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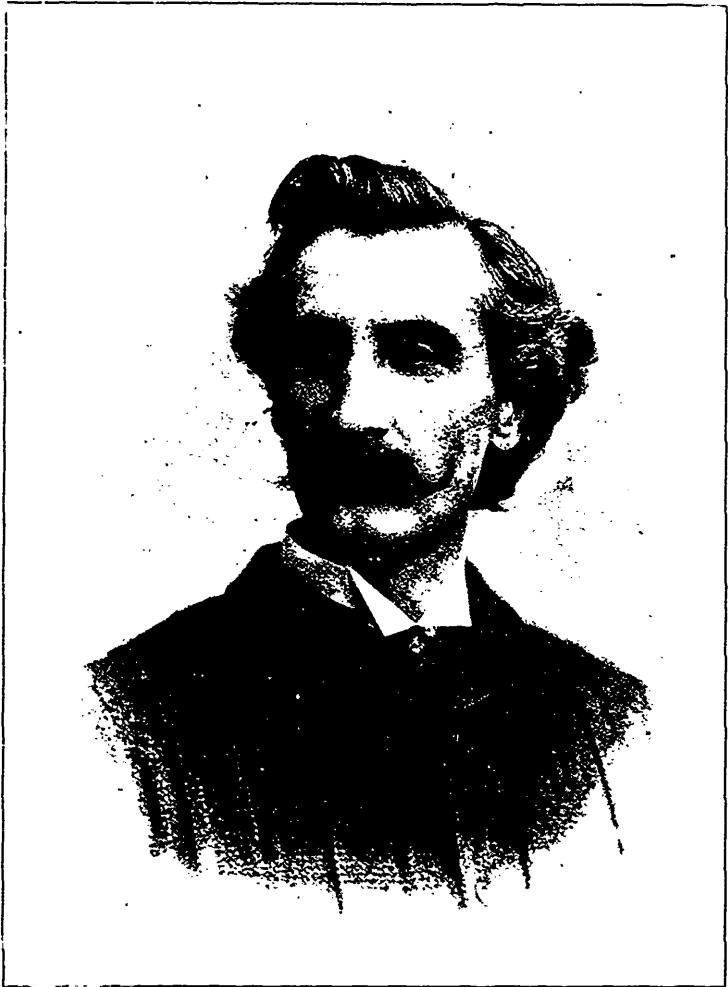
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PROF. C. V. RILEY, M. A., PH. D.

The Canadian Entomologist.

VOL. XXVII.

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No. 10.

CHARLES VALENTINE RILEY.

In the death of Prof. C. V. Riley, the world of practical science has lost one of its brightest lights. On the morning of September 14th, Prof. Riley left his home in Washington, on his bicycle, in company with his son, to ride into the city. Not many minutes after they had started the Professor's wheel struck a stone, and he was thrown so violently from his seat, against the curb, that his skull was fractured. He was picked up unconscious, and died some hours later.

Professor Riley was an Englishman by birth, having been born at Chelsea, September 18th, 1843. He was educated in England, France, and Germany. When seventeen years of age, he came to America and settled on a farm in Illinois. Here he began his first observations on injurious insects. Four years later he went to Chicago, and from that period on to the present time he has always been accorded a foremost place among the leaders of scientific thought in America.

In 1868, Prof. Riley was appointed State Entomologist of Missouri, and it was during his tenure of that office that he prepared his celebrated nine reports on the "Noxious, Beneficial, and other Insects of Missouri." In 1878, he was appointed Entomologist to the Bureau of Agriculture; he resigned soon after, but was reappointed again in June, 1881, and held the office until about a year ago.

Prof. Riley was a man of keen perception, and possessed of great perseverance and tenacity of purpose. He was an exceptionally accurate observer, and his writings are couched in a plain, unaffected style, which never leaves any doubt as to his meaning. His investigations were markedly original, and he seldom recorded anything he had not actually seen himself. His marvellous skill as an artist enabled him to add much to the value of his writings by many exquisitely drawn figures. All his work was characterized by system and thoroughness, and, as a consequence, his writings are most valuable, and very numerous. He was also a skilful administrator, and had a faculty for gathering around him the best men available for all special lines of study. Among

the many remarkable results of his work, there are three which will always be associated with his name: the invention of the Cyclone or Riley nozzle, the discovery of the kerosene emulsion, and the introduction of *Vedalia cardinalis*, through the agency of which, in controlling the Fluted Scale, the cultivation of citrus fruits is now possible in California. As a friend, he was kind, patient and true; as an economic entomologist, take him all in all, he was far and away the most eminent the world has ever seen. Every one who could appreciate this great man and his work, will deplore the sad accident which has cut off his career when he was still at the height of his physical and mental vigour.

J. F.

STUDIES IN N. A. MEMBRACIDÆ—III.

F. W. GODING, M. D., PH. D., RUTLAND, ILL.

Subfamily CENTROTINÆ, Stol.

Multareis, gen. nov.

Head broad, with an angle on each side below the eyes, margins parallel from base to apex, which is largely produced in a spoon-shape; base of the head nearly straight; ocelli a trifle nearer the eyes than to each other, on a line above the centre of the eyes; head, at inner edge of each eye, furnished with a compressed, dentiform tubercle projecting directly forward; head inflexed below the eyes. Prothorax convex, elevated some above lateral angles, at summit, on each side armed with a short, stout (truncated?) horn, the sides of which are continuous with those of the prothorax, projecting upward, and parallel; densely punctured; basal margin projecting in a transverse carina; furnished with a percurrent median carina; posterior process gradually narrowed to the apex, which is briefly recurved in a compressed tooth or lobule; the base almost completely covering the scutellum; dorsum of posterior process furnished with two rounded tubercles, the first located at the base of the anterior convexity, the second midway between it and the apex. Tegmina coriaceous, narrow, punctured, opaque, veins irregular and numerous; barely passing abdomen, far surpassing the apex of the posterior prothoracic process; corium with the venation very irregular towards apex, there being numerous discoidal and terminal areas varying greatly in size, and three basal areas; clavus attenuated gradually to apex; wings with four apical areas, the second minute, triangular. Front tibiæ moderately dilated, with a row of fine spines along the edges.

This genus is closely related to *Anomus*, Fairm., which, possibly, ought to be arranged to include the type of *Multareis*. It differs from *Anomus* in the shape of the head, curve of the apex of the posterior process, tegmina not broad, destitute of hairs, number of discoidal areas, presence of dorsal horns and tubercles on the front of the head; inflexed head, and tibiæ.

Type *M. cornutus*, n. sp.

M. cornutus, n. sp.—♂, ♀. Light ferruginous, strongly punctured. In front of lateral angles, on each side, a tubercle in a fossa coloured black; tips of lateral angles, upper part of anterior swelling, horns and tip of second posterior tubercle dark ferruginous; tip of posterior process brownish-black; tegmina sordid ferruginous, veins dark brown, with two broad transverse bands, the first across the middle, the second between it and the apex sordid white; tegmina finely punctured, but uneven and rough. Abdomen dark brown, spindle-shaped and robust. Legs ferruginous.

Length, 4 mm.; breadth, $1\frac{1}{2}$ mm.

Habitat—Panamint Valley, Calif.

Described from a pair received from Prof. Riley. Types in collection F. W. G., and National Museum.

Tuberculocentrus, gen. nov.

Head convex, produced in the middle, large, uneven, coarsely punctured, about half as long as broad between the eyes, which are prominent; ocelli on a line through the centre of the eyes, much farther from each other than from the eyes. Prothorax between the shoulders elevated in a rounded hump, somewhat flattened on top, densely punctured, with a percurrent median carina; at the base, behind the eyes and in front of the lateral angles, on each side, is a large tubercle in a fossa; posterior process not reaching the tip of the abdomen, long, very broad at base, gradually narrowed to the beginning of the posterior third, where it is greatly constricted, then broadened considerably and ends at the apex in a sharp point; when seen from the side it is deeply sinuate behind the hump, slightly so before the apex, which is lightly elevated. Abdomen long and broad. Scutellum truncated. Tegmina broad, extending far beyond the tip of the abdomen, coriaceous, sub-transparent; the corium divided into innumerable small areas, no regular arrangement of the veins; clavus gradually attenuated to the apex. Tibiæ triquetrous, not dilated, a row of fine spines on the edge. This is closely related to *Centrodentus*, Godg.


T. solus.—♀. n. sp. Sordid yellow, punctured, immaculate, eyes dark brown, antennæ black, abdomen lemon-yellow, ovipositor darker, tip of abdomen brown; tegmina at the interior angle coriaceous, a little darker, veins yellow; wings with three apical areas.

Length, 4 mm.; breadth, $1\frac{1}{2}$ mm.

Habitat—Death Valley, Calif.

Described from many species in the National Museum.

Subfamily DARNINÆ, Stal.

Stictopelta arizona, n. sp. — ♀. Yellow, lateral margins white. Head smooth, yellow, with a brown, transverse band just below the eyes, a darker spot near the eyes. Prothorax yellow, with a percurrent, longitudinal, median, impressed line; base narrowly brown, at the middle of the base a white line, thus: , the point resting at the base, the line becoming a band which extends around the lateral angles, along the inferior borders, ending just before the apex, which is brown: densely punctured; on each side of the base, under the curvature of the brace-shaped line, is a scar which is white in the centre with a dark brown ring. Tegmina nearly covered, the veins in the basal half nearly black, lighter towards apex. Below yellow; ovipositor fuscous.

Length, 9 mm.; width, 4 mm.

Habitat—Arizona. From Prof. Riley.

This is near *præcox*, Burm. Type in National Museum.

Subfamily SMILINÆ, Stal.

Carynota vera, n. sp.—♀. Reddish, sprinkled with yellow; punctured; smallest member of the genus, closely resembling in shape various species of *Stictopelta*.

Head broad, short, very obtusely triangular, rough, yellowish-red, with three yellow dots arranged in a triangle, the apex at the base of the head, the other two containing the ocelli, which are much nearer to each other than to the eyes; a dark brown curved band across the lower part of the face; eyes prominent, dark. Prothorax less elevated than other *Carynota*, convex in front, rising in a curve over lateral angles, extending posteriorly to the apex without any depressions nor becoming flattened; an impression, originating from behind the lateral angles at the inferior borders, on each side, extends backward and upward, meeting on the dorsum at the middle of the posterior process directly across the median carina and not at an angle; the median carina is a smooth line, per-

current, dark brown ; the posterior process rounded and very acute at the tip, which does not quite reach apex of tegmina ; there is a shining, irregular black scar near the base of prothorax on each side ; the yellow atoms are sparingly scattered over the prothorax, except those on the dorsum, which are arranged in the form of an oblong oval ; a large triangular yellow spot, shaded with fuscous, on each side at the middle of the lateral borders ; the lateral borders for about one-fourth their length very narrowly yellow. Tegmina coriaceous and mostly opaque, densely punctured, reddish ; two discoidal cells, the exterior small, round and transparent, the interior larger, triangular and opaque ; the first and fifth apical cells transparent ; the third triangular and about as broad as long. Wings with four apical cells, the second sessile. Below yellowish-red ; femora yellow with a broad reddish band just above the tips ; tibiae triquetrous, hairy ; tarsi dark red.

Length, 7 mm. ; width, $3\frac{1}{2}$ mm. ; altitude, 3 mm.

Habitat—Norway ; Maine. One ♀ from S. Henshaw.

SOME NOTES ON BRUCHUS IN NEW MEXICO.

BY C. H. TYLER TOWNSEND, BROWNSVILLE, TEXAS.

A number of the bur-like fruits of *Glycyrrhiza lepidota*, a species of licorice native to Arizona and parts of New Mexico, were collected in the Mesilla Valley of the Rio Grande River, north of Las Cruces, in the fall of 1892. The following May, there were found issued from these burs many specimens of a Bruchid, which was identified at the Agricultural Department in Washington as *Bruchus alboscuteellatus*, Horn. There were also many parasites issued, which were determined by Mr. Ashmead as *Bruchophagus mexicanus*, Ashm. I am indebted to Mr. Coville for the determination of the plant.

Many pods of the tornillo or screw-bean, *Prosopis pubescens*, were also collected in the fall of 1892, at Las Cruces. In the following May, there were found issued from these many specimens of *Bruchus amicus*, Horn. Two parasites of this species were also bred with it, and have been determined by Mr. Ashmead as *Eupelmus cyaniceps*, Ashm., and *Holcopelte producta*, Ashm.

From a pod of *Lotus* sp., collected by Professor Wooton, near Las Cruces, there issued specimens of *Bruchophagus mexicanus*, Ashm., so determined by Mr. Ashmead. This further indicates that the pods of this *Lotus* sp. are affected by a *Bruchus* sp., in the Mesilla Valley region.

PREPARATORY STAGES OF *ALYPIA LANGTONII*, COUPER.

BY HARRISON G. DYAR, P. D., NEW YORK.

This larva is a close ally of *A. octomaculata*, but differs from it in the pale head, the black bands broken in the subdorsal region, the small size of the subventral white spots and the absence of the conical tubercles which are represented by black spots. The food plant is the fireweed (*Epilobium angustifolium*).

Egg.—Laid singly on the under side of a leaf close to the projecting midrib. Flat at base, low conoidal, a little pointed at apex; micropyle depressed, surrounded by two concentric rings, granular-reticulate; from the outer ring a series of round-beaded ridges run to the under surface. These ridges under a Zeiss C objective appear as a series of rounded granules, but they alternate on successive ones so that the grooves between them are wavy as usual in the Noctuidæ. Micropyle a circular cup-shaped area of one circle of cells radiating from its centre, its edge forming the first ring. From this the ridges pass gently over the outer ring, becoming more distinct and increasing in number by the interpolation of others, confluent in pairs, but not marked on account of their granular structure. Diameter, 0.55 mm.; height, 0.3 mm. Colour whitish, not shining, marked with dark red-brown in an irregular blotched ring or broken spots, different in each egg. Duration of the stage, 9 days.

First Stage.—After hatching the larvæ walk with a looping gait, but soon begin to feed. They readily fall off by a thread when disturbed. Head bilobed, pale brown; width, 0.4 mm. Body yellowish-whitish, cervical shield, anal and leg plates blackish. Tubercles normal, brown, mostly minute, but those on joints 5-7 and 11 surrounded by large spots, those on joint 12 with small spots. Thoracic feet dark. Joint 12 enlarged, tubercles i. and ii. forming a square on it. Tubercle vi. absent, three setæ on the leg plates.

Second Stage.—At first as before; width of head, 0.5 mm. Body more brown spotted. Setæ fine, pointed, tubercles black, the sub-primaries (iii. and v. on thorax and vi. on abdomen) present. Anterior two pair of abdominal feet a little smaller than the others. Later the tubercles are black, conic, irregular in size, the brown marks around them slight. The body appears green from the contained food. A dorsal line of irregular opaque white shadings.

Third Stage.—Large, black, conical tubercles with pale setæ. Body greenish, blotched with opaque white, especially dorsally; a few brown

markings as in the previous stage. Feet black. Head whitish, its tubercles all shining black, a little brown shading around mouth and eye. Width, 0.7 mm. Joints 4-7 and 12 form two humps in the position of rest of the larva.

Fourth Stage.—Head white, the black spots as before supplemented by many small dusky spots. The black tubercles form three transverse rows; a black dentate line above mouth. Width, 1.15 mm. Body white, tinged with orange on joints 5, 6 and 12 dorsally and along the region of tubercle iv. the whole length. Tubercles large, conical, black; hairs all pale, rather stiff, long, single. The body is mottled with brownish-black in irregular streaks between the tubercles, except subdorsally where the white ground prevails. Rims of spiracles, thoracic feet and leg plates, black.

Fifth Stage.—Head white with many black spots, all the spots of the preceding stage being now equally black. Width, 1.6 mm. Body as before, but the tubercles and narrow irregular marks velvety black. The orange shades spread, tending to form transverse bands; on joints 5, 6, 11 and 12 the faint orange bands are complete. The black marks are thickest ventrally, predominating, thin subdorsally; along dorsal line they form a series of irregular marks enclosing a broken white dorsal line. On the subventral folds the ground colour forms a series of white patches most distinct on joints 11-12.

Sixth Stage.—Head white with many black spots of various shapes; mouth parts black. Width, 2.3 mm. Body white, the segments banded with orange, obscurely except on joints 5, 6 and 12. Tubercles large, velvety black, low conic or almost flat, not produced. The velvety black marks on the body form narrow irregularly eroded and broken transverse lines, some only represented by angular marks, all broken subdorsally so as to give the appearance of a white subdorsal band. The lines are about eight on each segment, but so broken and irregular that they are difficult to trace. Dorsally they are partly confluent, forming branching marks irregularly X or Y-shaped. On the subventral folds the ground colour appears as a series of white patches, the largest situated between joints 11 and 12. Feet black, venter dark. Hairs long, distinct, rather stiff, white, all single and perfectly normal in arrangement for the Noctuid (*Agrotina*, Grote). The larva rests with joints 5-6 and 12 hunched up, forming two humps. Larvæ from Jefferson, N. H.

RELATIONSHIP OF THE FAUNA OF PUGET SOUND TO
THAT OF MEXICO AND CANADA.

BY WILLIAM HAMPTON PATTON, HARTFORD, CONN.

The fauna of Puget Sound [as shown by a collection of fifty species of Hymenoptera from Seattle, Washington, kindly sent me by Prof. O. B. Johnson, of the University of Washington] is most like that of Canada, no genera differing.

Sphex Lucaë, Sauss, and *Astata montana*, Cress., are interesting exceptions.

Sphex Lucaë, Sauss, shows relationship to California and Lower California. Originally described from Cape Saint Lucas, Mexico. I have identified it among specimens from Lake Co., Calif., kindly sent me by Mr. Oscar T. Baron, and it is found among the species from Seattle, collected by Prof. Johnson.

Astata montana, Cress. (Syn. *Ast. elegans*, Cress., ♂ ♀; Syn. *Ast. bella*, Cress., ♂;—the three names belong to one variable species), shows a relationship to the Plateaux Region; occurring at Guanajuato, Mex., on the Mexican Tableland, where it has been collected by Dr. Duges, as identified from a female specimen presented by me to the U. S. N. M., and occurring throughout the Western United States, extending east to the Plains.

SPHINX CANADENSIS, BOISDUVAL.

Prof. C. H. Fernald says in his Sphingidæ of New England: "This very rare moth was taken at flowers in Bangor, Maine, early in July, by Prof. Carl Brown, who kindly loaned me specimens for study." I have pleasure in announcing that this rare Sphinx has been added to the Society's collection, by Mr. C. G. Anderson, who, by industrious attention to bait and electric light, has accumulated a surprising amount and diversity of good material during the first part of the season.

This is the first report of *S. Canadensis* being taken in Ontario, that I am aware of. Mr. Grote refers to it as a Northerly species; and gives its habitat as Canada, Newfoundland, Maine. Rev. T. W. Fyles and Mr. Strecker have reported it from Quebec Province, but Mr. Strecker afterwards received a specimen that was taken near Cincinnati. Nothing as yet seems to be known of its early stages or food plants. Mr. Strecker's excellent coloured illustration of it in his *Rhopaloceres* and *Heteroceres* Plate XIII., fig. 13, is unmistakable, whilst his description, page 106, under the name of *S. Plota*, supplemented by that of Prof. Fernald, leaves nothing further to be desired in that direction. Mr. Anderson has also taken what appears to be a black form of *S. Gordius*.

J. ALSTON MOFFAT, London, Ont.

NEW TENTHREDINIDÆ.

BY ALEX. D. MACGILLIVRAY, ITHACA, N. Y.

Periclista, Knw.—This name was proposed by Knownow in his monograph of the European Blenocampids, published in the "Winer Ent. Zeit.," V. 1886, 186, for those species having the lanceolate cell petiolate, the eyes more or less remote from the bases of the mandibles, and the posterior wings with the outer cells closed by a marginal vein. This name had already been used by Forester, 1869, for a genus of Cynipidæ, and I therefore propose the name *Mogerus* (*μογερός*) to take its place.

Blenocampa bipartita, Cress.—From an examination of a type specimen of this species, received from the American Entomological Society, I find that this species should be referred to the genus *Mogerus*.

Mogerus emarginatus, n. sp. ♂.—Black, with the following parts luteous: the labrum, the femora, the tibiæ, the base of the tarsi, and the apex of the first, second, third and fourth abdominal segments indistinctly so; the collar and the tegulæ, white; the clypeus, angularly emarginate; the antennæ, thickened at base, especially the third and the fourth segments, the third segments about one-fourth longer than the fourth; the wings hyaline; the veins brown; the costa and the stigma luteous; the anterior ocellus in a basin which connects with a transverse sinus which is caudad of the posterior ocelli. Length, 6 mm.

Habitat—Boston, Massachusetts. One specimen. This is the species and specimen referred to by Mr. Harrison G. Dyar in the CAN. ENT., XXVI., 1894, 185, as *Blenocampa bipartita*, where a description of the larvæ has been published.

Selandria floridana, n. sp. ♂.—Black, with the following parts yellow: the clypeus (the labrum is fuscous), the tegulæ, a line on the collar, a spot on the mesopleuræ, the legs, including the coxæ, except the middle and posterior tarsi, the caudal margin of the ventral abdominal segments, and the entire apical segment; the clypeus truncate; the labrum rounded; the antennæ slightly thickened in the middle, the third segments one-third longer than the fourth; the wings blackish-fuscous, paler at apex; the veins, including the costa and the stigma, black; the body shining, impunctured; the lanceolate cell without a cross-vein, open at the shoulder; the posterior wings with two middle cells. Length, 4.5 mm.

Habitat—Ormond, Florida.

A single specimen received from Mrs. Annie Trumbull Slosson. Readily separated from the described American species by the colour of the pleuræ.

Tenthredo bilineatus, n. sp. ♀.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, a spot on the front beneath the antennæ, an ovate spot on the antennal ridges above the base of each antenna, the lower half of the cheeks, an elongate mark on the inner margin of the eye (this mark is half as long as the inner margin of the eye, reaching the meso-caudal angles of the eye, obliquely truncated in front, roundly emarginate on its mesal side, extending slightly beyond the caudal margin of the eye, a fine spur extending from the middle of its caudal margin to an elongate, quadrangular spot along the latero-caudal margin of the head, sub-interrupted from the mark on the cheeks, not extending mesad beyond the mesal margin of the spot or the inner margin of the eye), a small spot on the vertex, in a line with the spots on the latero-caudal margin of the head and caudad of the ocelli, the tegulæ, the collar, two lines on the mesonotum, converging behind, a broad line from the scutellum to the base of the anterior wings, the cenchri, a small triangular spot on the cephalo-dorsal corner of the mesopleuræ, a spot above the posterior coxæ, the basal membrane, two large spots on the sides of the basal plates, the trochanters, the bases of the femora, the front tibiæ and tarsi, and the middle tibiæ slightly beneath; the following parts rufous: the first segments of the antennæ entirely and the second and third on the inner side, the front and middle femora, the tibiæ above, the posterior femora beneath at apex, the posterior tibiæ, the middle and posterior tarsi, the venter, a narrow margin to the tergal segments one to three, and the tergal segments beyond the third; the third segments of the antennæ one-third longer than the fourth; the clypeus emarginate; the wings hyaline, slightly yellowish; the veins black; the costa and the base of the stigma luteous. Length. 6 mm.

Habitat—Ithaca, New York.

This species will be readily recognized by the markings on the head and mesonotum and the colour of the basal segments of the antennæ and the apex of the abdomen.

Tenthredo pallipunctus, n. sp. ♀.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, the lower part of the cheeks, a line on the collar, a spot above the posterior

coxæ the anterior legs, including the coxæ, beneath, and the middle tibiæ beneath (the middle femora have blotches of yellow beneath, so that specimens will probably be found having the femora yellow beneath); the third segments of the antennæ one-third longer than the fourth; the clypeus emarginate; the wings hyaline, slightly fuscous; the veins, including the costa and the stigma, brownish. Length, 11 mm.

Habitat—Colorado. Mr. Carl F. Barker, collector.

This species is related to *flavomarginis*, from which it differs in having the tegulæ and basal plates black.

Tenthredo rufostigmus, n. sp. ♂.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, the lower half of the cheeks, the tegulæ, an abbreviated line on the caudal part of the pleuræ, a spot above the posterior coxæ, the front and middle coxæ except above, the posterior coxæ at side, the front legs, beyond the coxæ, beneath, and the middle trochanters and femora beneath; the following parts rufous: the middle tibiæ beneath, the middle tarsi, the posterior femora beneath, the posterior tibiæ and tarsi, and the abdomen, including the venter, beyond the basal plates except a spot on the base of the first tergal segment; the third segments of the antennæ one-fourth longer than the fourth; the clypeus squarely emarginate; the wings slightly infuscated; veins black; the costa and the stigma rufous. Length, 10 mm.

Habitat—Craig's Mt., Idaho. Prof. J. M. Aldrich, collector.

This species is related to *discrepans*, from which it differs in having the posterior femora rufous with a black line above.

Tenthredo atravenus, n. sp. ♂.—Black, with the following parts rufous: the legs beyond the trochanters except a spot on the bases of the femora above (the posterior tarsi are yellowish), the apex of the second abdominal segment, the third, fourth, and fifth abdominal segments entirely, and the base of the sixth abdominal segment; the third segments of the antennæ one-half longer than the fourth, the clypeus truncate; the labrum rounded, yellowish-fuscous at sides; the wings slightly clouded, more pronounced on the apical half; the veins black; the costa rufous; the stigma yellow, fuscous at base. Length, 10 mm.

Habitat—Juliaetta, Idaho. Prof. J. M. Aldrich, collector.

This species is related to *scutilis*, from which it differs in having no pale spot above the posterior coxæ.

Tenthredo terminatus, n. sp. ♀.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, a spot on

the cheeks, the tegulae, the latero-dorsal angles of the pronotum, a spot above the posterior coxae, a spot on the sides of the basal plates, a fine line on the apical margin of the basal plates and the first and second abdominal segments, the front and middle legs, including the coxae, beneath, the extreme apices of the posterior coxae, and the posterior trochanters beneath; the following parts rufous: the posterior legs beneath beyond the trochanters, the tergal segments beyond the second, the sides of the third and fourth abdominal segments, and the ventral segments beyond the fifth, including the guides of the ovipositor; the clypeus squarely emarginate; the third segments of the antennae one-third longer than the fourth; the wings subinfuscated; the costa and the base of the stigma rufous; the veins black. Length, 12 mm.

Habitat.—Colorado. Mr. Carl F. Barker, collector.

This species is related to *nigricoxus* and *bella*; from the former it differs in not having the pale spot above the posterior coxae wanting, and from the latter in having a black line above on all the legs.

Tenthredo equalis, n. sp. ♀.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, a spot on the cheeks, the tegulae, a line on the collar, a spot above the posterior coxae, the anterior tibiae beneath (the anterior femora are paler beneath; probably specimens will be found in which they are yellow beneath), and the anterior tarsi; the following parts rufous: the femora, the middle and posterior tibiae and tarsi (the anterior tibiae have a fine black line above), a spot on the middle of the second and third tergal segments, larger on the third, the tergal segments beyond the third, and the ventral segments beyond the fifth except the ventral margin of the ovipositor; the clypeus squarely emarginate; the third segments of the antennae twice the length of the fourth; the wings hyaline, the veins black; the costa and the stigma at base luteous. Length, 5 mm.

Habitat.—Colorado. Mr. Carl F. Barker, collector.

This species is related to *lunatus* and *olivatifipes*; it differs from the former in having a pale spot above the posterior coxae, and from the latter in having the scutellum black and the legs rufous.

Tenthredo ventricus, n. sp. ♂.—Black, with the following parts yellow: the clypeus, the labrum, the mandibles except at apex, the front beneath the antennae, the cheeks, a fine line on the collar, a spot above the anterior coxae, a spot above the posterior coxae, and a spot on the sides of the basal plates; the following parts rufous: a fine line on the

inner margins of the eyes, the tegulæ, the prosternum, the mesosternum, and the mesopleuræ, the legs, including the coxæ, except a black line on the coxæ and trochanters and femora above (the front and the middle legs are somewhat yellowish beneath), and the abdomen beyond the middle of the first segment; the clypeus squarely emarginate; the third segments of the antennæ one-third longer than the fourth; the wings hyaline; the veins brownish; the costa and the stigma luteous. Length, 11 mm.

Habitat—Colorado. Mr. Carl F. Baker, collector.

This species is related to *rubelloides* and *hyalinus*; it is separated from the former by having the tibiæ entirely pale, and from the latter by the rufous mesopleuræ and mesosternum and the squarely emarginate clypeus.

Macrophya pulchella alba, n. var. ♀.—Black, with the following parts yellowish-white: the clypeus, the labrum, the mandibles except at apex, a triangular spot on the collar, the tegulæ, a circular spot on the pleuræ, the basal plates, the scutellum, the postscutellum, the front and middle legs, including the coxæ, except a ring on the apex of the tibiæ and the apices of the apical segments of the tarsi, the posterior coxæ and trochanters, the basal half of the posterior femora, and the tibiæ except a ring at the base and apex. Length, 8 mm.

Habitat—Indiana (Baker), Pennsylvania and Illinois (Nason), and New York.

Macrophya punctata, n. sp. ♀.—Black, with the following parts white: the clypeus, the labrum, a spot on the bases of the mandibles, two spots on the caudal margin of the vertex, a narrow line on the collar, the tegulæ at base, the anterior coxæ beneath, the apices and a line on the side of the middle coxæ, a large spot on the sides of the posterior coxæ, the trochanters, the front femora, tibiæ, and tarsi beneath (the apices of the segments of the tarsi are ringed with black), the apical half of the middle femora beneath, the middle tibiæ beneath, a ring on the middle of the posterior tibiæ, the middle and posterior tarsi except the apices of the segments, and two spots on the apex of the basal plates at middle; the clypeus broadly and roundly emarginate; the third segment of the antennæ twice the length of the fourth; the wings slightly infuscated; the veins, including the costa and stigma, black. Length, 10 mm.

Habitat—Plattsburg, New York. Mr. H. G. Dyar, collector

This species is related to *lineata*, from which it is separated by the colour of the posterior femora.

Macrophya minuta, n. sp. ♂.—Black, with the following parts white: the labrum, the mandibles except at apex, the outer margins of the tegulæ, the cenchri, the front and middle coxæ at apex, the posterior coxæ at apex and an ovate spot at side, the trochanters, the front and middle femora and tibiæ beneath, the front and middle tarsi except fuscous rings on the apices of the segments, and a narrow ring on the base of the posterior femora; the clypeus broadly emarginate; the labrum angularly emarginate; the head and thorax coarsely punctate; the third segments of the antennæ about one-fourth longer than the fourth; the wings hyaline; the veins black; the stigma, except its front margin, blackish-rufous; the lanceolate cell contracted at middle. Length, 6.5 mm.

Habitat—Plattsburg, New York. Mr. H. G. Dyar, collector.

OENECTRA FLAVIBASANA, FERN.

On the 20th of June, 1895, Mr. Balkwill brought to me some Tortricid moths which he found at rest upon honeysuckle in his garden. They were new to me. He asked if I wanted any more? I said I would take all he liked to bring of that kind; so by the 27th I had got about three dozen of them. Being desirous of learning something about them, I applied to Prof. C. H. Fernald for information, and sent some of the moths. He replied: "They are *Oenectra flavibasana*; Fern. That he had two specimens in his collection; the types: one from Texas and one from Illinois. That nothing is known of their early stages or food plants, and would be glad to have published all that was known on these points." Up to the present time I can give nothing with certainty upon these points. Presumably, the larvæ had fed upon the honeysuckle, as chrysalids were found in the connate leaves with a thin silken web spun over them, one of which I raised to the moth. There is plenty of evidence of feeding having been done upon the plant, but nothing positive as to what did it. A lookout is being kept upon the plants for the next brood.

The original description was published in the Transactions of the American Entomological Society, Vol. X., p. 69, 1882. I see by it that the types are females. I may mention that the males are decidedly smaller in size, and lighter in colour, as a rule; otherwise the sexes do not perceptibly differ.

J. ALSTON MOFFAT, London, Ont.

REVIEW OF A FEW MORE PROVANCHER TYPES
OF ICHNEUMONIDÆ.

G. C. DAVIS, AGRICULTURAL COLLEGE, MICHIGAN.

In making a study of the Provancher types of Ichneumonidæ while at Quebec a year ago last winter, the type of many of the more recent descriptions was not found in the collection. Since that time types of many of the Abbé's latest descriptions have been found to be with the ones who sent the material, and are not lost, as was at first feared. Mr. W. H. Harrington, of Ottawa, has quite a number of these types, and through his kindness and generosity I have been privileged to study the types in his possession. The following notes are the result of this review :

Ichneumon citrinus ♂ = *Hepiopolmus*, Wesm.—This would be an Amblyteles by Cresson's synopsis.

Amblyteles superbus = *Amblyteles suturalis*, Say.

Phaeogenes annulatipes = *Ichn. annulipes*, Cress.

Phaeogenes pinguis is a *Cryptus*. The ovipositor is almost as long as the abdomen.

Stilpnus deficiens = *Thersilochus*.—The abdomen is piceous, with segment 2 and the tip paler.

Phygadeuon marginatus = *Herpistomus*.

Phygadeuon longicornis = *Cryptus incertus*, Cress.—The metanotum has two transverse carinæ, the tegulæ are reddish-black, and the abdomen is tipped with a pale spot at the apex above.

Phygadeuon fusiformis = *Cryptus montivagus*.—The only difference is in the posterior tarsi, which are pale, but segments 2-4 are not yellowish as in typical *montivagus*. According to Provancher (See p. 408 of "Add. et Corrections") *Phygad. annulatus* = *fusiformis*, and so making it a synonym also.

Phygadeuon gracilicornis = *Herpistomus*.

Phygadeuon fraterculus = *Cryptus*.

Phygadeuon similaris = *Cryptus soror*, Cress.—It is a typical *soror* except the white scutellum. It may become a variety.

Phygad. capitalis ♂.—Probably O K, but may prove to be a ♂ *Cryptus*. The petiole is narrow, gradually enlarged, almost straight, spiracles in or just back of the centre. Front with a large irregular tubercle just beneath the antennæ, apparently caused by an injury.

Cryptus pubescens, ♂, O K.

Cryptus segregatus, ♂, O K.—From the description of this species

and *perditus* one would be led to believe they were synonyms, but the two types are quite different. *Segregatus* may be known by the translucent, very narrow, lanceolate stigma, while the stigma of *perditus* is broad, triangular and opaque. The tegulæ are white in *segregatus*, black in *perditus*.

Cryptus perditus has only one wing remaining, but is apparently a Hemiteles.

Cryptus mellipes = *Cryptus alacris*, Cress.

Cryptus sordidus = *Cryptus extrematus*, Cress.

Cryptus longicaudus, O K.—The tegulæ are black instead of white.

Cryptus ignotus, O K.

Cryptus pentagonalis, ♂ and ♀ O K.

Hemiteles gigas = *Platylabus*.

Hemiteles declivus, O K.

Hemiteles aciculatus, O K.—The description of colour markings is faulty. The nervures and stigma are brown; the posterior coxæ with the basal joint of the trochanters are black; the extremity of the tibiæ and tarsi is dusky; abdominal segments 3 and 4, except at the sides, with a part of 5, and 2 at the apex, red.

Hemiteles debilis, O K.

Mesostenus armatus, O K.—The areolet being open behind would place it in Foerster's genus *Otacustes*. There are some of Mr. Cresson's species that also belong here.

Mesostenus latigaster = *Tryphon*.

Mesostenus pluricinctus is not a *Mesostenus*. The oblique, slightly petiolate areolet would lead one to place the specimen with the *Tryphoninæ*, but the long ovipositor, curved petiole and general form place it nearer the *Cryptinæ*, where Provancher placed it. By the lunulæ, Foerster would place the specimen in his *Phygadeuonidæ*, and by the spiracles being in the middle of the petiole, it would belong to his genus *Diacritus*. Provancher's description of the species is not very complete. Points that might be added, besides those given above, are: Lower edge of clypeus, a small dot at the base of each antenna beneath, and a line beneath the primary wings, yellowish-white; a short, transverse median ridge on posterior part of metanotum; ovipositor nearly as long as abdomen; posterior coxæ and trochanters as long as or longer than the femora; claws large; front tibial spurs large and curved. The longitudinal carinæ on the metanotum, of which Prov. speaks, are so very

indistinct that they are hardly traceable. The species has evidently proved a stumbling-block to the Abbé in his work, as he has placed it in three different subfamilies, and each one under a new species. *Mesoliptus rufipes*, *Echiturus pediculatus* and the present species are one and the same. They are all, with very little doubt, synonyms of Cresson's *Mesoliptus (?) muliebris*, which is the ♂. The venation, form and markings are the same except that the ♂♂ are paler in colour.

Pezomachus sulcatus = Pettitii, Cress.—The sulcate groove of the mesonotum is perhaps a little deeper and plainer than in *Pettitii*, but is present in both, and the two species seem to be identical in all other respects.

Anomalon rufulum, ♀, O K.

Anomalon rufulum, ♂ = *Anomalon chlamidatum*, Prov.

Linneria Guignardi, O K.—Up to a very recent date I have supposed that this species was synonymous with *fugitiva*, Say. This seems to have been the general belief from the number of specimens in various collections under the name *fugitiva*. Say's description of *fugitiva* gives "posterior tibiæ white with black tip and base." Provancher's description of *Guignardi* reads: "The posterior (tibiæ) black with a large white annulus in the middle and another smaller at the base." I have found one typical *fugitiva*. *Guignardi* is the common species.

Thersilochus erebundus ♂ = *Porizon angulare*.

Mesoleptus angustus, ♂ and ♀, O K.

Mesoleptus rufomixtus, ♂, O K.

Mesoleptus nigricornis, ♀ = *Ctenopelma*.

Exenterus hullensis, ♂, O K.

Through the kindness of Mr. Guignard, I have been privileged to examine a few Provancher types in his collection. The following is a summary of this examination:—

Stilpnus appendiculatus = Hemiteles humeralis ♂.

Phygadeuon Guignardi = Ichneumon mendax, Cress.

Hemiteles mucronatus is O K.

Cryptus ornatus, O K.

Cryptus erythropygus, O K.

Cryptus 3-annulatus, O K.

Cryptus gracilis, O K.—*Cryptus rectus* answers the description of this species quite as well if not a little better. They are probably synonymous, though perhaps not.

Cryptus albocinctus, O. K.

Limmeria Guignardi has already been spoken of in referring to the types in Mr. Harrington's collection.

Bassus dorsalis ♀ = *Hemiteles* ♂.—This is the true type and not the specimen in the Provancher collection referred to the genus *Plectiscus*.

Ephialtes variatipes is the ♂ of *Ephialtes macer*, Cress.

SYSTEMATIC VALUE OF THE LARVA OF SPERMOPHAGUS.

BY WM. HAMPTON PATTON, HARTFORD, CONN.

The seeds of *Gleditschia triacanthus* frequently show a narrow scar upon the surface. Rarely two of these scars are found upon the same seed. These scars are about one-eighth of an inch long; and indicate the presence of *Spermophagus gleditschiae*, a Bruchid beetle, of a mottled, tawny appearance, frequently bred from these seeds in the spring. The grub remains in the seed over winter, changes to pupa in the spring and soon emerges, as a perfect beetle, through a rounded hole in the side of the bean-seed.

The larva, observed by me in the middle of December, is an incurved Chrysomelaform grub, provided with three pairs of legs, as well developed as those of the larva of *Eupsalis* and *Anthrribus*. The thoracic segments are the thickest and the body tapers towards the apex. The head is partly sunken in the first segment. Along the sides the segments are slightly protuberant, and in other particulars an analogy to the larvæ of the typical Rhynchophora is shown; but the presence of thoracic legs proves the insect to belong to a different family of beetles. In the young larva the legs are probably long as in that of *Bruchus*. Mr. H. F. Wickham, in a paper published in 1894, describes the larva of *Spermophagus*.

Prof. J. O. Westwood, in Vol. I. of his "Introduction," states that the larva of *Bruchus* has minute legs. The larva of *Bruchus fabæ*, Riley, has been figured by Dr. Packard (Am. Nat., Sept., '73, p. 537, fig. 141) as a footless grub with a minute head. The larva of *Spermophagus* shows this to be an error, the head being of considerable size, and there being six legs. The mandibles were evidently mistaken for the head by Dr. Packard; and the head mistaken for the first segment. Mr. F. A. Marlatt (2nd Rep. Kansas Ex. Sta., p. 210) says the larva of *Bruchus obsoletus*, Say, is footless; but his figures, 2 and 3, on plate IX., give a better representation and show the legs.

NOTES ON A TRIP TO THE BAHAMA ISLANDS.

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

Comparatively little is known of the insect fauna of the Bahama Islands, since most of the collectors who have gone to the West Indies have confined their attention chiefly to larger and better settled members of this great group, and as a consequence we have a tolerably fair knowledge of such of them as Cuba, Jamaica, Porto Rico, and Guadaloupe, with scarcely any records from the little rocky islets of which the Bahamas proper are composed. Late researches on the coast of Florida have shown a close affinity between the fauna of that region and of the Antilles, so that the study of the insects of the latter has now a direct bearing on that of those of our own domain. The short sketch which follows is intended merely as a preliminary account of a collecting trip to certain points in the British West Indies, and no more is hoped for than to give the reader a general idea of the coleopterous fauna of these at the time of year during which the collections were made. Only occasionally was it possible to land and work the country for insects, as the main object of the expedition, of which the writer was a member, was the study and collection of the marine invertebrata, and most of the time was necessarily devoted to them.

Regarding the general characters of the Bahama Islands, it may be enough to say that they are British possessions, having been first settled in 1629 by that people, but frequently changing hands until 1783; since that time they have remained under English control, and are populated largely by descendants of that nationality, with a very considerable admixture of negroes, who, indeed, predominate on some of the islands, almost to the exclusion of the whites. Excepting the very small rocky islets, all are inhabited, but the soil is so light and stony that its productive powers are limited, and hence we find the principal exports to be fruit, especially pineapples and cocoanuts. Aside from these, some of the larger islands export brazilleto, yellow-wood, lignum-vitæ and fustic, and at one time cotton was an article of considerable commercial importance, but is now little grown. The citrus fruits flourish, but are apparently not exported to any great extent. The uncultivated portions of the surface, which include the greater part of the whole area, are covered in the main by tangled thickets of various shrubs and vines difficult of penetration, and hard to work in. Owing to the broken nature of the islands, farming can only be carried on in small patches and in the most primitive manner.

The geographical features are rather remarkable : the group forms an irregular triangle, the sides of which are about 720, 600 and 200 miles long. They lie within the influence of the trade winds, and inside the zone of hurricanes, which often do much damage, as the islands are mostly small and low, usually under 100 feet above tide level, the loftiest not over 400, while often they lie almost even with the water. In composition they are chiefly white sandstone or coral rock more or less disintegrated, often with sand beaches of dazzling whiteness. Situated on the edges of coral banks, often of a most dangerous character, and with so little of commercial attractiveness, we find most of the trade between the Bahamas and United States to consist of "fruiting," which is carried on in small schooners of from 150 to 200 tons burthen, plying chiefly between the island ports and Baltimore.

With this rather extended preliminary account, attention may now be directed towards the insect fauna. The first researches we made in this direction were on Egg Island, May 12th. This is a small wooded islet about a mile in length and 67 feet high ; on the topmost point is situated a lighthouse, while the beach along the harbour is adorned with an extensive cocoanut grove. Arriving about six o'clock in the evening, a short trip was made ashore, one of the objects in view being the capture of fire-flies, which could be seen flitting around in the thickets. Only one could be captured, however, and this proved to be a *Pyrophorus*, a genus of Elaterid beetle in which the light is emitted from two whitish spots, one on each side near the hind angles of the prothorax. This light is under the control of the insect to some extent, since two or three of the beetles that were knocked down became at once invisible, when they could certainly have been seen had the light continued. It was found later that in such cases the *Pyrophorus* could often be taken by carefully feeling in the dark for it—placing the palm of the hand flat on the ground over the spot where it was thought the specimen had fallen, and its presence would then be betrayed by its "snapping" in the manner of most elaters when pressure is applied.

Next morning another opportunity was afforded for going ashore, and by beating bushes over an umbrella a good number of additions were made to the collections of Coleoptera, though search along the beach and lagoons yielded no Cicindelidæ nor Carabidæ whatever. It is probable that they are rare on the island, as they seem, in fact, to be in most spots in the

Bahamas. A number of the Staphylinid, *Cafus bistriatus*, Er., were taken under sea-weed, in just such situations as they frequent along our southern Atlantic coast. On the bushes were found an *Olibrus*, a number of the widely-distributed *Coccinella sanguinea*, a little *Scymnus*, a curious Lathridiid which probably belongs to the genus *Monædus*, and a number of specimens of a very small *Corticaria*. A species of *Monocrepidius* was found occasionally, which looks like our *M. lividus*. A *Hemiptychus* obtained here agrees with Dr. Leconte's description of *H. similis*, which occurs in Florida, while another species of the same genus, together with *Catorama* and a *Petalium*, occurred occasionally. The Cerambycidae were represented by *Eburia stigma*, Oliv. (*duvalii*, Chev.), an *Elaphidion* of small size and two species belonging to genera not yet identified. The Chrysomelidæ furnished species of *Cryptocephalus* and *Pachybrachys*, the former being represented most commonly by what seems to be *C. marginicollis* or a closely-allied form. Weevils were tolerably plentiful, especially an *Artipus*, which was everywhere in evidence; more rare were species of *Pachneus* and *Conotrachelus*. *Lembodes solitarius*, Boh., a very curious weevil, found also in Florida, was beaten from herbage on the hill; it looks very little like a weevil, the posterior end being truncate and emarginate, while the pronotum is long, flattened, and extends quite over the head when the beetle is at rest. The prosternum is deeply excavated for the reception of the rather heavy beak, but the large legs seem not to be closely approximated to the body when the insect feigns death, but rather simply folded. The upper surface of the body is roughly sculptured and heavily scaled—a fringe of the latter around the anterior prothoracic margin giving that part a very strange appearance. The aspect of the beetle when shaken into a net is, on account of its grayish and brownish hues, irregular shape and sculpture, that of a small piece of dead twig, or a withered bud.

During the next week the vessel was cruising on the banks, and no land was touched. All this time, of course, nothing could be done in the line of Entomological work beyond keeping a lookout for such insects as might fly or be blown on the vessel. On the morning of May 18th, while lying some fifteen miles off Riding Rock, and after a heavy squall from that direction the night before, three moths were taken on the deck of the schooner, and also a specimen of *Cicindela tortuosa*. This was the first tiger-beetle our party saw in the Bahamas, though they were found in small numbers later on.

Water Cay, which is on the Salt Cay Bank, far to the westward of the main group of the Bahamas, was the next point at which we landed, and here a hard row of five miles was necessary to reach the shore. Only three hours were afforded for an examination of the place, and thus few insects were found. The main inhabitants were sea birds, which were excessively numerous, and bred in the crannies in the rocks, and hermit crabs (*Cenobita diogenes*), which occupy the places we are used to think of as belonging to the ground beetles. The rocky surface of the Cay, with its patches of coral sand and occasional hollow filled with black soil, was destitute of the wooded covering such as we saw on Egg Island, and diversified only by a few straggling bushes and herbs. A *Polycesta* was taken, however, which seems to be *velasco*, while an *Euphoria* has been referred with some doubt to *E. sepulchralis*, from my specimens of which it differs in the darker colour, with less metallic lustre, and more evident white markings, as well as in the somewhat coarser sculpture. The other genera that were recognized are: *Scymnus*, *Saprinus*, *Catorama*, *Cryptocephalus*, *Phaleria*, *Artipus* and *Dryotribus*; the last probably *D. mimeticus*, Horn, which has been taken in the Florida Keys.

For several weeks after leaving Water Cay nothing further was done in the Bahamas, the intervening time being spent in the vicinity of Cuba and Florida. Returning, we finally reached Harbor Island, near the northern end of Eleuthera, after a long run from Key West, and were promptly run fast on a sand-bar by a pilot. Landing on the morning of August 9th, the surface of the island was found to resemble that of Egg Island, which is in the immediate vicinity; the webs of two or three large showy spiders were common in the brush, while the song of invisible Cicadas ("singers," the Bahamans call them) filled the air on every side. Butterflies were more numerous than usual, but not being the especial object of search they were neglected for the sake of the favorite Coleoptera, since there was no time to carefully collect both. Turning, therefore, to the beetles, a little *Plochionus* was beaten from bushes as the sole representative of the Carabidæ. There were plenty of *Cafius bistriatus* on the beach under sea-weed, while of the Coccinellidæ there were beaten from bushes specimens of *C. sanguinea*, *Psyllobora nana*, and a little *Scymnus*. Several of the *Monocrepidius* mentioned as occurring on Egg Island were found here, also the Longhorn *Spalacopsis filum*, Klug. Of Chrysomelidæ there were not many—a Halticid and an Eumolpid being the most showy ones—and of Tenebrionidæ the most notable form was a

Phaleria allied to or identical with our *Phaleria longula*, but they were of a dark variety, black or brown above, with occasionally one showing a clay-coloured elytral border. *Anchonus* was found commonly under a drift log, this being the genus described from Southern Florida under the name *Gononotus*, Leconte. *Artipus* was extremely common in the brush, and may be found injurious in the Bahama's, as it has of late in Florida—its omnivorous habits rendering it a foe to many different plants.

It is only a few hours' run from Harbour Island to Spanish Wells, at the northern end of Eleuthera, so when some of the party came on deck next morning they were not surprised to find the vessel skimming along the rocky coast of that island, which, from its size and wooded surface, seemed to offer the most favourable conditions for collecting insects of any of the Bahamas that we had seen. About sixty miles in length, though very narrow, this island supports a larger population than most of its neighbours, and is said to be particularly adapted to the cultivation of the pineapple, while oranges, bananas and sapodillas are raised in some quantity. There are also large cocoanut groves on the beaches, the nuts being exported in greater or less numbers.

Here were found the first specimens of tiger-beetles that we had seen on the islands, two species, *Cicindela marginata* and *C. tortuosa*, being taken, the former the more commonly. It was rather too warm in the sunshine to make chasing them a particularly agreeable task, so a few examples were made to fill our wants. Of Carabidæ we took, or purchased, specimens of a *Scarites*, which, though probably *subterraneus*, is smaller than any of these that we have seen elsewhere, *Plochionus pallens* and *Apenes opaca*. The same Staphylinidæ and Coccinellidæ were captured as already given for Harbour Island, while in some of the succeeding families Eleuthera seemed much richer. A large *Pyrophorus* was common in the cocoanut groves, the lights gleaming for a moment and then disappearing in a way very provoking to one not familiar with the ground, and likely at any moment to run into a tree or fall over a log in the chase in the dark. The native children, however, were glad to catch them for us at the rate of a half-penny each, and in this way a good series was obtained with little trouble. The Buprestidæ were represented by *Acmaeodera cubæcola*, Duval, and *Gyascutus carolinensis*, Horn; the Ptinidæ by species of *Hemiptychus*, *Catorama* and *Sinoxylon*, while Longicorns were numerous in specimens, though not many species were

seen. Of these, *Elateropsis rugosus*, Gahan, seems worthy of special note, as it has been very rare in collections, and only since our taking it on Eleuthera has the exact habitat been known. In both sexes the upper surface is extremely roughly sculptured, forming rugosities on the disk of the thorax and elytra, and to a lesser degree on the head. The antennæ are brown or black, the legs reddish, but the sexes differ widely in the colour of the upper surface, which, in the males, is uniform brown or blackish, while in the females there is a broad stripe of white pubescence on the head, and three (one median, two lateral) on the prothorax, while the elytra have each a broad dorsal and narrow lateral stripe. In perfectly fresh examples the thorax has also an incomplete transverse basal band. A series of over forty specimens shows that the males vary in length from 16 to 32 mm., while the females run from 21 to 35 mm. A fine *Elaphidion* occurred on the island, also specimens of *Eburia stigma*, *Plectromerus dentipes*, and a *Cyllene*. An example of *Spalacopsis* I refer to *S. filum*, Klug, of which specimens are known from Porto Rico, Cuba, Haiti, and Florida. It is a curious insect, with a general resemblance to *Dorcasta cinerea*, and having the antennæ clothed with hairs in much the same manner, but the body is much more elongate, and when the beetle is beaten into a net it assumes a position of perfect rigidity, in which condition it can scarcely be distinguished from a bit of stick. Several Chrysomelidæ were obtained, all small and belonging chiefly to the Eumolpini and Halticini. Further, there are species of *Bruchus*, *Hymenorus*, *Oxacis* and *Anthicus*, but as usual the chief development seems to be in the Rhynchophora, where the following genera have been thus far recognized: *Artipus*, *Pachnæus*, *Anthonomus*, *Conotrachelus*, *Chalcodermus*, *Macrancylus* and *Dryotribus*. There are also several which are yet unknown, and may remain so for some time, since the Coleopterous fauna of these little islands has received no particular attention, and has formed the subject of no special memoirs. It is hoped, however, that the labours of the British West Indian Committee will result in the publication of a long series of papers similar to those lately published through their instrumentality, and in the clearing up of the questions surrounding the affinities and origin of the fauna of this group, which has evidently a close relationship with some portions of our own.

LIST OF LEPIDOPTERA TAKEN AT SUDBURY, ONT.

BY JOHN D. EVANS, TRENTON.

This list embraces all the species of diurnals captured, viz., 51, and those of the nocturnals, 125, but of the latter possibly as many more are as yet undetermined. To Mr. Jas. Fletcher for the butterflies, and Mr. J. B. Smith and Rev. Geo. D. Hulst for the nocturnals, I am indebted for their kindness in making determinations; to the first named I am also deeply grateful for many kindnesses extended at various times and for counsel and advice.

Among the diurnals special mention may be made of *Erebia discoidalis*, Kirby. Upon one occasion only (12th May, 1889) has this species been captured in this district, when the writer took five specimens, 4 ♂'s and 1 ♀, all in good condition, and Dr. Peters, at the same time and place, took two or three specimens, but the sexes were not ascertained.

During the season of 1886, *Colias interior* was quite common and *C. philodice* very rare, but in subsequent seasons the latter became the more numerous and the former very scarce:—

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| Danaïd Archippus, <i>F.</i> | Pyrameis Cardui, <i>L.</i> |
| Argynnis Cybele, <i>F.</i> | Limnitis Arthemis, <i>Dru.</i> |
| " Aphrodite, <i>F.</i> | Debis Portlandia, <i>F.</i> |
| " Cyprius, <i>Edw.</i> | Neonympha Canthus, <i>Bd.-Lec.</i> |
| " Atlantis, <i>Edw.</i> | " Eurytris, <i>F.</i> |
| " Myrina, <i>Cram.</i> | Erebia Discoidalis, <i>Kirby,</i> |
| " Bellona, <i>F.</i> | Satyrus Alope, <i>F.</i> , form Nephelē, |
| Melitæa Harrisii, <i>Scud.</i> | <i>Kirby.</i> |
| Phyciodes Nycteis, <i>Doub.-Hew.</i> | Thecla Humuli, <i>Harr.</i> |
| " Tharos, <i>Dru.</i> | " Calanus, <i>Hbn.</i> |
| Grapta Comma, <i>Hav.</i> , form Dryas. | Feniseca Tarquinius, <i>F.</i> |
| <i>Edw.</i> | Chrysophanus Hypophleas, <i>Bd.</i> |
| Grapta Faunus, <i>Edw.</i> | Lycæna Pseudargiolus, <i>Bd.-Lec.</i> , |
| " Gracilis, <i>Gr.-Rob.</i> | form 1 Lucia, <i>Kirby.</i> |
| " Progne, <i>Cram.</i> | Lycæna Pseudargiolus, form 2 Mar- |
| " J. Album, <i>Bd.-Lec.</i> | ginata, <i>Edw.</i> |
| Vanessa Antiopa, <i>L.</i> | Lycæna Pseudargiolus, form 3 |
| " Milberti, <i>Godt.</i> | Violacea, <i>Edw.</i> |
| Pyrameis Atalanta, <i>L.</i> | Lycæna Comyntas, <i>Gdt.</i> |
| " Huntera, <i>F.</i> | |

- Pieris Napi*, *Esper.*, form *Oleracea-hiemalis*, *Harr.*
Colias Eurytheme, *Bd.*, form *Eriphyle*, *Edw.*
Colias Philodice, *Gdt.*
 " *Interior*, *Scud.*
Papilio Turnus, *L.*
Carterocephalus Mandan, *Edw.*
Pamphila Zabulon, *Bd.-Lec.*, var. *Hobomok*, *Harr.*
Pamphila Zabulon, *Bd.-Lec.*, form ♀ *Pocahontas*, *Scud.*
Pamphila Manitoba, *Scud.*
 " *Peckius*, *Kirby.*
 " *Mystic*, *Scud.*
 " *Cernes*, *Bd.-Lec.*
 " *Metacomet*, *Harr.*
Amblyscirtes Vialis, *Edw.*
Nisoniades Brizo, *Bd.-Lec.*
 " *Icelus*, *Lint.*
 " *Juvenalis*, *F.*
Eudamus Pylades, *Scud.*
Hemaris diffinis, *Bdv.*
 " *pelagus*, *Cram.*
Deilephila Chamænerii, *Harr.*
Ampelophaga myron, *Cram.*
Sphinx Kalmiæ, *S. & A.*
 " *drupiferarum*, *S. & A.*
 " *chersis*, *Hbn.*
Ceratonia undulosa, *Walk.*
Triptogon modesta, *Harr.*
Smerinthus geminatus, *Say.*
 " *cerisyi*, *Kirby.*
Paonias excæcatus, *S. & A.*
Cressonia juglandis, *S. & A.*
Sesia—sp. ?
Ctenucha Virginica, *Charp.*
Alypia Mac-Cullochii, *Kirby.*
Hypoprepia fucosa, *Hbn.*
Callimorpha Lecontei, *Bdv.*
Platarctia hyperborea, *Curt.*
Arctia parthenice, *Kirby.*
 " *virguncula*, *Kirby.*
 " *determinata*, *Neum.*
Pyrrharctia isabella, *S. & A.*
Phragmatobia rubricosa, *Harr.*
Spilosoma virginica, *Fabr.*
Hyphantria cunea, *Dru.*
Halisidota caryæ, *Harr.*
Ichthyura inclusa, *Hbn.*
 " *albosigma*, *Fitch.*
Gluphisia trilineata, *Pack.*
Lophopteryx elegans, *Strk.*
Pheosia rimosa, *Pack.*
Oedemasia badia, *Pack.*
Cerura occidentalis, *Lint.*
Actias luna, *Linn.*
Telea polyphemus, *Cram.*
Dryocampa alba, *Grt.*
Cisiocampa Americana, *Harr.*
Hepialus argenteomaculatus, *Harr.*
Thyatira scripta, *Gosse.*
Raphia frater, *Grt.*
Arsilonche henrici, *Grt.*
Acronycta innotata, *Gu.*
 " *dactylina*, *Grt.*
 " *distans*, *Grt.*
 " *sperata*, *Grt.*
 " *oblinita*, *S. & A.*
Rhynchagrotis placida, *Grt.*
Eueretagrotis perattenta, *Grt.*
Pachnobia salicarum, *Walk.*
Agrotis ypsilon, *Rott.*
Peridroma astricta, *Morr.*
Noctua plecta, *Linn.*
 " *C. nigrum*, *L.*

- Noctua clandestina*, *Harr.*
Feltia jaculifera, *Gn.*
Porosagrotis mimallonis, *Grt.*
Carneades messoria, *Harr.*
 " *ochrogaster*, *Gn.* var.
 " *obeliscoides*, *Gn.*
 " *divergens*, *Walk.*
Mamestra purpurissata, *Grt.*
 " *grandis*, *Bdv.*
 " *rosea*, *Harr.*
 " *cristifera*, *Walk.*
 " *adjuncta*, *Bdv.*
 " *legitima*, *Grt.*
 " *lorea*, *Guen.*
Hadena impulsiva, *Gn.*
 " *sputatrix*, *Grt.*
 " *devastatrix*, *Bracc.*
 " *arctica*, *Bdv.*
Hillia vigilans, *Grt.*
Hyppa xylinoides, *Gn.*
Brotolomia iris, *Gn.*
Nephelodes minians, *Gn.*
Hydroecia nictitans, *Bkh.*
 " *nitela*, *Gn.*
Leucania albilinea, *Hbn.*
 " *adonea*, *Grt.*
 " *commoides*, *Gn.*
Caradrina miranda, *Grote.*
Orthodes cynica, *Gn.*
Taenioctampa oviduca, *Grt.*
Cosmia paleacea, *Esp.*
Scoliopteryx libatrix, *L.*
Caioctampa nupera, *Lint.*
Piusia bimaculata, *Steph.*
 " *octoscripta*, *Saub.*
 " *ampla*, *Walk.*
Erastria carneola, *Gn.*
Drasteria erechtea, *Cram.*
Syneda Alleni, *Grt.*
Catocala briseis, *Edw.*
 " *concombens*, *Walk.*
 " *relicta*, *Walk.*
Catocala antinympha, *Hbn.*
Prochærodes clemataria, *S. & A.*
 " *transversata*, *Dru.*
Metanema inatormaria, *Gn.*
Ennomos magnaria, *Hbn.*
Azelina hubnerata, *Gn.*
Endropia effectaria, *Walk.*
 " *bilinearis*, *Pack.*
 " *madusaria*, *Walk.*
Sicya macularia, *Harr.*
Angerona crocataria, *Fabr.*
Semiothisa enotata, *Gn.*
 " *granitata*, *Gn.*
Phasiane atrofasciata, *Pack.*
 " *trifasciata*, *Pack.*
Thamnonoma wauaria, *L.*
 " *evagaria*, *Hulst.*
Lozogramma defluata, *Walk.*
Orthofidonia exornata, *Walk.*
Caripeta latiorata, *Walk.*
Dasyfidonia faxiniaria, *Minot.*
Hæmatopis grataria, *Fabr.*
Caterva catenaria, *Cram.*
Cleora semichusaria, *Walk.*
Boarmia pampinaria, *Gn.*
 " *umbrosaria*, *Gn.* near var.
 " *larvaria*, *Gn.*
 " *crepuscularia*, *Tr.*
Tephrosia canadaria, *Gn.*
Baptria albovittata, *Gn.*
Lobophora montanata, *Fack.*
Petrophora testata, *L.*
 " *nubilata*, *Pack.*
Rheumaptera ruficollata, *Gn.*
 " *lacustrata*, *Gn.*
Hydriomene trifasciata, *Bork.*
Epirrita inclinata, *Walk.*
Plemyria fluviata, *Hbn.*
Phlyctænia tertialis, *Gn.*
Loxostege chortalis, *Grt.*
Scoparia centuriella, *S. V.*

OBITUARY.

CHARLES W. STROMBERG died at his home in Galesburg, Ill., on Tuesday, March 26th, 1895, of consumption. He was in failing health for a number of years, and made a trip to Phoenix, Arizona, early in 1894, returning in November of that year, but did not find the relief he anticipated. His most grievous illness only preceded his death about a month. Mr. Stromberg was born in Sweden, July 24, 1856, and came to the United States with his parents in 1866. He was a resident of Galesburg up to the time of his death. He early became devoted to scientific studies, and for the past fifteen years has been a close student and collector in Entomology, making a specialty of Coleoptera, of which he had a most complete collection. He was exact and thorough in all his scientific work, as was recognized by his Entomological correspondents in both the United States and Canada, and in the neatness and care with which his exchanges were prepared. He was known, either personally or by correspondence, to all the prominent coleopterists in North America, and his field notes on his favourite families were always read with pleasure and interest.

Mr. Stromberg was quiet, reserved, and gentlemanly in his tastes and disposition, and was held in high esteem by all who knew him. His death, at a comparatively early age, is a serious loss to Entomology, as his genius for correct classification, his thorough observation and his deftness in handling would in the near future have placed him among the foremost workers in this branch of science. He was a welcome contributor to the leading Entomological journals, and an extensive collector for the Colleges of his State.

W. KNAUS, MacPherson, Kansas.

MR. C. H. TYLER TOWNSEND, temporary Field Agent of the Division of Entomology, U. S. Department of Agriculture, desires to inform his correspondents that he has again removed to Las Cruces, New Mexico.