fairly common, and both rare here of late years, *innubens* and its variety, *scintillans*, common as usual; *illecta* always common, *flebilis* always rare, *habilis* unusually numerous and *epione* in greater numbers than ever known here before. No *coccinata*, *judith* nor *consors* reported in this year. *Whitneyi* was added to our fauna for the first time this season.

Mr. Ernst Schwarz and other St. Louis collectors report the taking of *titania*; E. A. Dodge found *luciana*, *somnus*, *parta* and *meskei* fairly common in Nebraska in late July and August. Mrs. O. F. Hiser found *coccinata* common about Nevada, Iowa, in the early summer; Perry Glick and A. L. Porter took hundreds of *Catocalæ* at Hamilton, Mo., in late July, and Miss Pattie Hutchinson gathered data for the study of the 1915 crop of Texas *Catocalæ*.

Eggs of *Catocala coccinata* began hatching on the 29th of April. The young larvæ were dark, cross-banded by smoky brown and dirty green. Head black, small. Took readily to bur-oak leaves. On May 3rd the larvæ were one-fourth of an inch long, gray with cross-bands of black. Head small, black. Larvæ very active, like those of *ilia*. On the 8th of May larvæ over half an inch long, brownish gray, indistinctly striped longitudinally. A line of small mid-lateral black dots. True legs black, head small, dark colour. A slight hump over the third pair of prolegs.

May 17th—Larvæ one and one-fourth inches long, light gray, with yellowish tubercles in small dark basal patches. Both true

and prolegs gray. A sublateral row of short setæ. A rather strong mid-dorsal, blunt tubercle over the third pair of prolegs. A rather strong double tubercular ridge over the 8th abdominal segment. Head flattened in front, gray with yellow, *cara*-like spots at upper lobes (of the head), bounded outside by a black dash.

May 20th—Larvæ just after moult, one and one-half inches long, light bluish gray with light brown tubercles and light brown prolegs and cross-dorsal patches on the 5th and 8th abdominal segments, of the same colour. Head dished in front with light brown lobes above, and outer bounding black dash. A strong tubercle on dorsum of 5th abdominal segment and a pair of lesser tubercles on dorsum of the 8th abdominal segment. All three of these tubercles are brown, the one on the 5th with whitish tip. True legs gray. Sublateral row of short setæ. Prolegs rather long.

May 23rd—Larvæ full grown, two and two and one-fourth inches long, ashen (the exact colour of the gray branches of bur oak). The strong tubercle over the 5th abdominal segment, the pair of strong tubercles over the 8th abdominal segment and the roughness of body, due to the other tubercles, give a strong case of mimicry (like the knotty twigs of bur oak).

The general body tubercles yellow-brown, as also the dorsal pair over the 8th abdominal segment, but the latter are set on a bifid ashen ridge. The tip of the tubercle over the 5th abdominal segment has the body colour, but a little lighter at the tip. Enclosing and extending downward to the ventral surface from the 5th abdominal dorsal tubercle is an irregular band of brown and a similar patch either side of the 8th abdominal dorsal ridge.

A sublateral row of short setæ. Head as in *cara*, bifid above with lighter lobes flanked outside by a black dash. Ventral side pale pink with strong central black spots. There is a slight white patch either side of the first abdominal segment.

Larvæ began spinning May 27th. Just before spinning the larvæ evacuate a bright red fluid.

The first imago was on June 17th. Pupal period, 15 to 18 days.

Catocala lacrymosa.

Eggs of this species hatched on the 8th and 9th of May, and the larvæ were very small, slender, dirty-green, indistinctly lined longitudinally. Head small, dark green. Had grown little up to the 14th. Were feeding on pecan leaves. May 16th, larvæ small, light and striped longitudinally. Head small and light brown. Some of the larvæ moulted for the first time on this date, or eight days from hatching. May 20th—Larvæ at second moult one-third of an inch long, steel-gray, lined longitudinally with white. Head gray and striped. May 24th—Larvæ two-thirds of an inch long, light gray with double elongate dorsal black lunules on the first, second and indistinctly on the third abdominal segments. Head a little darker than the body.

May 31st—Larvæ nearly an inch long, light ashen gray, streaked with broken dark lines longitudinally. A pair each of black spot-like markings over the first and second abdominal segments. True and prolegs whitish. Head coloured as the rest of the body. No stigmatal band and no row of sublateral setæ. Ventral side of body whitish with large black spots. At this date most of the larvæ had succumbed to the excessive heat.

June 19th—The last and only larva left from a hundred that hatched on the 8th and 9th of May passed its third moult. Feeding on pecan. June 26th—Larva passed 4th moult, was over one and one-half inches long, light bluish gray, traversed longitudinally by fine lines of black dots. Head lighter than body colour, with brown longitudinal markings. A short lateral mouth dash of black. Tubercles white, sometimes in black basal patches. True and prolegs light gray. Head shaped as in other black-winged hickory feeders, large. Row of short sparse lateral setæ. No humps. July 3rd—Larva about one and three-fourths inches long, light bluish gray, with fine longitudinal streaks, white tubercles, lateral row of short sparse setæ. Short black streaks about the bases of the tubercles. Underside of body lighter than above, a little greenish and with brown median spots. No humps. Head as in other black under-wings. July 7th—Larva passed 5th moult, and was about two inches long, light bluish-gray with white tubercles. Head large, round and of body colour, with brown lines or streaks

and with a curved black streak on each side of the dorsal part of the head, reaching from the first thoracic segment nearly half the head length. Either side of the mouth is a short, black curved line. Both true and prolegs body colour. No hump.

June 9th—The larva died this morning, two months from hatching. The larval life of this species is either unusually long or pecan is not its proper food plant. A number of the hickory feeders are of slow growth.

NOTES ON A COLLECTION OF ORTHOPTERA FROM
PRINCE EDWARD ISLAND AND THE
MAGDALEN ISLANDS, QUE.

BY E. M. WALKER, TORONTO.

Through the kindness of Mr. James A. G. Rehn, of Philadelphia, I had the privilege recently of examining a small collection of Orthoptera taken by Mr. Bayard Long on Prince Edward Island, the Magdalen Islands, and certain other localities in Eastern Quebec and New Brunswick. The specimens from Prince Edward Island and New Brunswick were collected during the summer of 1912, those from the other Quebec localities during 1910.

The collection is of interest mainly on account of the localities, Prince Edward Island and the Magdalens having been hitherto quite unknown from an orthopterological standpoint. Only 14 species are represented among the 256 specimens in the collection, and although this small number is probably far short of the total number of species that inhabit these regions, it is doubtless indicative of a restricted boreal fauna, all of the species being well-known inhabitants of the Canadian Zone and most of them of wide distribution in the latter.

The most interesting features of the collection are the occurrence of an extremely large form of *Melanoplus extremus* Walk. in the Magdalen Islands and of the typical race of *Podisma glacialis* Scudd. in Prince Edward Island and Quebec, this race not having been definitely recorded before from Canada, though from its occurrence in Northern New England it was to be expected here.

The following is a list of the localities and dates of capture as given on the labels:—

PRINCE EDWARD ISLAND.

Bloomfield, August 7.	Souris, July 28, August 24.
Brackley Point, August 31.	Southport, August 9.
Bunbury, August 28.	St. Andrews, August 26.
Cape Aylesbury, August 29.	Summerside, August 7.
Charlottetown, September 1.	Tignish, August 6.
Douglas, August 26.	Tracadie, August 31.
Dundee, August 26.	West River, Bothwell, August 24.
Lake Verde, August 9.	
Malpeque, August 29.	
Mt. Stewart, July 30.	

NEW BRUNSWICK.

Moncton, September 4.	Point du Chene, August 11.
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QUEBEC.

Bic, July 14-27.	Glin House, July 10.
Cacouna, July 26.	St Fabien, July 23.
Father Point, July 21.	

MAGDALEN ISLANDS, QUE.

Alright Island, August 21.	Grindstone Island, August 23.
Basin Island.	Grosse Island, August 16.
Coffin Island, August 17.	Wolfe Island, August 21.

LIST OF SPECIES.

Chorthippus curtipennis (Harris).—Bloomfield, 1 ♂, 2 ♀; Bunbury, 4 ♂, 4 ♀; Charlottetown, 1 ♂, 2 ♀; Dundee, 4 ♂, 1 ♀ (1 ♂, juv.); Souris, 1 ♂, 2 ♀; Southport, 1 ♂, 1 ♀; St. Andrews, 1 ♀; Tignish, 1 ♂; West River, Bothwell, 1 ♂, 3 ♀; Moncton, 2 ♀; Bic, 2 ♂, 4 ♀; Cacouna, (dry roadside), 1 ♂; Alright Island, 7 ♂, 5 ♀ (1 ♂, juv.); Coffin Island, 1 ♂; Grindstone Island, 2 ♂, ♀; Grosse Island, 2 ♂.

The series shows the usual amount of variation in colour-

pattern and length of tegnium, though all the species from the Magdalen Islands are brachypterous. One of the females from Bloomfield, a macropterous individual, is strikingly marked, the antennæ, dorsum of head and pronotum being rose-red, the face and lateral lobes of the pronotum grass-green and the tegmina and femora tinged with pinkish.

Mecostethus lineatus (Scudd.)—Bloomfield, 2♂; Bunbury, 1♂, 1♀; Charlottetown, 1♂ (juv.); Tracadie, 1♀ (on sphagnum bog); Alright Island, 1♂.

The two males from Bloomfield are less distinctly marked than usual, the pale costal streak of the tegmina being less distinct, the dorsum of the head and the entire pronotum concolorous, without pale lines along the lateral carinæ.

Mecostethus gracilis (Scudd.)—Dundee, 1♂.

Camnula peelucida (Scudd.)—Charlottetown, 1♂, 2♀; Dundee, 1♂, 1♀; Lake Verde, 1♀; Mt. Stewart, 1♂; Souris, 1♂; Tignish, 1♀; West R., Bothwell, 1♂; Bic, 10♂, 16♀; Father Pt., 2♂, 2♀; Glin House, 1♂, 2♀; Coffin Island, 1♀ (juv.); Grindstone Island, 4♂, 1♀ (♀ juv.).

The labels of the Bic specimens bear the following notes: "Dry shaly shore and rocks at head of Ha Ha Bay," "dry shaly fields near Cap Gurgé," "dry rocks" and "dry grassy rocky fields." The specimens from Father Point are labelled "Rocky shores of St. Lawrence River."

Dissosteira carolina (L.)—Point du Chene (2♂, juv.)

Circolettix verruculatus (Kirby)—Moncton, 1♂; Bic, P. Q., 6♂

The Bic specimens are labelled as occurring on "dry exposures," "dry rocky clearing" and "dry grassy limestone exposures."

These specimens are rather pale, resembling *D. carolina*, though one example is rather dark and mottled. The Moncton specimen is almost black.

Podisma glacialis glacialis (Scudd.)—Dundee, "east on P.E.I. Ry. toward Douglas," 1♀ ("black spruce swamp"). St. Fabien, 1♂ ("bog east of Lac de St. Fabien").

These specimens are quite typical, showing no variation toward the race *canadensis* E. Walk.

Melanoplus fasciatus (Barnston-Walk.)—Dundee, 2♂, 2♀; West River, Bothwell, 1♂; Wolfe Island, 1♂; Alright Island,

near the Narrows, 4 ♂, 3 ♀; Coffin Island, 1 ♂, 4 ♀; Grosse Island, 1 ♀.

The only macropterous individual is a female from Alright Island, in which the tegmina extend slightly beyond the apices of the hind femora. In the other specimens from the Magdalen Islands the tegmina reach about the end of the abdomen in the males and in one of the females; in the others they are somewhat shorter. The specimens from this group of islands are large, and are, for the most part, dark and heavily banded. Six characteristic specimens (3 ♂, 3 ♀) from Alright Island measure as follows:—

MALES.

Length of Body	Length of Tegmina	Length of Hind Femora
23 mm.	14 mm.	12.5 mm.
19 mm.	11 mm.	11.5 mm.
20 mm.	12 mm.	11.8 mm.

FEMALES

Length of Body	Length of Tegmina	Length of Hind Femora
24.5 mm.	6.5 mm.	12.5 mm.
26.0 mm.	14.0 mm.	12.5 mm.
28.5 mm.	19.5 mm.	13.5 mm.

The female from Grosse Island bears a marked resemblance to *M. altitudinum* in the large size, nearly uniform speckling of the tegmina and broken piceous band on the lateral lobes of the pronotum.

Melanoplus extremus Walk.—Souris, 2 ♂; Southport, 1 ♀; Bic, (July 14 and 27), 1 ♂, 1 ♀; Basin Island, 2 ♂, 2 ♀; Coffin Island, 1 ♂, 3 ♀; Grindstone Island, 3 ♂, 2 ♀; Wolfe Island, 2 ♂.

The specimens from the Magdalen Islands are remarkable for their extremely large size, while those from Bic and Prince Edward Island are rather small.

The following measurements show the range in size of the specimens in this series:—

MALES.

Locality	Length of Body	Length of Tegmina	Length of Hind Femora
Basin Is.....	21.0 mm.	14.5 mm.	12.5 mm.
Basin Is.....	24.0 mm.	16.0 mm.	13.5 mm.
Coffin Is.....	24.0 mm.	16.0 mm.	14.0 mm.
Grindstone Is.....	22.0 mm.	14.5 mm.	12.0 mm.
Grindstone Is.....	22.0 mm.	14.0 mm.	13.0 mm.
Souris, P. E. I.....	16.0 mm.	10.0 mm.	10.5 mm.
Souris, P. E. I.....	16.0 mm.	14.7 mm.	10.0 mm.

FEMALES

Locality	Length of Body	Length of Tegmina	Length of Hind Femora
Alright Is.....	28.0 mm.	16.0 mm.	15.0 mm.
Basin Is.....	25.5 mm.	15.5 mm.	14.0 mm.
Basin Is.....	28.0 mm.	16.7 mm.	15.0 mm.
Coffin Is.....	26.0 mm.	15.0 mm.	14.0 mm.
Coffin Is.....	28.4 mm.	17.0 mm.	15.0 mm.
Grindstone Is.....	27.0 mm.	15.0 mm.	14.5 mm.
Grindstone Is.....	27.0 mm.	18.0 mm.	15.0 mm.

One of the males from Souris and the female from Bic are macropterous, the others are all brachypterous.

The large specimens from the Magdalens have the appearance of quite a different insect from the typical *extremus*, but differ from the latter only in size.

Melanoplus femur-rubrum (De Geer).—Bunbury, 2 ♂, 3 ♀; Malpeque, 1 ♀; Moncton, 1 ♂, 4 ♀.

Melanoplus allanis (Riley).—Cape Aylesbury (sand dunes), 4 ♂, 5 ♀; Charlottetown, 1 ♂, 1 ♀; Douglas, 1 ♂, 1 ♀; Dundee, 5 ♂, 4 ♀; Lake Verde, 2 ♂, 1 ♀; Mt. Stewart, 1 ♀; Souris, 2 ♂, 2 ♀; Southport, 1 ♂; West River, Bothwell, 1 ♂, 3 ♀; Tignish, 2 ♂, 2 ♀; Moncton, 1 ♂, 1 ♀; Bic, 3 ♂, 1 ♀; Cacouna, 1 ♀; Father Point, 1 ♂, 1 ♀; Coffin Island, 1 ♂, 3 ♀.

The series is on the whole of typical size and appearance. The pair from Moncton are small and the series from the sand dunes at Cape Aylesbury are rather small and pale, as is usual in specimens from such stations. The specimens from Father Point were taken with *C. pellucida* from the "rocky shores of the St. Lawrence River."

Melanoplus bivittatus Say.—Bloomfield, 1 ♂; Bunbury, 2 ♂; Cape Aylesbury (sand dunes), 1 ♂; Charlottetown, 3 ♂, 2 ♀; Douglas, 1 ♂; Dundee, 2 ♂, 1 ♀; Malpeque, 1 ♂, 1 ♀; Souris (Basel Pond), 9 ♂, 2 ♀; Southport, 3 ♀; St. Andrew's, 2 ♂, 1 ♀; Summerside, 1 ♀; Tignish, 1 ♂, 1 ♀; West River, Bothwell, 2 ♂, 1 ♀; Moncton, 1 ♀.

All the specimens have red hind tibiae. In the Prince Edward Island series the dark streak on the dorsal half of the outer side of the hind femora is heavy and conspicuous, the pale streaks in the lateral canthi of the pronotum are indistinct, while those on the tegmina are faint or absent. One of the males from Dundee is very small, measuring as follows: Length of body, 20 mm.; length of tegmina, 16 mm.; length of hind femora, 12.5 mm.

Conocephalus fasciatus (Say.)—(= *Xiphidion fasciatum*)—
Moncton, 1 ♂.

Gryllus pennsylvanicus Burm.—Brackley Point, (boggy clearing), 1 ♂; Charlottetown, 1 ♂, 1 ♀; Dundee, 1 ♀.

A REMARKABLE MONOPHLEBINE COCCID FROM THE PHILIPPINE ISLANDS.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

A few months ago Prof. C. F. Baker sent me a box of Philippine insects, among which I was surprised to see a male Monophlebid, remarkable for having the costal area of the wings broadly bright red. This feature has long been known to occur in a species, *Monophlebus raddoni* Westwood, from the Gold Coast, W. Africa. The Philippine insect is readily known from the African one by the longer caudal appendages.

Llaveia sanguinea, n. sp.

Male.—Length about 5 mm.; length of wings about 7; antennæ rather thick, middle joints with three whorls of long reddish hairs; eyes dark red, strongly faceted, very prominent, on stout stalks, like a young mushroom; behind each eye is a prominent shining red tubercle; anterior part of thorax dull black, forming a lobe extending over head; posteriorly to this the thorax is shining black, with a broad transverse bracket-shaped reddish-ochreous band; abdomen broad, red, with six long fleshy processes, all much more than half as long as breadth of abdomen, the terminal ones longest, but not very much so; penis long, with a very large raspberry-pink knob; legs red, hairy; wings ample, black with the two hyaline lines as usual, but the extreme base, and the costal region very broadly to within about 1.75 mm. of apex, very bright red.

Hab.—P. Princessa, Palawan, Philippine Is. (Baker 3878.)

Mailed October 15, 1915.