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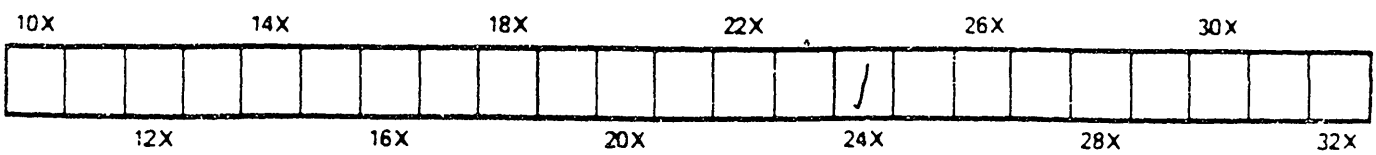

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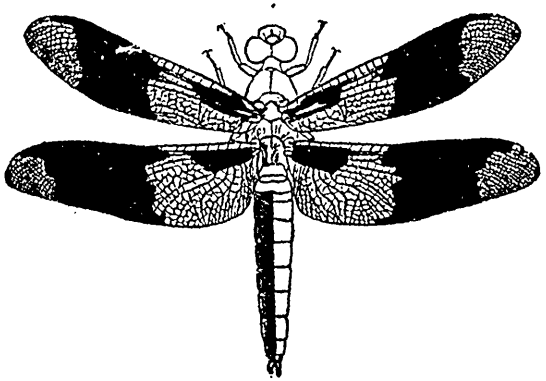
No. 8.



LIBELLULA TRIMACULATA.

EDITED BY

REV. C. J. S. BETHUNE,

HEAD MASTER OF TRINITY COLLEGE SCHOOL,

PORT HOPE, ONTARIO.

AUGUST, 1897.

LONDON:

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1897.

EXCHANGE.

Subscribers are invited to make liberal use of this column. Notices over three lines are liable to be shortened if necessary. All insertions free to subscribers.

Cynipidæ and Typhlocybinæ wanted, named or unnamed, from all quarters. Will offer, in exchange, Colo. insects in any order. C. P. GILLETTE, Fort Collins, Col.

WANTED.— First An. Report on Nox. Insects of Illinois, by B. D. Walsh. 1868. I have for sale or exchange a complete set of Dr. Fitch's fourteen Repts. on the Insects of New York. Address, M. V. SLINGERLAND, Ithaca, N. Y.

LEPIDOPTERA.—I desire long series of Plusias from all parts of boreal North America. Will purchase or give liberal exchanges. Correspondence invited. R. OTTOLENGUI, 115 Madison Ave., New York.

N. A. LEPIDOPTERA.—Exchange desired. Also a lot of exotic Coleoptera, named and unnamed. What offers? Will collect in other orders.—E. V. RITTON, 129 Hazleton Ave., Toronto.

KERMES.—Desired from North America. Will return identified material. E. E. BOGUE, Agr. Expt. Sta., Stillwater, Oklahoma.

LEPIDOPTERA desired from all parts of N. America. Will collect in other orders in exchange. C. H. TYERS, 227 Front Street East, Toronto.

LEPIDOPTERA.—Exotic and native cocoons and pupæ. Preserved larvæ. Especially Rhopolocera. Correspondence invited. W. S. KEARFOTT, 24 South Water St., Cleveland, Ohio.

WILL COLLECT in many orders of Entomology and Herpetology of Arizona. Address DR. R. E. KUNZE, Phœnix, Arizona.

I OFFER perfect specimens of named diurnals from Central America and Northern South America, in papers, for diurnals from Northwest, Western and Southwestern States. LEVI W. MENGEL, Reading, Pa.

WILL COLLECT any Aquatic insects to exchange for Odonata and Plecoptera, nymphs or imagoes; nymphs preferred. Will determine nymphs or imagoes in these orders for duplicates. JAMES G. NEEDHAM, Cornell University, Ithaca, N. Y.

COLLECTORS OF AQUATIC COLEOPTERA should save all the Aquatic Hemiptera taken with the beetles dredging or at light. I will give exchange for all such Hemiptera in any order, or purchase. CARL F. BAKER, Auburn, Alabama.

COLEOPTERA.—Exchange desired; only perfect specimens given and received. Will also collect in other orders in exchange for Coleoptera of N. A. R. J. CREW, 105 Oak St., Toronto, Ont.

N. A. LEPIDOPTERA not in my collection wanted; offer Manitoba Lepidoptera and Coleoptera. Send lists to A. W. HANHAM, Bank of B. N. A., Winnipeg, Man., Can.

LEPIDOPTERA FROM MINNESOTA.—To exchange for the same from other localities. Send lists to H. W. EUSTIS, 31 Elbert St., Augusta, Ga.

COLEOPTERA.—Will exchange for species not represented in my cabinet. Coccinellidæ and Cicindellidæ especially desired. Good returns. FREDERIC ORMONDE, 59 Eustis Street, Boston, Mass.

CANADIAN ICHNEUMONIDÆ.—Will be glad to purchase undetermined material in this family, particularly from the vicinity of Quebec. Will determine or exchange specimens if parties prefer. G. C. DAVIS, Agricultural College P. O., Michigan.

COLEOPTERA.—Wanted, Haliplidæ, Gyrinidæ, and Rhynchitidæ, named or unnamed; also Attelabus genalis. Good returns of named N. American Coleoptera. RALPH HOPPING, Redstone Park, Kaweah, California.

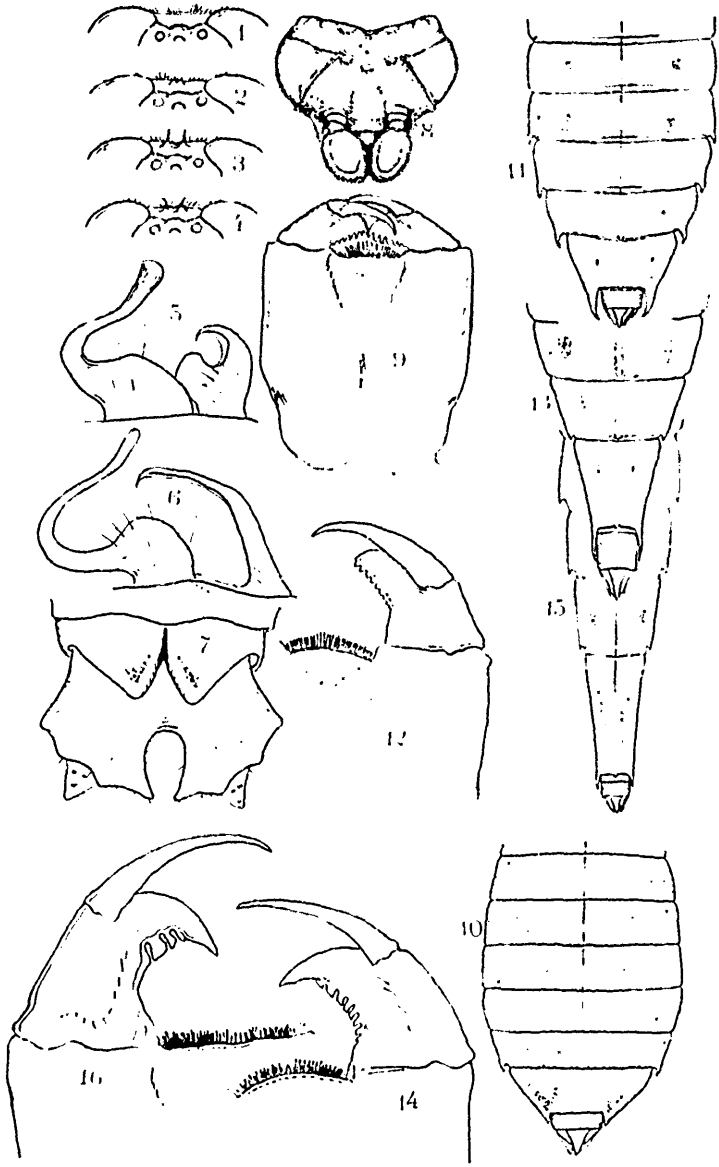
Correspondents desired in any part of the world who will collect Hesperidæ (either named or unnamed) in exchange for N. H. Lepidoptera. W. F. FISKE, Mast Yard, N. H., U. S. A.

WANTED.—Diptera of the families Sarcophagidæ and Muscidæ (sensu stricto) from all localities. Will purchase or exchange for insects of any order. GARRY DEN. HOUGH, M. D., 542 County St., New Bedford, Mass.

HYMENOPTERA.—Fossores and Bees wanted from West and South (named or unnamed). Offer in return good American and European Col., Lep. or Hym. S. N. DUNNING, 43 Niles St., Hartford, Ct., U. S. A.

VANCOUVER ISLAND.—Lepidoptera for sale or exchange—*C. gigas, M. Taylori, A. rhodope; New noctuidæ.* W. H. DANBY, P. O. Box 314, Victoria, British Columbia.

EUROPEAN COLEOPTERA.—I have a large quantity of European Coleoptera which I wish to exchange for American. Lists furnished. PAUL J. ROELOFS, 90 Rue van Straelen, Antwerp, Belgium.



NORTH AMERICAN GOMPHINAE.

The Canadian Entomologist.

VOL. XXIX. LONDON, AUGUST, 1897. No. 8.

PRELIMINARY STUDIES OF N. AMERICAN GOMPHINÆ.

BY JAMES G. NEEDHAM, CORNELL UNIVERSITY, ITHACA, N. Y.*

(Continued from page 168.)

Herpetogomphus pictus, n. sp. Male.—Ithaca, N. Y.

Length, 49 mm.; abdomen, 35; hind wing, 27.

Green and brown, varied with black and yellow.

Face and frons above entirely yellow; a broad black band between the eyes, including the ocelli; antennæ black, the extreme rim of their cuplike insertions yellow. Occiput yellow, its border convex, ciliated with black. Rear of eyes brown, paler externally.

Prothorax fuscous, with a median twin spot greenish.

Thorax bright green, very thinly clad with brownish hairs, and faintly striped with brown. Dorsal and both lateral stripes subobsolete. Humeral stripe complete, irregular; antehumeral, isolated above, and separated from the humeral by a narrow green line. Subalar and antealar carinæ brown.

Wings hyaline, flavescent at the base. Membranule minute, pale; stigma brown; veins black; costa faintly yellow externally.

Femora straw yellow, lineated with black internally and each with a subapical incomplete ring of black. Tibiæ black, each with an external straw yellow line. Tarsi black; hind tarsi with a yellowish mark on the second and third segments superiorly.

Abdomen brown with transverse apical rings of black on segments 2 to 9; additional transverse lines of black on segments 3 to 7, at one-third the length of the segments. A middorsal yellow line, diffuse on segments 3 to 6, sharply bordered with black on 7 to 9. Apex of segment 10 and sides of 8 and 9 (except extreme lateral margin, which is black) and appendages yellow.

Superior appendages scarcely longer than the 10th segment, clad with blackish hairs. Seen from above they are divergent half their length, then parallel to their blunt

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*An unfortunate misarrangement of the table for nymphs crept in at the end of the last paper. The two paragraphs immediately preceding the last one on page 168 both relate to *Stylurus*. They should therefore be consolidated and preceded by 7.

Prof. T. D. A. Cockerell has promptly and very kindly called my attention to an oversight in proposing the name *Orcus*, which is preoccupied. I replace it with *Arigomphus*.

tips. Seen from the side they are thickest at the base and are gradually thinned and slightly declined to their truncate tips, beneath which are three or four rows of minute black denticles, extending more than half way to the base. Inferior appendage bifid for nearly half its length, the branches slightly divergent, truncate a little obliquely on tip, bent up at an angle with the declined basal portion, and bearing on each superolateral margin a broad quadrangular elevation just before the obtuse apex.

The appendages of the 2nd segment are very similar to those of *O. carolus*. (See plate.)

Two ♂s from Ithaca in the Cornell University collection. One ♂ collected by Mr. J. O. Martin, at Ithaca, June 7th, 1897. A handsome species.

The occurrence of a *Herpetogomphus* at Ithaca was quite unexpected. All other species of the genus are from the extreme west and southwest. This one is related to *H. claps*, Selys, of Mexico.

Ophiogomphus johannus, n sp. Male.—Wilmurt, N. Y.

Length, 43 mm.; abdomen, 30; hind wing, 26.

Black and yellow.

Labrum pale with a narrow brown margin which is broadened laterally. Face yellow; rear of frons and vertex except the rear black. Occiput yellow, its margin ciliated with black.

Thorax yellow, with thin brownish hairs: a narrow middorsal fuscous stripe subobsolete anteriorly, forking above with the carina to unite on either side with the fused humeral and antehumeral stripes, which are separated by a narrow yellow line only in their middle portion. Sides yellow, with an incomplete fuscous stripe on the 1st and a complete narrow one on the 2nd lateral sutures, and with fuscous markings above the bases of the legs.

Wings hyaline (immature).

Legs fuscous; front femora paler below.

Abdomen black, marked with yellow as follows: Sides of segments 1 and 2, except behind auricles; two lateral spots on 2 to 7; sides of 8 and 9, except the inferior margin; apical half of 10; a maculose middorsal line reduced to very narrow basal spots on 5 to 8, wanting on 9.

Superior appendages slightly longer than 10, yellowish, darker at the tip, cylindric, moderately divaricate and equally narrowed in their apical fourth to an acute tip. Seen from the side they are a little angulated near the base and beyond this point irregularly denticulate beneath to a point just before the tip, where they are suddenly contracted from below upward, leaving the point at the upper side.

Inferior appendage bifid almost to its base, its branches straight, cylindric, about as long as superiors and twice as stout, almost as divergent, each apparently forked by reason of a very large external upturned tooth at two-fifths of its length; at the extreme apex another stout upturned tooth. (For genital hamules see plate.)

A single ♂, with its cast skin, from Wilmurt, N. Y., in the Cornell University collection.

Ophiogomphus carolus, n. sp. Male and female.—Ithaca, N. Y.

Length, 40-42 mm.; abdomen, 28-31; hind wing, 24-26

Greenish-yellow and blackish-brown.

Face greenish-yellow, paler toward the mouth. Rear of frons and vertex except the rear, black. Occiput yellow, its slightly convex margin ciliated with long black hairs. In the female there is generally in front of the margin a pair of black-tipped spines, whose various development is shown in plate, figs. 1 to 4. These sometimes occupy the margin which then becomes notched between them. Rear of eyes black above, mottled with paler below.

Prothorax blackish, its hind lobe with a median twin spot and a lateral spot each side yellow.

Thorax greenish, its dorsal stripes fused, enveloping the carina and forking with it above to meet the humeral. Antehumeral stripe isolated above, sometimes meeting the humeral near its upper end, but well separated through most of its length by a narrow greenish line. A partial brown line on the 1st lateral suture and a narrow complete one on the 2nd.

Legs black, front femora paler below.

Wings hyaline, often flavescent at base, costa black; stigma cinereous.

Abdomen cylindric, a little narrower in its middle two-thirds, superiorly blackish with a maculose yellowish middorsal line of lanceolate spots on segments 3 to 7, of quadrangular basal spots on 8 and 9. Inferiorly, whitish with fuscous apical spots on most of the segments. Ten yellow; fuscous at both ends.

Male appendages: superiors, longer than the 10th segment, cylindric; seen from above, with acute apices divergent; seen from side, fusiform, with truncate apices, denticulate beneath for one-third their length. Inferior appendage (see plate, fig. 7) bifid by a rounded notch, each branch somewhat flattened with four distal angles (as shown in the figure) or sometimes with only two (merely obliquely truncate); always with an upturned tooth at the outermost angle, sometimes with another at the innermost.

The genital hamules are shown at fig. 6 in the plate. These appear to be quite constant in form.

Female appendages fuscous, longer than 10; anal segment as long as the 10th. Vulvar lamina about as long as the 9th segment; bifid except basal fourth, the branches enclosing an oval notch beyond which their incurved apices meet and then abruptly separate in short, oval, divergent points.

Described from more than seventy bred specimens (some of which will find their way into the collections of all my correspondents), from a single ♀ in the Cornell University collection, and from five specimens captured in May by Mr. Chester Young and Mr. J. O. Martin. I collected nymphs in October which emerged on my table in March. It was easy to collect the nymphs by hundreds in April, and in May the banks of the waters they frequented were fairly covered with exuviæ. Yet, outside of my breeding cages I saw but one live imago, notwith-

standing I was doing much collecting at all times and in all places considered favourable. Where were they?

I have recently bred *A. villosipes*, Selys, by scores, and I find its exuviæ sticking to every bank about Ithaca, yet I have not seen a single imago at large. The imagoes, where are they?

Arigomphus australis, n. sp. Male. Gotha, Fla.

Length, 52 mm.; abdomen, 30; hind wing, 27.

Black and olive.

Face yellow with dense black pubescence.

A black stripe across base of labrum and another across the anterior margin of the frons. Rear of frons and whole of vertex black. Occiput yellow, convex, ciliate with black. Rear of eyes black above, yellow below.

Prothorax black with a median twin spot and a larger spot each side yellow.

Thorax olivaceous, striped with brown as follows: Dorsal stripes fused to form a cuneiform dorsal spot, not reaching the base, and narrowly divided with yellow along the extreme summit of the carina. Its narrow upper end is met by the strongly incurved antehumeral stripes, which are well separated from the narrower humeral stripes. Narrow but distinct stripes on both lateral sutures.

Legs black. Front femora pale within.

Wings hyaline, costa yellow, stigma brown. Veins black. Hind wing chalky near anal margin.

Abdomen long, slender. Segments 3 to 6 cylindric, narrower than terminal segments, entirely black. Remaining segments black, marked with yellow as follows: Sides of 1 and 2; dorsal lanceolate spots on 7 and 8; sides of 7 apically, and sides of 8 to 10 entirely yellow, 8 one-half longer than 9. Superior appendages about equalling 10, pale brown, divaricate at a right angle. Seen from above the inner margin is straight, the outer margin ends in a stout tooth, beyond which it is cut to a long acute point. Seen from the side each is gradually narrowed to a pointed apex, with a large acute tooth directly under the basal fourth, not visible at all from above. Inferior appendage with branches more divaricate, shorter, very little upcurved, ending under the apex of the lateral tooth.

One finely coloured ♂ taken by Mr. Adolph Hempel, in Orange Co., Fla., on the 21st of April, 1897.

At the same time Mr. Hempel took a *Progomphus obscurus*, Ramb., with its skin, in transformation. While the nymph was known by fair supposition, it appears not to have been reared before.

Mr. Hempel sent me also a nymph of the extraordinary type referred by Hagen (Trans. Amer. Ent. Soc., XII., 277, 1885) to *Aphylla producta*, Selys. It is time for someone to find the imago in Florida.

Gomphus umbratus, n. sp. Male and female. Ithaca, N. Y.

Length, 50 54 mm.; abdomen, 35 30; hind wing, 30 32.

Brown and olive, variable.

Face yellow, washed with brown in indistinct lines across the base of the labium and close under the frontal prominence. Rear of frons above and whole of vertex brown. Antennæ black. Occiput yellow, its hind margin convex (male and female), ciliated with black.

Prothorax variable, but always showing a median twin spot of yellow.

Thorax *brown* with a pair of nearly parallel dorsal stripes of yellowish green, each ending at its lower end a spur against the carina, and at its upper end another spur around the isolated upper end of the antehumeral stripe of brown. Humeral and antehumeral stripes of brown fused at lower end and near the upper end, and sometimes all the way between. Brown stripes of the lateral sutures overspreading the area between them, or sometimes the sides of the thorax wholly brown.

Femora brown, with numerous long spines in females. Tibiæ black, with a yellowish external line on each. Tarsi black.

Wings hyaline; their basal articulation and stigma rich brown when fully coloured. Costa yellow externally, veins black.

Abdomen cylindric in the female, slightly narrowed between the ends in the male, fuscous; basal fourth of middle segments paler and including a yellowish spot inferiorly. Middorsal stripe of yellow continuous at the base, reduced to lanceolate spots on segments 4 to 8, on 8 very short, on 9 wanting, 10 with a yellow spot in the female, uniform olive-brown in the male.

Male superior appendages flattened, a little arched. Seen from above the inner margin is nearly straight; at two-thirds their length they are cut obliquely to form a long point with an obtuse angle on the external margin. Seen from the side a low obtuse lobe appears on the interno-inferior carina just beyond the external angle. Inferior appendages a little shorter, more divergent and strongly upcurved at apices.

Female vulvar lamina transverse, one-third as long as wide, notched in the middle.

Described from seventeen specimens (14 males and three females), several of them bred, all obtained at Ithaca, N. Y., in May. A common species; next to *G. descriptus*, Banks, perhaps the commonest of the season; more variable in coloration than any other Gomphine I have seen.

Stylurus segregans, n. sp. Male.—Havana, Ill.

Length, 61 mm.; abdomen, 44; hind wing, 35.

Face yellowish. Frons yellow, infuscated superiorly. A narrow fuscous stripe in front of ocelli. Frons and the ridge-like elevations behind each lateral ocellus pilose with soft black hairs. Occiput yellow, its border straight, ciliated with stiff black hairs.

Thorax fuscous; dorsum with two isolated lateral yellow stripes, divergent anteriorly. A narrow antehumeral line and a broad stripe down the middle of each of the lateral sclerites, yellow.

Legs brownish, paler internally, with black spinules. Claws pale, with apex and inferior tooth black.

Wings hyaline.

Abdomen fuscous, marked with yellow as follows: Dorsum of segment 1, a line on 2, basal middorsal spots on 3 to 8, extreme apex of 8, sides of 1 and 2, basal lateral spot on 3 to 7, sides of 7 and 8 except extreme lateral margin and apex, and all of 10.

Male superior appendages yellowish-brown, much longer than 10, divaricate at almost a right angle, slightly incurved toward the tip and cut obliquely to form an obtuse external angle at two-thirds their length, and a supero-internal point. The bevelled portion is minutely denticulate opposite the apices of the inferior appendage. No teeth or spines. The inferior appendage is bifid half its length with branches strongly divergent and strongly upcurved, their apices resting outside the bevel ed portion of the superiors. Posterior genital hamule simple; pointed, directed forward at an angle of 45 degrees with the axis of the abdomen.

Name refers to its extremely local occurrence.

The single imago was obtained by Mr. C. A. Hart and myself, by rearing a nymph which we found crawling from the water upon bur-rush leaves, 23rd June, 1896, in the mouth of Quiver Creek. I obtained several exuviæ there, and several others later at McHairy's mill-dam some miles further up.

The nymphs of this and of the preceding species will be described in a forthcoming bulletin of the Illinois State Laboratory of Natural History.

Since this paper was written, I have obtained at Ithaca, N. Y., nymphs which can be none other than *Dromogomphus spinosus*, Selys. They fall in the same section of the table with *Arigomphus*, *Stylurus* and *Gomphus*, from all which they are distinguished by a sharp middorsal longitudinal ridge, ending in a straight apical spine on the 9th abdominal segment.

Explanation of Plate 7.

Figs. 1, 2, 3 and 4.—The occiput of the female of *Ophiogomphus carolus*, seen from the front, showing variations in occipital spines.

Fig. 5.—Genital hamules of *Ophiogomphus johannus* from the left side, inverted.

Fig 6.—Do. of *Ophiogomphus carolus*.

Fig. 7.—Inferior abdominal appendage of *O. carolus* seen from below. .

Fig. 8.—Head of nymph of *Lanthus parvulus*, seen from above and in front.

Fig. 9 —Mentum of labium of do. from above.

Fig. 10 —End of abdomen of do.

Fig. 11.—End of abdomen of *Gomphus fraternus*, nymph.

Fig. 12.—Part of labium of do.

Fig. 13.—End of abdomen of *Arigomphus pallidus*, nymph.

Fig. 14.—Part of labium of do.

Fig. 15.—End of abdomen of *Stylurus segregans*, nymph.

Fig. 16.—Part of labium of do.

THE COLEOPTERA OF CANADA.

BY H. F. WICKHAM, IOWA CITY, IOWA.

XXVI. THE CERAMBYCIDÆ OF ONTARIO AND QUEBEC.—*(Continued.)*

BELLAMIRA, Lec.

With this genus begins a series of beetles in which the neck is longer than in *Encyclops*, owing to the constriction of the head being near the eyes. *B. scalaris*, Say, is a very fine insect, varying in length from .75 to 1.20 inch. The form is slender, the elytra tapering greatly to and rounded at tip, deeply sinuate at sides, the tip of the abdomen uncovered. The prothorax is bell-shaped, with prominent, rather flattened hind angles. Colour brownish; most of the head, the greater portion of the fore and middle legs, the bases of the hind femora and the bases and tips of the ventral segments inclining to reddish or even yellowish. Antennæ rufous. Elytra brownish, with a large common, lighter (golden-sericeous), wedge-shaped mark (wavy on the edges and sometimes interruped at about one-third its length by a transverse brownish band) which extends about two-thirds to tip. The body is finely and densely, in most places rugosely, punctured, clothed with fine golden pubescence, which is much denser on certain parts, notably the abdomen. Recorded as breeding in birch, and has been seen ovipositing in maple stumps.

STRANGALIA, Serv.

Includes two extremely elongate slender species, having the general form of *Bellamira*, but much smaller. *S. bicolor*, Swed., is entirely rufous except the eyes, the tips of the mandibles, the incisures of some of the tarsal joints and the elytra, which are black. Length .48–.56 inch. *S. luteicornis*, Fabr., is rufo-testaceous or yellowish; the eyes, some markings on the under side, a ring at the tip of the hind femora, two dorso-lateral stripes on the prothorax, a narrow basal and three other transverse bands on the elytra, black. Length .36–.52 inch.

TYPOCERUS, Lec.

The impressed poriferous spaces on the antennæ, which separate this genus from *Leptura*, are to be looked for near the bases of the sixth and following joints, appearing as elliptical smoother spots. A good plan is to take the common *T. velutinus* as a type for examination, since in this species they are very distinct, and having once seen them their detection is easy in the remaining species. The four Canadian

forms may be separated by their colour, but it is to be remembered that the elytral pattern is subject to variation. None of them have the prothorax strongly rounded on the sides, but the form of this segment is campanulate. Excluding the extra-limital forms, those belonging to our fauna may be thus known :

A. Body above and beneath, legs and antennæ entirely black, except occasionally a rufescent spot in humeral region. .36–.44 in.. ..... *lugubris*, Say.

AA. Body beneath variable, antennæ blackish, legs black or *rufous*, elytra never entirely black, usually banded.

b. Legs black. Elytra black with three transverse bands and basal spot yellow, the anterior two bands sometimes united at suture. .36–.40 in..... *sparsus*, Lec.

bb. Legs ferruginous.

Prothorax very coarsely sparsely punctured. Elytra black, with basal spot and three transverse bands (the anterior two frequently united at suture) yellow. .40–.52 inch..... *zebratus*, Fabr.

Prothorax more finely and densely punctured. Elytra brownish or reddish, with yellow markings much like those of the preceding species, but these may be incomplete or even wanting. .40–.56 inch..... *velutinus*, Oliv.

T. zebratus (fig. 28) is said to mine in white oak. It bears considerable resemblance to *Leptura nitens*, from which it, however, easily separates by the generic character. *T. sparsus* is unknown to me, and the description is taken from Mr. Leng's table; *velutinus* is often very abundant on flowers in the summer months.

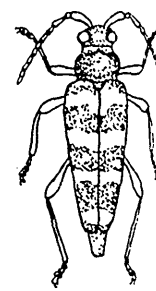

FIG. 28.

LEPTURA, Serv.

This genus is of very large size, and many of the species are quite abundant. There is no uniformity of facies to give a ready clue to its separation from allied groups, some of the species resembling *Strangalia* in the shape of the prothorax, while others are very different.

The succeeding synopsis follows those of Dr. Leconte and Mr. Chas. W. Leng, with but few changes, chiefly such as are made necessary by later corrections of synonymy.

Prothorax more or less triangular, or campanulate, widest at base..2.
Prothorax nearly quadrate, or else more or less rounded or subcampanulate, usually constricted in front and behind, hind angles not prolonged .....23.

2. Hind angles of prothorax prolonged .....3.
Hind angles not prolonged.....16.

3. Very large species (1.20 in.), prothorax strongly narrowed from the base, which is broadly but deeply bisinuate, posterior transverse impression distinct. Elytra widest at base, gradually narrowed behind, truncate and emarginate at tip, which is not margined. Black with velvety pubescence, elytra red, apex black, antennæ feebly serrate, elytra not sulcate .....*emarginata*, Fabr.
Small or moderate sized species .....4.

4. Prothorax without distinct transverse basal impression. Small species, elytra sub-parallel at sides, not spotted nor banded, but uniformly dark. Prothorax often red, hind angles usually small.10.
Prothorax with transverse basal impression often deep. Moderate sized species, elytra usually narrowed behind, often very much so, and frequently spotted, striped or banded.....5.

5. Prothorax convex, with the sides much rounded in front of the middle, a transverse depression at base, hind angles small. Elytra black and yellow.....14.
Prothorax with sides not much rounded in front of the middle.....6.

6. Prothorax strongly narrowed from the base, usually regularly so...7.
Prothorax subcampanulate, transverse basal impression deep, hind angles broad, laminate, fourth joint of antennæ shorter than usual, elytra not banded nor spotted.....15.

7. Elytra black or testaceous with black tip. Abdomen with the third, fourth and base of fifth ventrals red. Prothorax finely punctured. .48–.52 in.....*plebeja*, Rand.
Elytra with black and red or yellow markings.....8.

8. Antennæ annulate.....9.
Antennæ not annulate. Black, elytra very dehiscent, and not narrowed behind, coarsely punctured, sides of elytra, metathorax and abdomen red, thighs red with black tips. .36 in..*cruentata*, Hald.

9. Female reddish-yellow, varied with black beneath, legs more or less black; above with top of head, a discal thoracic stripe or spot, scutellum, sutural and side margins and transverse sub-median elytral band, black. Male black, base of legs and discal elytral

vitta (usually broken), as well as a small spot under the humerus, yellow. Antennæ annulate in both sexes. .48–.60 in..... .....*subhamata*, Rand.

Blackish, region of the mouth often yellowish. Legs and elytra testaceous or yellowish, the latter with sutural discal and lateral marginal vittæ black. .32–.52 in..... .....*lincola*, Say.

10. Elytra margined and usually rounded at tip.....11.

Elytra not or scarcely margined at tip. Blackish, pubescence white, head, legs and first antennal joint sometimes reddish or partly so. .24–.30 in.....*subargentata*, Kirby.

11. Black, elytra blue, polished coarsely and sparsely punctured, antennæ and legs either black or yellow. .24 in.....*chalybea*, Hald.

Black or piceous, head and prothorax often reddish, legs and antennæ frequently in part yellow.....12.

12. Elytra shining, very coarsely punctured, tip subtruncate. Colour black, legs black, head and prothorax reddish. .26–.36 in..... .....*capitata*, Newm.

Elytra more finely punctured, pubescence fine, white, prothorax and head rarely (never ?) at once red or yellow, though often separately so.....13.

13. Antennæ piceous; anterior femora and base of middle ones yellowish. Upper surface piceous or (in the var. *hæmatites*, Newm.) the prothorax may be reddish. Terminal ventral segment of female simple. .16–.24 in..... .....*nana*, Newm.

Antennæ piceous, basal joint yellow. Anterior femora and the bases of middle and hind ones yellow. Terminal segment of female with a slight tuberosity near apical margin. Colour piceous or blackish, thorax usually with yellow margin. .22–.28 in.....*exigua*, Newm.

14. Black, antennæ brownish, legs and tips of abdominal segments ferruginous, pubescence golden, so dense as to conceal most of the surface colour except on the legs, antennæ, tips of abdominal segments, middle of prothorax, five elytral bands and the sutural margin. .40–.52 in..... .....*nitens*, Forst.

Black, antennæ and tibiæ often reddish, pubescence cinereous, not concealing the colour. Elytra yellowish, base, tip and two intermediate (usually interrupted) bands black. .31–.38 in..... .....*sexmaculata*, Linn.

15. Black, elytra sometimes rufous or testaceous, prothorax very densely coarsely punctured, elytral punctuation less dense. Antennæ not

annulate, elytra sharply obliquely truncate at tip. .40–.60 in..... *nigrella*, Say.

16. Antennæ annulated (except in ♂ of *canadensis*).....17.
Antennæ not annulated.....19.

17. Elytra parallel, elongate, truncate at tip, front of head with transverse impression. Colour black, punctuation fine and dense. Legs reddish or brownish. .40 in..... *pedalis*, Lec.
Elytra narrowed from the base .....18.

18. Tips of elytra deeply truncato-emarginate, antennæ serrate in the ♂. Punctuation very coarse and close, sub-confluent. Black, elytra usually with large red basal spot, which may extend (in the var. *erythroptera*) over the entire surface. .48–.76 in.. *canadensis*, Oliv.
Tips of elytra truncate or feebly emarginate, body of ordinary form, not very stout; punctuation of elytra finer, well separated. Black, elytra reddish, abdomen red ♂ or black ♀ ..... *rubrica*, Say.
Tips of elytra nearly rounded, very dehiscent. Form very short and stout, head broad, elytra coarsely punctured. Black, elytra often with reddish or yellowish submarginal stripe or entirely testaceous. .36–.48 in..... *vagans*, Oliv.

19. Body densely golden pubescent. Blackish, elytra testaceous, often darker at sides. .48–.56 in..... *chrysocoma*, Kby.
Body only moderately or sparsely pubescent.....20.

20. Black, elytra reddish or testaceous, wholly or for the greater part. 21.
Black, elytra black, each with four yellowish spots, thighs pale at base. .40–.48 in..... *octonotata*, Say.

21. Elytral margin very deeply sinuate (on viewing the insect from the side). Prothorax with a tolerably well-marked median channel, at bottom of which is an abbreviated raised line. Black, elytra reddish except at tip, which is rather broadly obliquely marked with a black blotch and truncate. .52–.75 in..... *proxima*, Say.
Elytral margin not deeply sinuate.....22.

22. Larger, prothorax with very distinct median channel which is wider behind. Brownish red, elytra paler, with a submarginal dark spot near the middle, tip obliquely truncate. .48–.52 in.. *biforis*, Newm.
Smaller, prothorax without median channel. Black, elytra, reddish to testaceous, tip blackish, squarely truncate. .40–.48 in..... *sanguinea*, Lec.

23. Prothorax hardly narrowed anteriorly and not constricted behind. Seventh and following antennal joints with a raised line beneath.

Black, elytra sometimes (in var. *luridipennis*, Hald.) testaceous or with the tip alone dark. .32–.52 in.....*mutabilis*, Newm.

Prothorax much, often suddenly, narrowed anteriorly, with or without distinct constrictions.....24.

24. Basal prothoracic constriction very deep, sides strongly rounded..26.

Basal prothoracic constriction feeble or absent.....25.

25. Prothorax densely punctured, with median smooth line. Neck very close to eyes. Black, without markings. .36–.40 in..*pubera*, Say.

Prothorax sparsely punctured, head longer behind the eyes. Usually black, elytra with or without a narrow discal yellow vitta. Varies to entirely testaceous. .40–.52 in.....*vittata*, Oliv.

26. Black; legs more or less yellow; prothorax (in var. *ruficollis*, Say) sometimes red, nearly smooth, except at base. Antennæ with tendency to become reddish at tips of joints. .28–.32 in.....*sphæricollis*, Say.

Black, legs almost entirely yellow in most specimens, prothorax occasionally red, finely and sparsely punctured, except at base, where it becomes more pronounced. Antennæ with the tips of the joints more evidently reddish, elytra with side margin and long discal vitta yellow. .24–.40 in.....*vibex*, Newm.

Probably the only serious difficulty to confront beginners in the use of the above table will arise in making the choice between the first two divisions; *i. e.*, 2 and 23. Should doubt arise here the assumption may be made that it belongs in the latter, when reference to other thoracic characters or to those of colour will soon show if the student is on the wrong track. The measurements here, as elsewhere, are in the main those of Mr. Leng, though I have frequently extended them, as shown by specimens in my own collections.

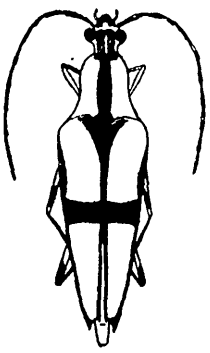

FIG. 29.

With regard to food habits very little can be said, so few of the *Lepturæ* having been bred; while the perfect insects are commonly found on flowers, these give little or no clue to the feeding habits of the larvæ. Mr. Harrington has taken *L. subhamata* (fig. 29) on oak and also in a beech log, while the pupa of *L. canadensis* has been found in a hemlock stump. *L. nitens* bores, as a larva, in black oak, *L. vagans* in the yellow birch and pignut hickory, *L. proxima* has been reared from maple.

It will probably be noted that the authorities cited for certain of the species are not the same as those in the Check List. The reasons for these changes will be found in Mr. Leng's paper on the genus. Both *L. nana* and *L. exigua* are included in the table, although I am not sure that the latter occurs within our limits; the former has been recorded by Dr. Hamilton (CAN. ENT., XXI., pp. 33 and 108). The name *zebra* is replaced by *nitens* on the ground of priority: *sphæricollis* has been preferred as the specific and *ruficollis* as the varietal name, following Mr. Leng. In all probability *L. lacustris*, Casey, described from Michigan, will be found in Ontario. It differs by description from *sanguinea* in the much stouter male antennæ, and by the apices of the elytra being narrowly and obliquely truncate, the truncation sinuate, the angles, especially the exterior, very acute and prominent.

DESCRIPTIONS OF NEW SPIDERS.

BY NATHAN BANKS, WASHINGTON, D. C.

Teminius affinis, n. sp.

Length ♀ 13 mm.; ceph. 5 mm. long, 3.5 mm. wide; patella plus tibia IV. 6 mm. long. Cephalothorax red-brown, darkest around head; mandibles dark red-brown; legs and palpi yellow-brown, lighter at tips; sternum dark red-brown; abdomen nearly black above, with faint indications of a light median streak, in the base of which is a black spear-mark; venter dark gray; spinnerets yellow. Posterior row of eyes straight, broader than anterior row; P. M. E. round, separated by their diameter, nearer to each other than to the larger P. S. E.; A. M. E. about half their diameter apart, and slightly nearer to the A. S. E. than to each other. Legs quite long, no spines above or below on tibia I., and none above on tibia IV.; thick scopulas to all tarsi and metatarsi (except IV.). Sternum broad; the abdomen long and narrow; the upper spinnerets distinctly two-jointed and much longer than the lower pair, the second joint more than twice as long as wide. The epigynum shows a rounded cavity, slightly longer than broad, broader behind than in front, the anterior portion paler than the rest; there is a median septum which in the fore part is narrow, but quite suddenly broadens at the middle and then tapers to the broadly rounded tip.

One specimen, Brazos Co., Texas. It differs from *T. continentalis*, Keys, in the larger size, position of eyes, spines on legs, and shape of the epigynum.

Thargalia canadensis, n. sp.

Length ♀ 7 mm.; ceph. 2.8 mm. long, 2 mm. broad; patella plus tibia IV. 2.8 mm. Cephalothorax reddish yellow-brown, pars cephalica black; mandibles dark red-brown; anterior pairs of legs yellowish, hind pairs reddish, all femora with a black stripe each side, those on the fore pairs are much broader at base, the under side of tibia and metatarsus IV. infuscated; maxillæ dark brown, pale on margin; sternum reddish; coxæ yellowish; abdomen black above, paler below, reddish around the epigynum, above with a narrow white band near base, and another just before the middle, the latter rather indented on the median line. Posterior eye-row procurved, P. M. E. round, over one and one-half their diameter apart, closer to the equal P. S. E. Anterior eye-row procurved, shorter than the posterior, A. M. E. about as large as P. M. E., about once their diameter apart, very much closer to the equal A. S. E., which latter are well separated from the P. S. E. Two pairs of spines under tibiæ I. and II. Sternum one and one-fourth longer than broad, nearly as broad in front as at second coxæ, rounded to the pointed tip. The abdomen has a horny basal shield which extends but a short distance on the dorsum. The epigynum shows two oval openings marked in front by a continuous sinuous ridge.

One specimen from Ottawa, Canada. (W. H. Harrington.)

Anyphæna fragilis, n. sp.

Length ♀ 5 mm.; ceph. 2 mm. long, 1.3 mm. broad; patella plus tibia IV. 1.8 mm. Cephalothorax pale yellowish brown, black around eyes, a black line reaching from between the P. M. E. to the indistinct dorsal groove. Sometimes the sides are rather more infuscated. Mandibles dark brown, with a pale spot at base; maxillæ and lip pale, fringed with black hair; legs pale whitish, with blackish rings at base, middle, and tip of tibia, base and tip of metatarsus and tip of tarsus; the bristles are arranged in lines so as to leave smooth spaces. Sternum pale, infuscated, darker on the sides. Abdomen pale, above with two rows of black spots, and some on each side; venter pale, spinnerets infuscated. Cephalothorax not much narrowed in front, radial furrows obscure, P. M. E. about twice their diameter apart, scarcely closer to the equal P. S. E. A. M. E. smaller than P. M. E., about their diameter apart, and nearly as far from the larger A. S. E. Mandibles rather large and stout, vertical. Legs short, two pairs of spines under tibiæ and metatarsi I. and II., the second pair at about middle of length; hind legs more

numerously spined. Sternum one and one-third longer than broad, broadest near middle, sides rounded. Abdomen slender, fully twice as long as broad; ventral furrow nearer to epigynum than to the spinnerets. The epigynum shows a transversely rounded area, trilobate behind, the median lobe smaller and pointed, in each side a curved reddish opening.

Jacksonville, Florida; April. Collected by Messrs. Laurent and Castle.

Theridium dorsatum, n. sp.

Length ♀ 4 mm.; femur I. 2.1 mm., femur III. 1.2 mm. Cephalothorax dark yellow-brown, brown on the edges, eye region blackish, and behind is a triangular brown spot with its apex on the dorsal groove. Abdomen grayish, with a pale central mark bordered by black, from the projections faint marks run to the sides; sides pale; venter black, with a large central triangular silvery spot, spinnerets surrounded with black; a curved black line reaches from the anterior portion of the abdomen across the sides to the middle of the venter, where it joins the dark ventral area; sternum brown; legs pale yellowish, with brownish bands at the middle and ends of the joints, those on middle of femora I. and II. are narrow and oblique. P. M. E. are about their diameter apart, A. M. E. much more than their diameter apart; sternum triangular, a little longer than broad in front; legs moderately long and slender, metatarsus I. about equal to tibia I.; abdomen a little longer than broad and not very high. The epigynum shows a rounded semi-triangular lobe projecting behind.

Olympia, Washington. (Trevor Kincaid). Readily known by the large silvery spot on venter.

Theridium elevatum, n. sp.

Length ♀ 4 mm.; femur I. 2 mm. Cephalothorax yellow, with a black stripe each side and one on the middle, the latter with a short lateral spur each side at the dorsal groove and growing narrower behind; mandibles with brown lines. Abdomen gray, mottled with white and brown; the white is in the form of curved lines; venter dark, with two white spots in front of the spinnerets; sternum yellow, with some short black lines reaching from the sides; legs pale, banded and thickly spotted with dark brown, bands at ends of joints, base and middle spotted. P. M. E. hardly their diameter apart; A. M. E. equal to P. M. E., more than their diameter apart; mandibles slender; sternum triangular, barely longer than broad in front; legs short and stout, femur

I. not quite twice as long as femur III., metatarsus I. barely longer than tibia I.; abdomen higher than long, globose; region of epigynum swollen; there is a small median triangular black projection or finger.

Brazos Co., Texas; Sept.

Plæsiocræ'rius lobiceps, n. sp.

Length 1.5 mm. Cephalothorax yellowish with a black margin, each eye with a black ring, a black line on each side of the lobe; mandibles yellowish, legs and palpi yellowish, sternum red, black on margins; abdomen black, spinnerets pale. Head of male moderately elevated into a large lobe, bearing the P. M. E., which are large and scarcely twice their diameter apart; a hole on each side just behind the S. E.; the mandibles show a series of transverse lines on the outer side; legs moderately long, first pair longest, no spines above on the tibiæ; sternum broad, triangular, bluntly pointed behind. Male palpi quite long; the tibia with a broad extension above and a hook on the inner side; the tarsus short, truncate at tip; the bulb, in side view, is constricted near the middle, the upper part crossed by two transverse dark lines, the black style coiled around the tip once, a small triangular hook near base of bulb. In the female the head is scarcely elevated; the epigynum shows a semicircular area limited by a concave ridge in front, from which there extends behind a gradually broadening furrow with its margins at tip, curved outward and backward.

One from Chicago, Ill,, under leaves in October; others from Salineville, Ohio. (A. D. MacGillivray.)

Icius canadensis, n. sp.

Length ♀ 5 mm.; ceph. 2.4 mm. long, 1.9 mm. broad; tibia plus patella IV. 2 mm. The male but little smaller. Cephalothorax red-brown, black in eye-region; mandibles reddish; leg I. reddish except the yellowish tarsi, other legs wholly pale yellowish. Sternum infuscated; abdomen brownish with a narrow white line around base, and pale chevrons toward tip, venter pale gray, with a straight jet black stripe each side, and a narrow basal median spear-mark; a black spot each side at base of spinnerets; in ♂ more white hair around the A. M. E. Eye-region one and a fourth broader than long, broader behind than in front, first eye-row curved; eyes of second row half way between dorsal and lateral eyes; cephalothorax moderately high; mandibles vertical, with one stout tooth on inner edge of fang-groove. Legs moderately long, IV. pair longest, I. pair very stout, three pairs of spines on the tibia and

two on metatarsus I., metatarsus IV. spined only at tip, anterior coxæ separated by nearly width of labium. Sternum once and a third longer than broad, broadest between coxæ I. and II. Abdomen once and a half longer than broad, rounded at base, pointed behind, moderately high. The epigynum shows two oval cavities, more than their diameter apart, some distance in front of a posterior median indentation. The male palpus is short; the tibia has a short, sharp projection on the outside; the bulb projects beyond the base, and the upper part is much smaller than the lower, showing a curved tube on the outside, and terminating in a stout, straight, black stylus.

A few specimens from Ottawa, Canada; collected by Mr. W. H. Harrington.

DIPTERA FROM YUCATAN AND CAMPECHE.—I.

BY C. H. TYLER TOWNSEND, FRONTERA, MEXICO.

A few specimens of Diptera were taken in the Yucatecan region, in April and May, 1896, by the writer. The present paper describes the new species. More material from that interesting fauna will doubtless be secured in time, and will form the subject of future papers of this series. For an account of the peculiar bio-geographical aspects of the *Yucatecan* fauna and flora, the reader is referred to the writer's second paper on the Bio-geography of the Southwestern U. S. and Mexico (Trans. Texas Acad. Sci., 1897).

TABANIDÆ.

1. *Tabanus campechianus*, n. sp.

One ♀. April 25th. Taken near Campeche, between that place and Esperanza (State of Campeche). Seems to approach *T. nigrovittatus*, McQ., according to Osten-Sacken's description.

Length, 8½ mm. Palpi almost white, with some white as well as black hairs. Face brownish, covered with a white bloom. Front brown, yellowish-gray dusted; frontal callosity nearly square, rounded on upper corners; a smaller longitudinal callosity above it twice as long as wide, and with a tendency to a linear elongation posteriorly. Callosities brown. Front parallel, about one-sixth width of head, parallel portion only a little more than twice as long as wide. First two joints of antennæ pale yellowish, second joint ending above in a sharp spur; third joint reddish-yellowish, annulate portion black, process of base angular, but not enough developed to form a right angle, greatest width

of third joint about twice the extreme basal width. Annulate portion of third joint hardly as long as the basal portion, about four times as long as wide. Thorax cinereous dusted, with a sparse short white pubescence, with four somewhat indistinct wide brownish vittæ. Pleura whitish pollinose. Scutellum cinereous, with a yellowish tinge on margin. Abdomen brownish-yellow, a well-defined, moderately broad median yellowish-white pollinose vitta of even width, becoming indistinct on sixth segment. A brown vitta on each side of and limiting the median vitta, forming a triangle on each side on third and a subarcuate marking on each side on second segment; but these brown vittæ are faintly represented in full width on second and third segments by a shading of brown supplementing the triangular and arcuate markings. On the outside of the brown vittæ on each side there is a lateral yellowish-white pollinose vitta like the median one but not so distinct, while still outside of this is another lateral brown vitta limiting the lateral white one on the inside and parallel with the edge of the abdomen on the outside. The fourth segment has the brownish-yellow considerably more tinged with brownish, and the fifth, sixth, and seventh are quite brownish. Pubescence very scanty, hairs of white portions whitish, of brown portions in main blackish, except on hind margins of posterior segments. Legs brownish-yellow, tips of tibiæ and bases of femora slightly brownish, but front tibiæ brownish on distal half; tarsi brownish, especially front tarsi, while the hind tibiæ and metatarsi are but little tinged with this colour. Wings fuscous-hyaline, costal cells and stigma distinctly yellow. Posterior cells all wide open, no stump nor even angle at the base of anterior branch of third vein. Eyes bare, no ocelli.

2. *Tabanus yucatanus*, n. sp.

Three ♀s. May 10th. Taken from horses, at the *cenote* of Xcolak, about ten miles southeast of Izamal, Yucatan. This is the first record of a Tabanid of any genus or species, so far as I can find, from Yucatan. Nor can I find any recorded from Campeche. I have searched through all the multitude of existing descriptions of *Tabanus* from North and South America, including Walker's and Bigot's numerous species, and have been unable to identify this and the preceding species with any of them.

Length, 10 to 11 mm. Differs from *campechianus* as follows: Palpi pale watery-yellowish. Gray bloom of face slightly tinged with

brownish. Front much narrower, about one-twelfth width of head, parallel portion fully five times as long as wide, just perceptibly narrowed anteriorly, with a callus swollen-conical or rounded posteriorly, prolonged into a second elongate spindle-shaped callus. Third antennal joint clearer reddish, annulate portion not so black; process more developed, ending in a sharp-pointed angle, basal part of joint rather widened and shortened; annulate portion short and comparatively stout, pointed elongate conical, hardly three times as long as basal width in two of the specimens, slightly longer and comparatively less stout in the other. Thorax saturate yellowish-brown, with four indistinct whitish lines, the middle ones sometimes obsolete. Scutellum concolorous with thorax. Median whitish vitta of abdomen formed of whitish pubescence in triangles, under which the ground colour is seen to be paler than the brownish-yellow of rest of abdomen. Pale brownish vitta on each side of median one is composed of coalescent oblique markings, like a vitta broken at the incisures, the marking on each segment directed posteriorly outward. A nearly similar, hardly less broken lateral whitish vitta outside of this on each side; the last is bounded by a broken brown vitta on edge of abdomen, serrate on inner edge. Fourth to seventh, especially fifth to seventh segments, more deeply tinged with brown, or quite dark brown in ground colour. White incisures on sides of abdomen. White vittæ and incisures white-hairy, brownish vittæ black-hairy. Front femora quite brownish, hind metatarsi well tinged with brown, front tarsi almost black. Wings uniformly clear, except the pale yellowish oblique elongate stigma. Otherwise as in *campechianus*, including the venation, bare eyes, and absence of ocelli.

A NEW METHOD OF STUDYING NEURATION.

BY HENRY SKINNER, PROF. ENT. ACAD. NAT. SCI., PHILADELPHIA, PA.

The opprobrium cast on the lepidopterist has been that he did not study the anatomy of his specimens, but depended too much on maculation and colour. There has been much truth in the reproach, as there are few of us who would destroy a rare or unique specimen to examine the neuration. Fortunately the time has arrived when the neuration can be studied with the greatest ease and accuracy, and permanently recorded in a photograph, or, more strictly speaking, a radiograph. The anatomy of a living chrysalis may be studied without removing the

cocoon, and also the internal anatomy of the thorax and abdomen can be fairly well seen, and in time the process may be improved for this work. With the aid of the Röentgen or X rays and the photographic plate one could make a picture of the neuration of the beautiful, rare and curiously shaped *Ornithoptera paradiseæ* and not disturb a scale on its superb wings. With the fluoroscope one could doubtless see all the neuration without even going to the trouble of making a picture. This is indeed a wonderful age, and in the future no entomologist will have any excuse for not studying the neuration of the lepidoptera, as he cannot say that he must denude the wings of his specimens, bleach them and mount in balsam as of old and thus destroy them.

BOOK NOTICES.

GUIDE TO THE GENERA AND CLASSIFICATION OF THE NORTH AMERICAN ORTHOPTERA. By S. H. Scudder: 8 vo., pp. 89. W. H. Wheeler; Cambridge, 1897. (Price $1.00.)

The above work, like all of Dr. Scudder's books, is exactly what the title states. It is simply a guide for the use of students of the Orthoptera, by means of which they may determine the genera of their specimens. It consists of excellent and most carefully prepared tables of the seven families into which the Orthoptera of North America are divided. These are followed by most valuable bibliographical notes, in which the student is referred under the head of each family of insects to all the works which refer to it. Then follows a full list of all the works which refer to North American Orthoptera, arranged alphabetically by authors and a complete index. All who have attempted to study Orthoptera know how badly such a book was wanted, and it is well for the science of entomology that the work was done by such a careful and experienced hand. J. F.

THE GENERA OF NORTH AMERICAN MELANOPLI. By S. H. Scudder. (Proc. Am. Acad. of A. and S. V. 32, pp. 195–206. Jan., 1897)

Almost simultaneously with Dr. Scudder's "Guide to the Genera of Orthoptera" two other important and extremely useful papers appeared, one on "*The Genera of North American Melanopli*" and the other on "*The Species of the Genus Melanoplus.*" These are both really advance issues of chapters in Dr. Scudder's great work on the *Melanopli*, which is to be published by the U. S. National Museum. The *Melanopli* are divided into 30 genera, 17 of which are new and 4 have been previously published by the author. The genus *Melanoplus* is characteristically American and is widely disseminated. There are 131 species recognized, grouped under 28 series. The name *furcula* is given to the processes of the last dorsal segment of the male abdomen. J. F.

Mailed August 2nd, 1897.