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S. S. Haldeman 1865.

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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXIII. JANUARY, 1912. No. 1.

CONTENTS:

Professor S. S. Haldeman.

(Portrait, Plate I.)

Following the plan adopted for 1911, of placing on the covers of the NEWS the portrait of one of the older American Entomologists, we present for 1912 the portrait of Prof. S. S. Haldeman, adding the following biographical sketch.

SAMUEL STEHMAN HALDEMAN was born August 12, 1812, at Locust Grove, Pennsylvania, and died at Chickies in the same State, September 10, 1880. He spent two years as a student in Dickinson College, Pa., but the rest of his education was self-directed. He was Professor of Natural History in the University of Pennsylvania 1851-1855, Professor of Comparative Philology in the same 1869-1880, and Professor of Natural History in Delaware College in 1855, "acting also as Professor of Geology and Chemistry to the State Agricultural College." The Royal Society's *Catalogue of Scientific Papers* lists 61 titles on geological and zoological subjects from his pen between 1839 and 1881, 30 of them being entomological (chiefly on Coleoptera). "Failing eye-sight compelled him eventually to give up his studies in Zoology, and to devote his whole time to Linguistics." A biographical notice, by Dr. D. G. Brinton, with quotations from Dr. J. L. Le Conte, was published in the *Proceedings of the American Philosophical Society,* Volume XIX, pages 279-285.

An Injurious Grasshopper at Ridgeway, New Jersey (Orth.).

By Wm. T. Davis, New Brighton, Staten Island, N. Y.

In the last list of the Insects of New Jersey the grasshopper *Dendrotettix quercus* Riley is reported from Bamber, collected by Mr. Daecke, August 17th. This is said to be the only record of the species in the Eastern United States.

Dendrotettix did damage to the oak trees at Ridgeway, N. J., in 1910. A few were found on August 16, 1910, about a mile west of Lakewood, and last year they were very common on the oaks about Ridgeway and north to where the road to Lakewood crosses Toms River. A single specimen was discovered on a post oak at Lakehurst on August 15, 1911, so the known range of the insect is from Bamber to Lakewood, a distance of about twelve miles, and westward for a few miles. The damage has been so great that the many defoliated trees near Ridgeway are noticeable from the windows of a moving train. The gayly colored grasshoppers are more common on the white oaks, though they eat the foliage of scarlet oaks and other members of the red oak group. Some of the scarlet oaks near Ridgeway have been hard pressed by enemies. They support many large woody galls of *Callirhytis punctata* on their limbs; they have had thousands of eggs of the seventeen-year cicada laid in their branches, which have caused the ends of many of them to break off and die, and lastly the trees have been defoliated by the grasshoppers.

Mr. W. DeW. Miller, of the American Museum, and I, counted on the trunks of some trees, as many as forty grasshoppers, usually slowly making their way up to what remained of the foliage, and the excrement of the grasshoppers on the limbs fell with a rain-like patter on to the dry leaves beneath. Some of the grasshoppers were fully winged and others were apterous. Individuals between these two states were not common. We have before noticed this in other Orthopterous insects. Nature either prepares them for flight or the reverse; there is hardly a half way condition. In addition

to the oaks the grasshoppers when pressed for food will eat other plants, and we observed where several had devoured parts of the leaves of a sumach, *Rhus copallina.* They did not seem to like wild cherry, *Prunus serotina.*

It is evident that if the seasons continue favorable, this grasshopper may become a serious pest in New Jersey, as it has been in Missouri and Texas, according to the writings of Dr. Riley and Prof. Bruner.

Thecla dumetorum and T. affinis; a Study (Lepid.).

By J. R. HASKIN, Los Angeles, Cal., and F. GRINNELL, JR., Pasadena, Cal.

Although *Thecla dumetorum* was described in 1852 and *affinis* in 1862, very little has been written about them. Apparently no effort has been made to check the descriptions in spite of the fact that Western collectors have long felt that they did not correctly describe the common green *Thecla* of the Western States.

It seems to have become generally understood that *dumetorum* should have a row of white spots across both wings, on under side, while *affinis* should be spotless. When, therefore, it is found that the majority of specimens follow neither of these extremes, but have a number of spots on secondaries only, their proper classification gives rise to the question, just what did Boisduval and Edwards have in mind when they wrote their descriptions.

T. DUMETORUM.

Boisduval was the first to describe our green *Thecla* from material collected by Lorquin in the early fifties. In his Lepidopteres de la Californie, 1852, p. 19, he wrote:

"22 Thecla Dumetorum."

"Ce *Thecla* ressemble tout a fait a notre *Rubi,* et pourrait bien etre une simple variete locale de cette espece.

"Il lui ressemble en dessus, sauf que les ailes inferieures sont moins denticulies, et que la palette anale est a peu pres nulle; en dessous, la ligne de points blancs est plus marquee, et le disque des ailes super-

ieures est beaucoups plus largement roussatre, ce que fait que le vert domine moins."

A free translation into English is as follows:

"This *Thecla* quite resembles our *Rubi* and may well be considered a simple local variety of that species. It resembles it on upper side, except that the secondaries are less denticulated and the anal palette nearly void; on under side, the line of white spots is more marked and the surface of the primaries is much more russet colored, which makes the green less predominant."

Thus we see that Boisduval describes *dumetorum* as quite like *T. rubi,* although with some minor points of difference. We must therefore obtain some information concerning *rubi,* especially its correct description.

From Meyrick's Handbook of British Lepidoptera, 1895 p. 343:

"*T. rubi.* L. 25-31 mm. fore wings and hind wings rather dark fuscous, ochreous tinged; hind wings with termen waved. Wings beneath rather metallic green, fore wings becoming fuscous dorsally sometimes with white postmedian line; hind wings sometimes with postmedian white line or series of dots.

Britain to Ross, Ireland, common; Europe, N. and W. C. Asia, Japan, N. Africa; 5, 6. Larva green; dorsal line lighter, darker edged; subdorsal series of oblique subconfluent streaks, edged beneath with dark green; spiracular line yellow; head pale brown; on *Genista, Cytisus, Ulex,* and *Vaccinium;* 6, 7. Pupa subterranean."

With this description before us, we see that *dumetorum,* being quite like *rubi,* has "fore wings * * * sometimes with postmedian white line; hind wings sometimes with postmedian white line or series of dots." An English collector has written Mr. E. J. Newcomer, of Palo Alto, Cal.: "It has been noticed that in some northern localities there is an inclination to develop the white markings into a series of dots across all the wings. The spotless form seems more noticeable in the South."

It is very evident then that specimens of our common green *Thecla* with well marked spots were received by Boisduval and named *dumetorum.*

Dumetorum was probably named from a limited or moderate series of specimens. A careful study of a long series and a close comparison with specimens of *T. rubi* has brought out a

number of points that are decidedly at variance with Boisduval's description. We have in our combined collections 149 specimens of *dumetorum,* collected at Santa Barbara, Newhall, Burbank, Los Angeles and vicinity, Pasadena and vicinity, and San Diego. Mr. Newcomer, of Palo Alto, has also kindly written us concerning the spots on twenty-nine specimens in his collection, taken at Palo Alto, San Luis Obispo and Lake Tahoe. Also, Mr. Grinnell fortunately has three good specimens of *rubi,* from England, in his collection.

Our 149 specimens, when assembled for study, were found to consist of 110 ♂ and 39 ♀. When these were separated and arranged in convenient rows, the first thing noticed was the great variation in general appearance between the fresh and the worn specimens. This was particularly noticeable with regard to the upper surface color, fringes, denticulations and general outline. We therefore divided the set about equally into good and poor series and have used the good set to draw up a new description of *dumetorum.*

T. dumetorum.—Expanse 25-30 mm. ♂ above uniformly plumbeous without the decided fuscous tint of *rubi.* Under a certain glancing light a brownish luster can be noticed. ♀ above the centers of both wings reddish fulvous, surrounded by the plumbeous color of the ♂. This fulvous varies greatly in different specimens, being predominant in some and slight in others. All the ♀, however, have it to some degree, while all the ♂ have a noticeably different, uniform plumbeous color. On the best specimens a pale gray or whitish fringe is noticeable, being especially clear and broad towards the rear of secondaries. The denticulations and anal palettes are as clearly defined as in the European *T. rubi.*[1]

On under side the prevailing color is a bright metallic green but the posterior part of the primaries is broadly tan color, shading to gray towards the inner margin. With the wings closely folded the secondaries nearly cover the tan and gray of the primaries so that the insect appears to be uniformly bright green on under side.[2]

[1] These latter features are naturally not so noticeable on worn or even slightly worn specimens, as the edges of the wings wear out rapidly. This would easily account for Boisduval's exceptions on these points.

[2] In *T. rubi* the green covers fully two-thirds of the surface of the primaries, leaving a comparatively narrow strip of tan and gray along the inner margin.

Concerning the white spots on the under side—on our three specimens of *rubi,* from Cornwall and Dartmoor, England, the spots are clear white on the green background. In *dumetorum* the white spots are heavily bordered inwardly with brown. This brown border is very clearly shown in *T. sheridani,* which is much like *dumetorum* except that it has a broad white line, complete in some and slightly broken in other specimens, clear across both wings.

In *dumetorum* the most noticeable and persistent spots are two in number on the secondary, one being midway on the costa, the other nearly in the center of the wing between the second and third median nervules. These are frequently strengthened by other smaller spots tending to form an irregular postmedian line. On the 149 in our collections and the 29 in Mr. Newcomer's, one or the other of these spots persists in all but ten specimens which are spotless even when viewed through a low power glass. One specimen has a faint dot on costa of one wing only, while another specimen has a faint dot in center of one secondary. Two have only the costal spots on both secondaries, and fourteen have only the center spots, some clear and others faint. The predominant form has two spots, there being 108 of these. There are thirty others with two spots on the secondaries, but with faint brown markings on the primaries also; some of these are strengthened by traces of white spots.

Two have three spots on secondaries; two have three on secondaries and traces on primaries; three have three on secondaries and a distinct row of white spots on primaries; two have four spots on secondaries and a row of spots on primaries; finally, three have an irregular row of five spots on secondaries, the costal and central being large and predominant. Summing up in percentages, about 21 per cent. have spots on both wings, 73½ per cent. on secondaries only, 5½ per cent. on neither wing.

T. AFFINIS.

Mr. Edwards published *T. affinis* and its companion, *T. viridis* in 1862, from material sent him by Mr. C. Drexler and Dr.

H. Behr. We believe that if he had studied the green Theclas from an abundance of material and had given more thought to Boisduval's position, he would never have presented these two names, but would simply have amplified Boisduval's *dumetorum*.

Thecla affinis Edwards.—(From Proc. Acad. Nat. Sci. Phila., 1862, 223.)

Expands 1.1 inch.

Both sexes glossy red brown; brightest in female; the male has a smooth oval spot on disc of primaries; costa of primaries and base of both wings, blackish brown; whole hind margin edged with same color; fringe white; underside uniform apple green, except on inner margin of primaries, where it is pale brownish grey; both wings immaculate; costal edge of primaries grey; hind margin of secondaries with crenations.

Utah, from Mr. C. Drexler.

Both *viridis* and *affinis* are allied to *T. rubi* and to *T. dumetorum* of Boisduval. The latter, I have not seen, but it is chiefly described as being "entirely like *rubi*, and to be considered a local variety of that species," a description which does not apply to either of the above-named species. *Affinis* approaches most nearly to *rubi* in color below, but the upper side is much brighter and the white spots of underside are wanting. *Viridis* has similar spots to *rubi*, but the color of both sides is different, as is that of the antennae, edge of costa and fringe.

Thecla viridis Edwards.

Expands 1.2 inch.

Upper side of both sexes blackish; the male has a smooth oval spot on disc of primaries; hind margin of secondaries a little crenated toward anal angle; fringe whitish, at anal angle, brown. Under side uniform deep green, except on inner margin of primaries, where it is brownish grey; costal edge of primaries fulvous; across the green shade runs a common sinuous band of elongated, clear white spots; fringe of secondaries brown at the extremities of the nervures; antennae white; club dark brown.

It has been generally accepted that *viridis* is a synonym of *dumetorum*. We note in this description of *viridis* that the upper side is incorrectly given and the spots on under side relate to one of the unusual forms of *dumetorum*.

The so-called *affinis* types came from Utah, where both *dumetorum* and *sheridani* are found.[3]

[3] Vide Bruce, Ent. News, 8,134, 1897. Barnes, Ent. News, 11,330, 1900. Snyder, Ent. News, 12,302, 1901.

Edwards' types of *affinis* consist of 1 ♂ and 1 ♀ with an equal number of cotypes. Dr. Holland writes that the ♀ cotype has a minute spot on the costa of one secondary. We have one specimen in our *dumetorum* series marked similarly to this. The description of the upper surface color was taken from a limited number of specimens and is doubtless as misleading as was *viridis* Edwards, and *dumetorum* Boisduval. The under side represents another uncommon form of *dumetorum*, *viridis* and *affinis* representing the two extremes.

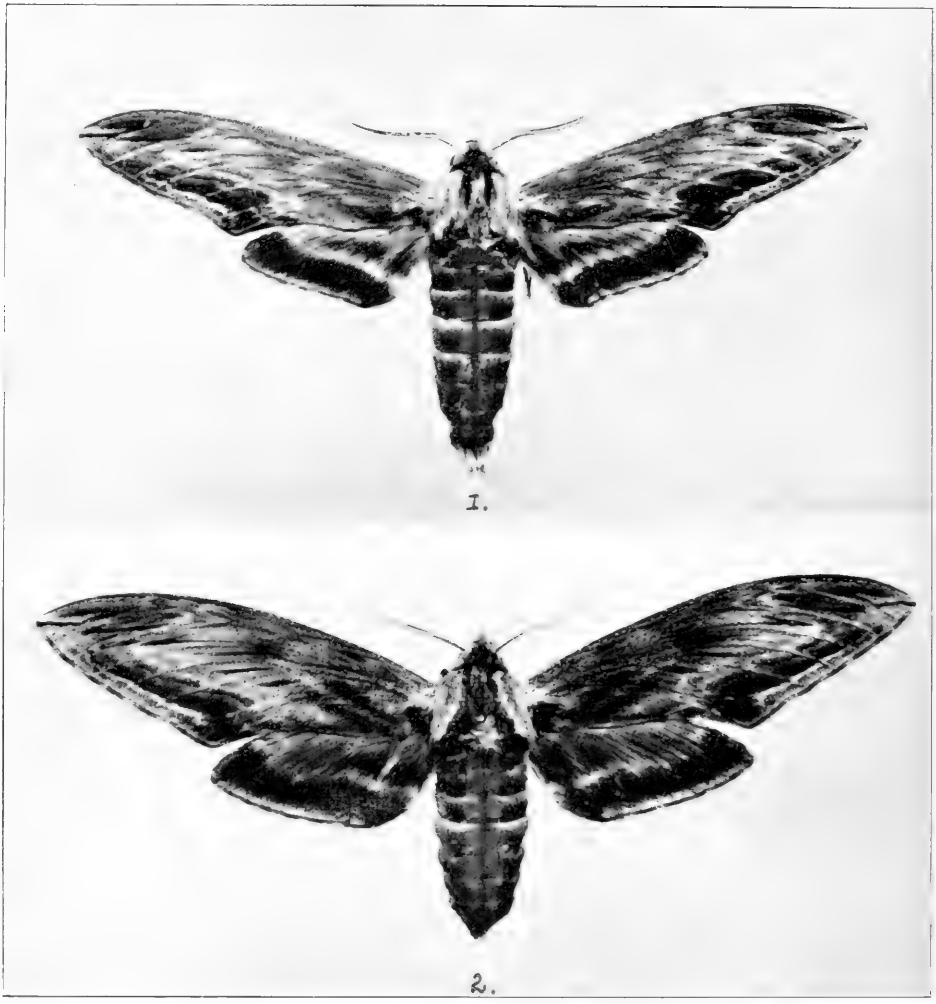
The net result of our investigation shows that there is a green *Thecla* in California which varies widely in the white markings on the under side. The range of this *Thecla* extends east to Utah and Colorado. Boisduval first described it but without a great degree of accuracy. Edwards followed with his descriptions of *viridis* from California and *affinis* from Utah, both descriptions following certain forms only.

From the above study, we believe our readers will agree with us that the correct synonymy of the butterfly under discussion is:

T. dumetorum Bd.,
Syn. *affinis* Edw.,
Syn. *viridis* Edw.

In conclusion, we wish to lay stress upon the importance of having an abundance of fresh and perfect material when studying specimens which very closely resemble already named species. Such men as Mr. Edwards, and there are some living in this year of our Lord, who have done so much magnificent work with the Lepidoptera, have names to conjure with and any inaccuracies in their writings are liable to create a condition of doubt and uncertainty which may take years to overcome.

Before closing, we desire to express our thanks to Dr. Holland, Dr. Skinner and Mr. Newcomer for valuable information which they have so kindly furnished one or the other of the authors.



SPHINX (HYLOICUS) FRANCKII—SMYTH.

1, MALE. 2, FEMALE.

Description of the Larva and first bred specimens of Sphinx (Hyloicus) franckii Neum. (Lepid.).

By Ellison A. Smyth, Jr., Blacksburg, Virginia.

(Plate II.)

A half mile avenue of young ash trees on the Experiment farm lands of the Virginia Polytechnic Institute at Blacksburg, Virginia, has for some years yielded me larvae of *Ceratomia undulosa* and *Sphinx* (*Hyloicus*) *chersis,* whenever sought for in season; at times, *Protoparce rustica* in numbers, and at intervals *Chlaenogramma jasminearum;* with the larvae of these species I have been intimate for years, and know them apart in any instar.

On the 25th of last August (1910), one of the boys, Mr. Barringer, hunting with me for *Protoparce rustica* in the ash avenue, brought me six full grown larvæ, of the general type of *chersis,* all from one ash tree, which larvæ were altogether new to me. By elimination, I concluded that they were either *canadensis* or *franckii,* with the chances largely in favor of the latter. Although lacking the anterior fleshy protuberances of *Ceratomia amyntor,* a pair of dorsolateral, tuberculated lines, strongly suggested the dorsal serrated ridge of that species. I sent a specimen at once to Dr. Beutenmuller, which reached him ready to pupate, and unfortunately died before he could have it figured. He agreed with me that it could be only *canadensis* or *franckii.* Of my remaining five larvæ, two died, one pupated on the surface of the breeding cage, and two went under earth before I could photograph or make a colored sketch. Fortunately, as a preliminary step to a water-color sketch, I had taken a careful description the afternoon they were brought to me, intending to paint in the morning.

The following is the description of these larvae, full grown, and at the end of their last instar:

Full length, 3¼ inches; pea-green dorsally and dorso-laterally, darker green laterally and ventrally; two dorsal longitudinal lines ¼ inch apart, green dorsad, edged with yellowish white laterad, and armed, on first three segments, with rather prominent, yellowish, pointed tu-

bercles, with whitish tubercles for rest of length, and suggestive of amyntor's central, dorsal, serrate line; these two lines fade out on the 10th segment. A lateral, whitish line from 4th to 11th segment, across which, dorso-caudad, the 7 oblique bands barely pass and abruptly end. Seven oblique, lateral stripes, each green cephalad, yellowish caudad; 7th most prominent and ending at base of caudal horn. Dorsal anal flap edged with yellow. Caudal horn apple-green, minutely punctulated with same color. Head apple-green, with two faint yellow lines. Thoracic legs pink. Stigmata cream-pink edged with brown. Three or four punctules over each proleg, parallel to oblique, lateral bands. Jaws black.

The pupa is almost identical in color, size, and shape with that of *chersis,* with the short, free "tongue case" of the latter, which is 3.5 mm. long on its under free surface.

The proof of an anticipated identity was yielded on May 3, 1911, when the surface pupa yielded a perfect and beautiful male *Sphinx franckii* (this is in Fig. 1, Plate II), and on May 11th one of the subterranean pupae disclosed a perfect female. (Fig. 2). The importance of testing the specific validity of this supposed hybrid sphinx, as well as the desire to obtain more specimens, urged upon me the duty of tying out this female for egg results, but the cold spring had so retarded everything that no hawk-moths had been seen on the wing as yet, and moreover, the ash trees were not in foliage, and the lilac barely out; with reluctance therefore, I killed the female also, and thus graced my collection with a perfect pair, the first ever bred, and the female, the only one in existence, as far as I know, of this rare species (?)

My male agrees fairly well with the colored figure given by Rothschild and Jordan, in their Monograph of the Sphingidae in Wytsman's "Genera Insectorum," though the black outer border of hind wings is even and continuous in my specimen, and not sagittate as in their figure, and the fore costal area is more evenly grey. Neumogen's original description of the then unique type, a male, in Ent. News, Vol. IV., p. 133, agrees fairly well with my specimen, though mine is 2 mm. longer than the type, in alar expanse.

The female is larger than the male, being 118 mm. in alar

expanse, while my male is 107 mm.; with more rounded wings than the male, and is much darker in color, the pink being much overclouded with a darker brown, and it is a handsomer insect. The photograph brings out fairly well the differences, even though in black and white.

Dr. Beutenmuller has written me that Mr. Schneider, of Baltimore, some time ago took an unknown larva from ash, which he described to Mr. Beutenmuller in a letter, though I believe this description was never published. It is thought by Dr. Beutenmuller to agree with the specimen I sent him. Unfortunately, Mr. Schneider's pupa was destroyed during the winter by accident. It may be noted that the original description as published by Mr. Neumogen, as well as the Catalogues of Drs. Smith and Dyar, give the name of the Sphinx as "franckii;" whereas Rothschild and Jordan, in the "Genera Insectorum" and also in their "Revision of the Sphingidae," Vol. I, p. 135, follow the custom of writing the name "francki."

As to the biologically important part of the matter, the specific validity of the insect; the constancy of coloring and characters in the three known examples, of both sexes, (one female and two males), might argue against hybridism, although among birds, for instance *Helminthophila leucobronchialis,* a supposed hybrid between *H. pinus* and *H. chrysoptera,* among our native warblers, there is much constancy in the markings of the known specimens. I cannot, however, agree that *Sphinx kalmiae* plays any part in the parentage, for the larva shows no resemblance to this species, whereas, as before suggested, there is more than a suggestiveness of the larva of *amyntor,* though *chersis* is the nearest; *amyntor* could contribute the cream-pink to the wings of *franckii* as well as could *kalmiae.* On the other hand, if *amyntor* and *chersis* are really in separate genera, as seems to be the case, it might be doubtful if they would interbreed; the general scheme of thoracic and wing markings of *franckii* are about as near *amyntor* as they are to *kalmiae,* though the abdominal spots are more similar to *kalmiae* and *chersis. Sphinx chersis* is abundant here, *Ceratomia amyntor* occurs at times and I have

several times found its larva on birch and elm; *Sphinx kalmiae* has been taken here only three times to my knowledge, and only once have I ever found its larva. The extreme rarity of *franckii* would seem to indicate hybridism, unless it be a rare "sport," or possibly it is a mutant. Without any real proof, I must confess that I believe in the specific validity of *Sphinx franckii.*

A Third Collection of Mallophaga from Alaskan Birds.

By V. L. Kellogg and W. M. Mann, Stanford University, California.

In 1900 a small collection of Mallophaga, collected by Mr. E. A. McIlhenny from birds shot by him at Pt. Barrow, Alaska, was described by Kellogg and Kuwana (Proc. Acad. Nat. Sci. Phil. v. 23, pp. 151-159, Pl. VII, 1900). Five new Mallophagan species were described and fourteen old species recognized in this paper. In a paper of 1902 on "Mallophaga from Birds of the Pacific Coast of North America" (Jour. N. Y. Entomological Soc. v. 10, pp. 20-28, Pl. III, 1902) Kellogg and Chapman recognized twelve known Mallophagan species from birds from Kodiak Island, Alaska, and described one new species from the same place. The present small collection of Mallophaga is composed of specimens taken from birds shot by the well known ornithologist, R. C. McGregor, at Norton Sound, Alaska, in 1900. The birds were determined by Mr. McGregor and the parasites were taken from the fresh host specimens. Fifteen host species are included in the list and seventeen parasite species, of which two are herewith described as new. In addition one new variety is recognized.

Docophorus communis Nitzsch.

Two specimens from *Melospiza cinerea,* Amaknak Is., Unalaska; four specimens from *Perisorius canadensis fuscifrons,* Norton Sound.

Docophorus cursor Nitzsch.

Two specimens from *Surnia ululu caparoch,* Norton Sound.

Docophorus fusiformis Denny.

One male from *Tringa ptilocnemis,* Norton Sound. This specimen agrees with those of Denny and Piaget in having the clypeus emarginate. There are few records of this species, in spite of its apparently wide distribution.

Docophorus icterodes Nitzsch.

Four specimens from *Arctonetta fischeri,* Duck-egg Island.

Docophorus lari Denny.

Five specimens from *Rissa tridactyla pollicaris,* no locality; one from *Tringa ptilocnemis,* Dexter Golofnin Bay, Norton Sound.

Docophorus sp. juv.

A specimen belonging to the *platyclypeatus* group, but too young to be specifically determined, from *Lagopus lagopus,* Norton Sound.

Nirmus complexivus Kellogg and Chapman.

Numerous specimens from *Tringa ptilocnemis,* one from *Tringa maculata,* Norton Sound; also a single specimen, probably a straggler, from *Perisorius canadensis,* same locality.

Nirmis eaprepes Kellogg and Chapman.

Seven specimens from *Arenaria interpres,* Norton Sound.

Nirmus lineolatus var. **atrimarginatus** Kellogg.

One specimen from *Rissa tridactyla pollicaris,* Norton Sound.

Nirmus infectus Kellogg and Kawana var. **connexus** var. nov.

Two males and two females from *Phalaropus lobatus,* Norton Sound. Differs from typical *infectus* in its relatively longer head, concolorous legs, and large dorsal blotches. The length of the head is .40 mm., width .24 mm. *Nirmus infectus,* known only from a single female from *Crymophilus fulicarius,* (Pt. Barrow, Alaska) is very close to *interruptus* of Piaget, from *Phalacrocorax carbo,* and may prove to be only a variety of this species.

Goniodes descrepans Kellogg and Paine.

One specimen from *Lagopus lagopus*, and two from *Tringa ptilocnemis*, Norton Sound.

Goniodes corpulentus sp. nov. (Figs. 1 and 2).

Four males, five females and one young, taken on *Canachites canadensis*, and two females and a young (undoubtedly stragglers) from *Tringa maculata*. Both hosts were shot on Norton Sound. This species is close to *damicornis*.

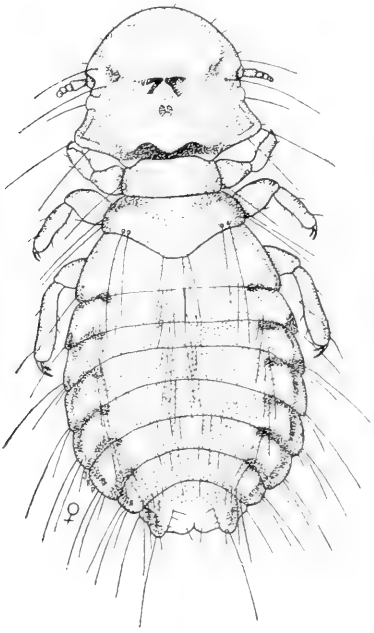


FIG. 1.—*Goniodes corpulentus* n. sp., female, from *Canachites canadensis*.

FIG. 2.—*Goniodes corpulentus*, n. sp., antenna of male above, of female below.

Description of the male. Body, length 2 mm.; width .97 mm.; golden brown, with darker markings; short robust body. Head, length .64 mm.; width .64 mm.; front flatly convex, with a rather broad colorless border, and with eight very fine hairs on margin and a longer hair in front of each antenna; temporal region distinctly angulate, slightly expanded, the angle with one very long hair and a shorter one; occipital margin shallowly concave; occipital band strongly sinuous; antennal bands straight, diverging to angle of front; antennal

fossae large; antenna with first segment more than half as broad as long, appendage of third segment longer than last segment; eye large, convex; color pale golden brown, antennal and occipital bands, mandibles and a blotch on signature, darker.

Prothorax at base one-half as broad as head, sides nearly straight, diverging from front to rear, a strong bristle at posterior angles, posterior margin rounded; color light, golden brown, darker at sides, coxae showing through as darker blotches. Metathorax short, dorsum not longer than prothorax, sides strongly rounded, margin with two long, pustulated hairs at one-third distance from apex, posterior margin obtusely angled; color same as prothorax. Legs concolorous with body, femora thick.

Abdomen about equal in length to rest of body, broadly truncate, at apex, segments 3, 4 and 5 broadest; lateral margin of first segment nearly twice as long as that of second segment; marginal angle of the first two segments with a single long hair, of segments 3, 4 and 5 with two, of segments 6 and 7 with three; dorsum with scattered fine, long hairs; color pale golden brown, a longitudinal dorsal darker blotch, and each segment with a well-marked light marginal blotch which curves strongly inward in the anterior part of segment.

Female. Body—length 2.40 mm.; width 1.1 mm.; head, length .72 mm.; width .86 mm.; abdomen longer in proportion to rest of body than in male; the markings are similar to those of the male, but more pronounced.

Lipeurus protervus Kellogg.

A female of this curious species, taken on *Lagopus lagopus*, Norton Sound.

Lipeurus parviceps Piaget.

Two specimens referable to this species from the eider duck, *Arctonetta fischeri*, Duck Egg Island. *Lipeurus parviceps* has been recorded hitherto only from *Sterna*. Our specimens differ from Piaget's figure, in having larger pustules in the dorsal blotches, and only one dark spot on the metathoracic margin. Probably our specimens should be considered to be a variety.

Colpocephalum morsitans sp. nov. (Fig. 3).

One male from *Tringa maculata*, Norton Sound. This species is close to *bicolor* of Piaget from *Strepsilas interpres*. It can be distinguished from that species by the abdominal

markings, the presence of four rows of minutely pustulated hairs on each abdominal segment; and by the markings of the head. The dark abdomen, with still darker transverse blotches, is characteristic of *morsitans*. The prothorax of the specimen is damaged and can not be fully described.

Description of male. Length of body 1.60 mm.; width .57 mm.; dark brown in color with well defined darker markings.

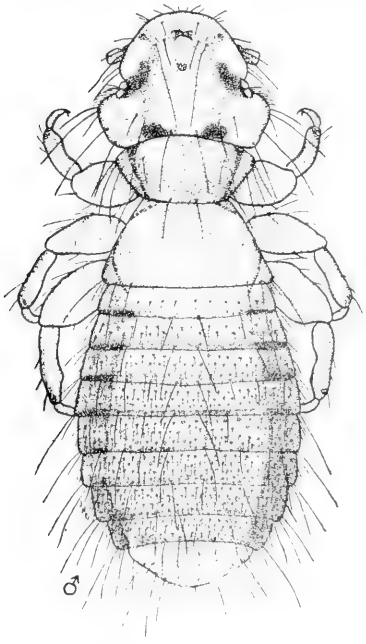
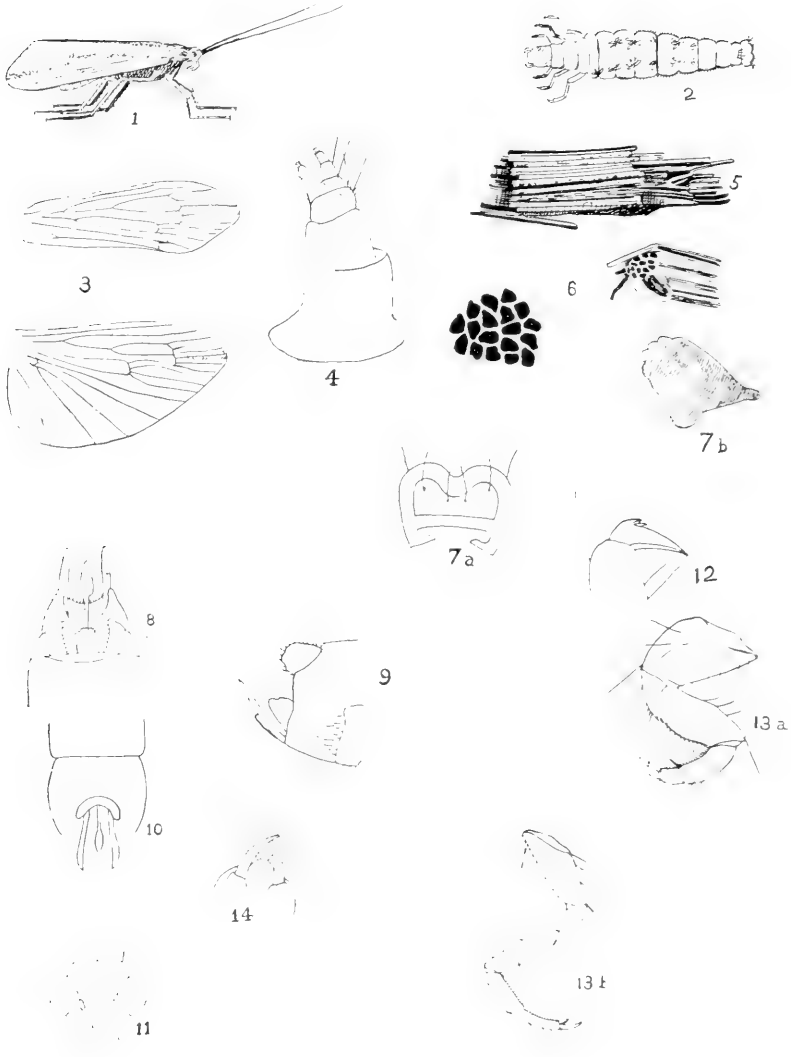


FIG. 3.—*Colpocephalum morsitans* n. sp., male, from *Tringa maculata*, Norton Sound, Alaska.

Head, length .37 mm.; width .44 mm.; noticeably broader than long; front broadly and flatly rounded, with short hairs on each side and two longer hairs in front of ocular emargination; temples produced squarely with three long hairs and several shorter ones on outer margin; occipital margin strongly concave with two pustulated hairs near the middle and one on each side of these a little inward from the margin; ocular emargination broad, not deep, with distinct fringe; eye deeply emarginate; head brown a little lighter than abdomen; ocular flecks, mandibles and bases of occipital bands piceous.

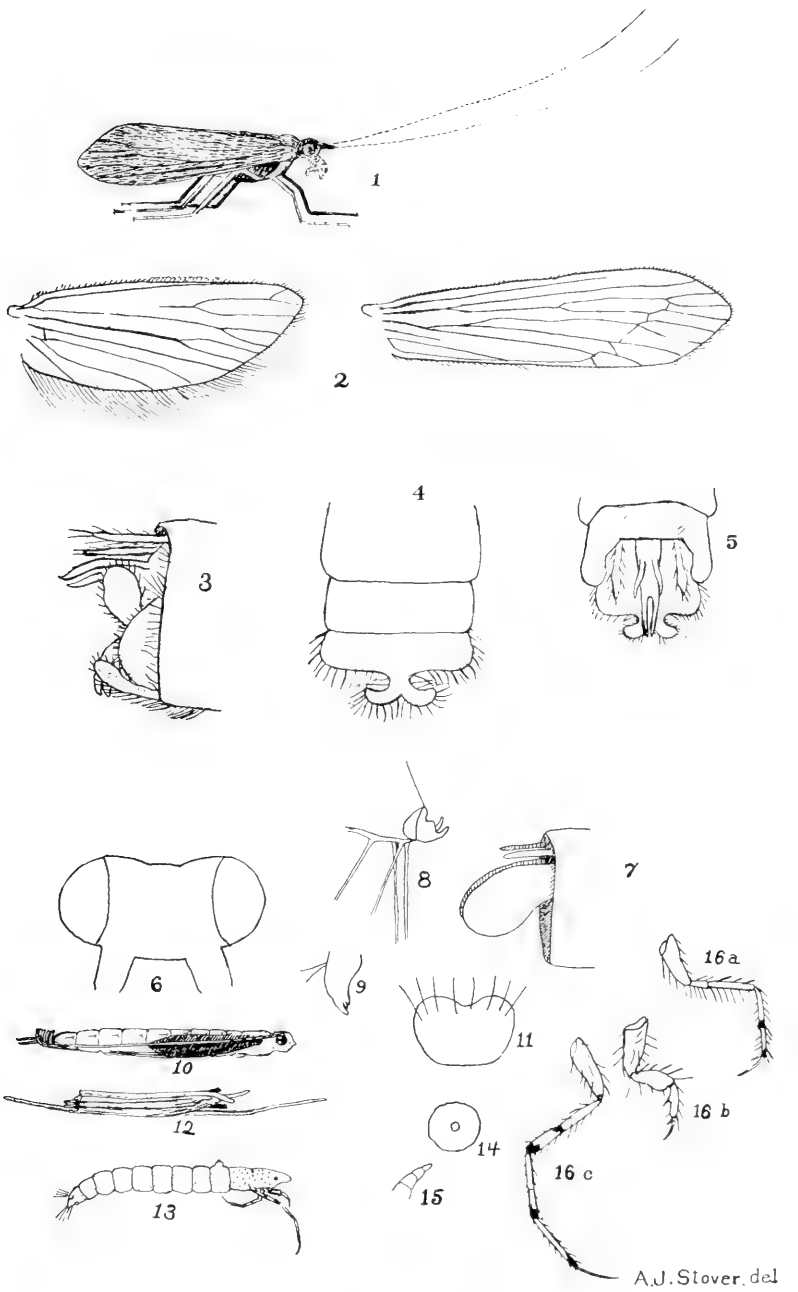
Prothorax small, sides rounded; brown with coxae showing through faintly as blotches. Metathorax about one and one-half times as long as prothorax, sides almost straight, diverging strongly posteriorly; truncate at apex, one strong hair at posterior angle and a few hairs on posterior margin; uniformly brown in color; darker than head; coxae showing through faintly as blotches. Legs concolorous with head, tibiae with small darker spot at apex, femora thick.

Abdomen ovate, first and penultimate segments approximately equal in width; broadest at segments 3, 4 and 5; each segment with a series of one strong and several finer hairs at the margin, and four alternating rows of finely pustulated hairs on dorsal surface; color brown with broad darker margin, and each segment with complete darker



A. J. Stover, Jr.

GRAMMATAULIUS BETTENII—HILL-GRIFFIN.



MYSTACIDES ALAFIMBRIATA—HILL-GRIFFIN.

transverse blotch. Last segment lighter, without markings, posterior margin with three short hairs on each side of the middle; scattered hairs of variable size on dorsum.

Menopon corporosum Kellogg and Kuwana.

One specimen from *Arenaria interpres,* Norton Island, and two from *Phalaropus lobatus;* same locality. The last two are undoubtedly stragglers.

New Oregon Trichoptera.

By Annie Laura Hill-Griffin, Payette, Idaho.

(Plates III and IV.)

In preparing a thesis on the biology of certain Trichoptera, completed June, 1911, I sent a number of specimens to Dr. C. Betten, of Lake Forest, Illinois, to be identified.

Six of the species submitted to Dr. Betten turned out to be new or probably new. One represented a new genus. It has been a great disappointment, that of four of these new species, there was not enough material to describe, in some cases only one imperfect specimen being in the collection. This was the case with the Psychomyid which represents the new genus. This was collected by myself, in October, 1908, at Crystal Lake, with five others of different species.

The list of new Trichoptera is as follows:

Limnophilidae. *Grammataulius bettenii,* n. sp.

Sericostomatidae. *Atomyia,* n. sp.

Leptoceridae. *Mystacides alafimbriata,* n. sp.

Psychomyidae. n. g. n. sp.

Rhyacophilidae. *Glossosoma,* n. sp. *Glossosoma,* probably new.

The collection contained enough specimens of two of these species so that descriptions could be made. The first one, a *Grammataulius,* I have given the name of *bettenii* in recognition of the kind assistance given me in the determination of specimens by Dr. Cornelius Betten. The second, a Leptocerid, has been given the descriptive name *alafimbriata* because of the long, soft black fringe upon the outer and inner margins of the hind wings.

Grammataulius bettenii, n. sp. (Pl. III).

Ocraceous, with brighter colored hairs, and dark markings. Head, yellowish, hairy. Antennae, testaceous, with short, black appressed hairs; underside of basal joint clothed with longer black hairs, and a thin tuft of black hair under each antenna; basal joint about twice as long as wide. Palpi yellow. Thorax with hairy yellow band divided by a naked medial line, and having a triangular, black pilose patch on either side. Legs yellowish, with black spines. Abdomen yellowish, sparsely provided with short, pale hairs; sometimes of a grayish hue.

A dorsal view, with folded wings showing an extremely long and narrow isosceles triangle with its point half-way back along the wings. It is formed by the dark edge of one wing which folds slightly over the other, for a part of the distance.

Anterior wing narrow, obliquely truncate, inner margin concave. Yellowish hyaline, marked with brown and scantily clothed with pale yellow hairs, Vandyke brown streak through center of wing, extending through thyridial area and the fourth apical cell. Other dark streaks consisting of irregular patches of color, occupy discoidal and thyridial cells, and many scattered irregular spots are distributed promiscuously throughout interneural areas. Venation pale. Solid streak of Vandyke brown extending from near arculus to the anal angle, with brown irrorations beneath. Costal area immaculate except for a faint irregular cloudiness near the base. Thyridium and arculus hyaline. Pterostigma absent. Discoidal cell slightly longer than its pedicel and very narrow.

Posterior wings slightly shorter than the anterior, but at least twice as wide toward the base, hyaline, the apical portion scantily clothed with short pale hairs. Venation light yellow. No markings except the very characteristic brown streak between and partly within the third and fourth apical cells. It covers the vein until near the end, when it curves upward, and the vein downward. Scanty long hairs near attachment of wing, extending along the two lowest veins and the margin.

Length of body, from 13 to 17 mm. Alar expanse, 41 mm.

Case: Composed of bits of straw arranged longitudinally in such a manner as to form a cylinder. The straws usually, though not always, form a spiral having 1½ to 5 or 6 turns. Occasionally, the straws are cut as long as the entire case, which then has no spiral effect.. In this instance, no indication is given of the earlier stage of the case, and I suspect this occurs only when the larva has been deprived when nearly grown, of its case, and has then made it to suit its own size and has not had to enlarge it subsequently. Sometimes the narrow blades of a sort of watergrass are fastened together to make what appears to be

a short piece of a very wide blade of grass, and then this piece is fastened into the case just as are the others which are not "pieced together."

Habits and Occurrence: Found in small ponds along the C. & E. R. R., Corvallis, Oregon, and in ponds formed by the widening of slow-flowing streams. Also in various slow streams flowing through meadows. The earliest species to emerge in the laboratory, and probably one of the first to do so outside, since the larvae are far in advance of the most of the others, being nearly ready to pupate in the latter part of January and first weeks of February, varying slightly from year to year. Pupation occurs in February and the first of March, and I have records of emergence of adults March 12, 14, 15, 20, 21 and 30, and April 10. All the adults in the collection, however, bear dates of September, October and November, which suggests two broods, or a very long adult life.

The larvae seem to be restricted as to locality, but quite abundant when found at all. The adults are moderately plentiful, for caddisflies. This is one of the four largest species in the collection of the Oregon Agricultural College at Corvallis. Larvae are difficult to rear inside. They feed on water plants, dead and decaying leaves, manure and filth which may happen to be in the meadow streams where they live.

Eggs and oviposition unknown to me.

Mystacides alafimbriata, n. sp. (Pl. IV).

Small, black, delicate and graceful, clothed with short black hair. Head black, shining, with a few hairs between and below the antennae, which are long and filiform; basal fourth annulated with buff; basal segment very large in proportion to the antennae, surrounded with black hair. Palpi very bristly with black hair. Thorax black and shining. Legs grayish-yellow with few small black spines. Abdomen dark gray.

Anterior wing long, rather narrow, rounded at apex, dusky, clothed with short black hairs. The costal area is darker than the remainder. Venation brown. Thyridium and arculus hyaline. Pterostigma present. Discoidal cell about the same length as its pedicel. The first apical cell is not very long; not so long as the second, in fact. All interneural areas extremely long and narrow.

Posterior wing slightly lighter in color than the anterior; approximate shape, half an ellipse cut longitudinally. Venation, yellow-brown, the median vein being very strong and thick. Costa extremely strong, with hamuli extending from the center of the costa about halfway to the apex. Cross-veins entirely absent except for a small one near the base. Both outer and inner margins fringed with long soft, black hair which increases in length to the base of the wing, where it is fully as wide as the attachment itself.

Length of body, 6 mm. Alar expanse, 17 mm.

Collected at Permelia Lake, Mt. Jefferson, Oregon, July 16, 1908, by Prof. J. C. Bridwell.

In the latter part of June, just after the preceding was written, a few specimens of this same species were captured by Mr. A. J. Stover, at Colorado Lake, an arm of the Willamette, near Corvallis. After making sure of its identity with *M. alafimbriata,* an attempt was made to find larvae and pupae. A number of small, slender pupal cases were suspected and rearing proved them to be undoubtedly the new species. Larvae were also found.

The adults at Colorado Lake appear about 5 or 6 o'clock in the evening, in swarms, and dance and hover above the water with dizzying pertinacity. Except accidentally, they do not seem to alight, nor to touch one another. They hover directly above where the larvae and pupae are found, but could not be detected in the act of oviposition.

Pupa: The pupal cases are found attached to floating logs or snags in Colorado Lake. They resemble the larval cases. The well-developed pupa has extremely long antennae like the adult. These curve back above the eye, slant across the black wing and down to the posterior end of the abdomen, where their surplus length is coiled into a curl, through which the tips finally project backwards. Length of pupa 8 mm.

Larva: The larva is a very small, slender, but extremely active creature with comically long hind legs. These it places in advance of the middle pair, in walking, making it appear as though the middle legs were longer than the hind legs. Upon close inspection, however, the latter are seen crossing

the middle legs. When removed from the case, they move about with quick, jerky movements, actually jumping, like a flea, at times. They feed on grass and various water plants. Length of a larva, probably nearly full-grown, 6 mm.

Case: A small, slender cylinder of long bits of reed, straw, sticks, etc., placed lengthwise. Usually one straw about twice the length of the case is attached to it dorsally, or two very long ones, laterally. Occasionally, a part of the case is constructed of grains of sand and tiny bits of miscellaneous material.

Eggs: not observed.

EXPLANATION OF PLATES.

PLATE III.

Grammataulius bettenii, n. sp.

Fig. 1, Adult; 2, Larva; 3, Wings; 4, Maxilla of larva; 5, Larval case; 6, End of Pupal case and detail of net in end; 7a, Labrum and 7b, Mandible of Larva; 8, 9 and 10, Dorsal, lateral and ventral views respectively of the male genitalia; 11, Head of imago, dorsal view; 12, Dragging hook of larva; 13a, 13b, First and third legs of larva; 14, Mandibles of pupa.

PLATE IV.

Mystacides alafimbriata, n. sp.

Fig. 1, Adult; 2, Wings of male; 3, 4 and 5, Lateral, ventral and dorsal views respectively of the male genitalia; 6, Head of adult, dorsal view; 7, Lateral view of the female genitalia; 8, Dragging hook of larva; 9, Mandible of larva; 10, Pupa; 11, Labrum of larva; 12, Ventral view of larval case; 13, Larva; 14, End of pupal case; 15, Maxilla of larva; 16a, 16b and 16c, Middle, front and hind legs respectively of larva.

Notes on Australian Pentatomidae (Rhynch.).

By E. BERGROTH, Turtola, Finland.

Stelgidophora pallida V. Duz.

This insect was described as doubtfully belonging to *Dictyotus* Dall. and was later placed by Van Duzee in the genus *Eurynannus* Bergr. It is allied to *Eurynannus*, but so distinct that a *new genus* **Stelgidophora** must be founded upon it. As described by me in Proc. Zool. Soc. Lond., 1905, II, pp. 153-154, the head of *Eurynannus* is unique in the Pentatomidae in

having the sides of the whole basal half of the anteocular part very broadly convex, continuously merged in the antenniferous tubercles which are convergent; the eyes are shortly stylated and so small that the vertex is about seven times broader than an eye; the ocelli are situated twice as far from each other as from the eyes; the bucculæ are low and straight; the sides of the pronotum are convexly rounded, sinuated only immediately behind the apical angles; the scutellum is about as long as broad; the veins of the membrane are simple and few in number. In *Stelgidophora* the convex anteocular part of the lateral margin of the head is not longer than the eye itself; the antenniferous tubercles are well separated from the lateral margin of the head and not convergent; the eyes are larger and not stylated; the ocelli are four times farther from each other than from the eyes; the bucculæ are lobed both anteriorly and posteriorly, the anterior lobe being rounded and deflected, the posterior lobe subacute and directed backward; the sides of the pronotum are deeply sinuated; the scutellum is much longer than broad; the membranal veins are densely reticulated. I have seen the type of *pallida* in the American Museum of Natural History, New York.

Commius minor Bergr.

The type specimen is somewhat immature. In specimens with the colors fully developed the two large basal spots to the pronotum and the ground color of the corium are dark brassy bluish green, not fuscous as in the type. This insect seems to be much more common than the typical species, *C. elegans* Don. It occurs in the whole eastern part of Australia and I have seen it in several collections.

Notius melancholicus n. sp.

Oblong, black, four small upper basal spots to head, narrow lateral margins of head, of pronotum and of basal half of corium, bucculæ, rostrum (except apical joint), basal ring of the two last antennal joints, narrow margin of acetabula, coxæ, trochanters, base of femora, a median ring to tibiæ, basal joint of tarsi, and a spot on the external apical genital lobe of female yellow. The last three antennal joints subequal in length, second joint distinctly shorter than third. Hemelytra dis-

tinctly passing apex of abdomen, corium reaching base of last connexival segment. Abdomen but little broader than the closed hemelytra, which cover the greatest part of the connexivum. Puncturation as in *N. depressus*. Length, ♀ 13 mm.

Tasmania.

Closely allied to *N. depressus* Dall., but the connexivum and lateral border of the venter are entirely unspotted, the third antennal joint and hemelytra are longer, and the abdomen is more narrowed posteriorly. In *depressus* the third antennal joint is distinctly shorter than the second, the hemelytra do not pass the apex of the abdomen, the corium barely passes the middle of the penultimate connexival segment, and the abdomen is broader behind the middle, leaving the greatest part of the connexivum exposed.

Alcaeus hermannsburgi Dist.

On this species Distant founded the genus *Muritha,* which is a synonym of *Alcaeus* Dall. Distant says that it differs from *Alcaeus* in having the second antennal joint "not about half the length of the first, but nearly twice as long." This is correct, but the length of the second joint in *A. hermannsburgi* is due to the fact that the second and third joints are fused into one long joint, being separated only by a constriction, not by a real articulation. In consequence of this the third joint, as described by Distant, corresponds to the fourth joint in the other species. The second joint is, as Distant correctly says, "flattened and roundly ampliate at base;" this flattened basal part of the joint corresponds to the whole second joint in the other described species, this joint being compressed in all species, as correctly stated by Dallas. The fourth (apical) joint (corresponding to the fifth in the typical species), which was lacking in Distant's type, is only half the length of the preceding joint, black with the base narrowly yellow. There are several species of this Australian genus, only four of which have been described; they are extremely similar in color, much confused in the collections and sorely in need of a revision, impossible to undertake without examination of the types of the described species. They are separable principally by the structure of the

antenna and orificia and, above all, the male genital segment. The transitions between species with five-jointed and four-jointed antennæ are quite gradual. In some species the suture between the second and third joints is fairly distinct, in others it is hardly perceptible, sometimes disappearing only on the inner side of the joint or vanishing altogether as in *A. hermannsburgi.* In no species I have seen a quite normal articulation with free mobility between these segments. We find a quite analogous structure of the antennæ in the allied genera *Eumecopus* Dall. and *Poecilometis* Dall. In both these genera there are species with five-jointed and with four-jointed antennæ, owing to the second and third joints being either more or less distinctly separated or fused together. Kirkaldy (Cat. Hem. I, p. 189) founded the "subgenus, if not genus" *Euronotias* on the species of *Poecilometis* with five-jointed antennæ. Why he did not make the same subdivision in the genus *Eumecopus* is hard to understand. *Euronotias* is quite unnatural and untenable even as a subgenus, as both in *Poecilometis* and *Eumecopus* some species with four-jointed antennæ are much more closely allied to certain species with five-jointed antennæ than to each other.

Theseus parvulus Westw.

In his revision of the Pentatomidae described by Westwood in the "Hope Catalogue," Distant places *Halys parvula* Westw. in the genus *Spudaeus* Dall., but from the figure he gives of the type it is clear that it belongs to *Theseus* Stal.

Kirkaldy proposed the new name *Austromalaya* for *Spudaeus,* which is said to be preoccupied by Gistl. From what I have gathered about that monstrous literary product "Naturgeschichte des Thierreichs für höhere Schulen bearbeitet von J. Gistl" few of his very numerous new names are properly founded. They seem to be *nomina nuda* massed together in the 16 pages forming the introduction to the book and mostly proposed quite arbitrarily without real grounds for old, well-known genera. I believe that most of these names have been undeservedly included in Waterhouse's "Index zoologicus."

Until we learn whether the name *Spudaeus* Gistl has a show of legitimacy, if ever so little, I think there is no reason to abandon the name *Spudaeus* Dall. (Of the names proposed by Gistl in Hemiptera one at most can be used: *Eupheno* for the preoccupied name *Macrops* Burm. in the Reduviidæ).

Paramenestheus nercivus Dall.

Sciocoris nercivus Dall., placed in our catalogues in the genus *Menestheus* Stäl, ought to be transferred to *Paramenestheus* Bredd. It is true that Stäl cited *nercivus* as the type of *Menestheus,* but from the information which Distant in Ann. and Mag. of Nat. Hist. (8) VI. p. 469, gives of Dallas's type it is clear that Stäl had wrongly identified *nercivus,* with which his description of the head and antennæ does not at all agree. *Menestheus* was probably founded on a still undescribed species allied to *M. cuneatus* Dist. Judging from the description it is probable that *M. doddi* Dist. belongs to neither of these genera.

Turrubulana plana Dist.

Distant has totally misunderstood the systematic position of this insect, placing it in the Halyinae near the African genus *Atelocera* Lap. It pertains to the true Pentatominae and is closely allied to the Australian genus *Lubentius* Stäl, from which it differs principally by the longer and narrower, laterally bisinuated and apically not rounded head, by the second antennal joint not reaching the apex of the head, the longer second rostral joint (reaching the middle coxæ), the slightly elevated, more deeply sinuate apical pronotal margin, the longer frena, and by having the tips of the membranal veins united by a more or less continuous transverse vein parallel to the margin of the membrane. The membrane is described as "black" with "the apex paler," but it is subhyaline with brown veins. It *appears* to be black on account of the underlying black dorsal surface. The ground color of the upper side is normally reddish ochraceous. I have another allied new genus which will be described in a forthcoming paper on Hemiptera from Central Australia.

Antestia cederwaldi n. sp.

Above green with the corium glaucous, beneath pale flavous tinged with orange and with a broad sublateral green vitta extending from the anterior margin of the propleura to the apex of the abdomen. Head above with the basal margin, an intraocular oblong spot confluent with the base, two median vittæ and a broad jugal vitta black. The whole margin of the pronotum, base of exocorium, epipleura, and an elongate smooth callous vitta in the exterior submedian part of the mesocorium orange; a line running from the apical margin of the pronotum to near the apex of the scutellum, the suture of the endocorium, and a line at the outer margin of the mesocorial callous vitta whitish. Tergum of abdomen black, connexivum orange, each segment with a basal subtriangular blackish spot which does not touch the outer margin, last ventral segment with a median piceous spot of variable size.

Head as long as the pronotum in the middle and distinctly broader than long, finely and rather sparingly punctured above, smooth beneath; juga transversely wrinkled, anterior ocular orbita smooth and elevated, prolonged obliquely inward and backward in the shape of a short ridge; rostrum green, apical joint piceous; antennæ green, second joint a little longer than third, fourth joint light brown, almost twice longer than third (fifth joint wanting).

Pronotum almost three times broader than its length in the middle, rather thickly punctured with pale fuscous, the whole apical margin and the straight antero-lateral margins smooth, callously elevated, lateral angles rounded, not prominent. Scutellum punctured as the pronotum. Pleuræ irregularly punctured with very pale fuscous, anterior margin of propleuræ elevated, evaporative area of metapleura extended over the posterior half of mesopleura. Corium more strongly and darkly punctured than pronotum and scutellum, the callous vitta of the mesocorium posteriorly obliquely continued to the interior apical angle (membrane mutilated). Wings slightly infuscated, iridescent.

Abdomen beneath remotely and very finely punctulate, more distinctly punctured towards the sides, last ventral segment (♀) in the middle a little longer than the preceding segment.

Legs green. Length, ♀ 7.8—8 mm.

New South Wales (Richmond River, C. Cederwald).

Very distinct from the two described Australian species of the genus. Dedicated to the memory of my dear friend, Carl Cederwald, from Stockholm, who many years ago collected insects for me in New South Wales, and who fell as a volunteer in the Boer War.

Pseudapines geminata V. Duz.

This insect seems to be widely distributed. The types came from New South Wales and I have received it both from South Australia and West Australia. It was described as an *Apines*, but I cannot share Van Duzee's opinion that "this species agrees in all generic characters with *Apines concinna* Dallas." It differs in so many points from the Indian *concinna* as described and figured by Dallas and Distant, that a new genus, *Pseudapines*, must be founded upon it. The differential characters appear from the comparative diagnoses given below. The pale submarginal scutellar vittæ are often broadly interrupted by black in the middle.

Apines Dall.

Head about as broad as long, narrowing from the anteocular sinus to the rounded apex.

Antennæ more than half the length of the body.

First joint of rostrum reaching base of head, third joint shorter than the fourth, which is almost as long as the second.

Pronotum in the middle much longer than the head, not strongly transverse, moderately narrowed toward the apex.

Mesosternum sulcated in the middle.

Orificia prolonged in a rather long, gradually tapering sulcus directed obliquely forward.

Hemelytra barely reaching the apex of the abdomen, corium not reaching penultimate connexival segment.

Legs long, femora reaching much over the lateral margins of the body, basal and apical joint of tarsi subequal in length.

Pseudapines nov. gen.

Head broader than long, subparallel from the anteocular sinus to the broadly subrotundately truncate apex.

Antennæ less than half the length of the body.

First joint of rostrum not reaching base of head, third joint longer than the fourth, which is scarcely longer than half the second joint.

Pronotum in the middle as long as the head, strongly transverse and strongly narrowed toward the apex.

Mesosternum carinated in the middle.

Orificia prolonged in a short, suddenly discontinued sulcus directed straight outward.

Hemelytra considerably passing apex of abdomen, corium reaching the middle of last connexival segment.

Legs very short, femora not reaching the lateral margins of the body, basal joint of tarsi shorter than apical joint.

In the figure given by Van Duzee the femora are represented as reaching over the sides of the body, but this is wrong. The Philippine *A. grisea* Banks is apparently a true *Apines*.

Diaphyta rosea n. sp.

Obovate, pink-colored, basal border of pronotum and apex of scutellum broadly tinged with whitish; second and third ventral segments whitish from near the middle to near the spiracles, rostrum and antennæ testaceous, fourth and fifth antennal joints (except at base), posterior lateral margins of tylus, a point at the base of the fore and middle acetabula, and the apical angles of the abdominal segments black; spiracles placed in a small whitish callus.

Head a little broader than long and a little shorter than the pronotum, slightly sinuate in front of the eyes, beneath very finely and sparingly punctured, above transversely rugulose; apical half of juga very thickly and finely punctulate, ocellar areas smooth with a single slightly curved row of fine punctures on each side a little inside the ocelli; rostrum slightly passing the middle of the third ventral segment; antennæ rather stout, third joint distinctly shorter than the second and as long as the fifth, fourth joint as long as the second.

Pronotum strongly but rather sparingly and irregularly punctured with fuscous, with smaller points intermixed, all points becoming black on the basal area, the transverse discal impression interrupted in the middle, anterior lateral margins straight, narrowly elevated, lateral angles obtuse, not prominent, posterior lateral margins and basal margin broadly and slightly sinuate. Scutellum strongly but remotely punctured with fuscous, more thickly so on the sides behind the middle, the punctures blackened on the apical area. Acetabula and posterior border of propleuræ and metapleuræ punctured with fuscous, sternal lamina in front of the fore coxæ roundedly narrowing, bent upward, being contiguous to the sternum, not freely prominent. Hemelytra somewhat passing apex of abdomen, corium reaching base of last connexival segment, rather strongly and thickly concolorously punctured, the punctures becoming fuscous toward the inner part, membrane glossy, infuscated.

Abdomen beneath strongly concolorously punctured, smooth along the centre, apical angles of the segments acutely prominent, last male ventral segment in the middle longer than the two preceding segments combined, male genital segment broadly sinuate at apex.

Legs pink, femora with very small sanguineous points, upper side of tibiæ strongly punctured with black. Length, ♂ 8.5 mm.

West Australia.

Less elongate than *D. pulchra* Westw. (of which *fulvescens* Dall. is possibly only a variety), quite differently colored and

with several structural differences. It more resembles a *Cuspicona,* but the generic characters are those of *Diaphyta.*

Myappena capito Dist.

Distant says that "this genus appertains to the group of genera distinguished as Platycoraria Bergr.," but in the description he writes: "Abdominal segments *1–5* with a transverse strigose vitta *behind the spiracles*" (the italics are mine). I have not seen this insect, but it can certainly not belong to the Platycoraria, as in this group the strigose ventral vitta is situated far *inward* from the spiracles, forming an uninterrupted curve from the first to the third segment. The "strigose vittæ" in *Myappena* Dist. are certainly not homologous with the stridulatory vittæ in the Platycoraria. As the rostrum is described as only passing the anterior coxæ *Myappena* cannot even belong to the Halyinae. Its position will remain enigmatical until it has been re-examined and redescribed by a hemipterist having access to the type.

New Species of Lyttidae, with notes on Described Species (Coleop.).

By Creighton Wellman, M.D., F.E.S.

(Studies from the Laboratory of Tropical Medicine and Hygiene, under the direction of Creighton Wellman, Tulane University of Louisiana, No. *2*).

The writer has for several years been interested in the Lyttidae (Meloidae auctt.) on account of their parasitic habits and the bearing of the facts regarding their habits on the general question of parasitism, and also because of the employment by African and Oriental natives of substances prepared from these insects as medicines, aphrodisiacs, poisons for suicide and murder, etc.

In the course of an examination of large amounts of material from the British, Berlin and Indian Museums, the Pusa collection of Bengal, several private collections and my own cabinet, I have accumulated a number of notes which do not

bear on my work which is to appear in the Fauna of British India or on any other special investigation now in hand. These are brought together in the present paper with the object of adding to the still somewhat scanty knowledge we possess of this important and interesting group of insects.

Genus ZONABRIS Har.

The following notices of species are from examination of types or authentic specimens:

Zonabris hauseri and *Z. lucens* are distinct species; *lucens* can be told from *hauseri* by its longer fourth article of the antenna and its dark elytral apex.

Z. crux var. *opulentus*. This form should be considered as a variety of *lucens* and not of *crux*.

Z. elegantissimus var. *confluens*. This is merely a slight color variation.

Z fasciculata Esch. This is a good species, near *maculata*, '01.

Z. subsplendidula Rtt. and *Z. staudingeri* Hdn. are both varieties of *Z. splendidula* Pall.

Z. frolovi, *Z. intermedia* and *Z. königi* are color variations of the same species.

Z. humerosa, *Z. chodshentica*, *Z. scabiosae* and *Z. euphratica* are all varieties of the same species based on differences of the elytral pattern.

Z. bertrandi Cast. = *Z. ustulata* Reiche.

Z. dicincta Bert. = *Z. bizonata* Gerst.

Z. (*Caryna*) *posthuma* Mars. is a variety of *M.* (*C.*) *mixta* Mars.

Genus ELETICA F.

Eletica maerens Pér. = *E. rufa* F. var.

E. rufa F. var. **grandiceps** n. var.

Brown, smaller than typical forms, structural characters as in *rufa* except that the head is proportionately very much larger than in normal specimens.

"Africa."

There is a specimen in the British Museum.

Eletica bicolor Champ. var. **fuamboensis** n. var.

Differs from *bicolor* in having the head proportionately smaller, the eyes rufous and more convex and the head less canaliculated at vertex. The coloring is as in *bicolor* except that the thorax is black.

"Fuambo, Brit. Cent. Africa, '95-1."

British Museum.

This insect may represent a new species, but the extraordinary variability in the genus makes it impossible to announce it as such until more material appears.

E. pallidipennis Fairm. = *E. rufa* F.

Genus EPICAUTA Redt.

Epicauta formosensis sp. n.

Black, with red head, *clypeus* infuscate; back and sides of pronotum, suture, margin and apices of elytra, edges of ventral segments, episterna and mesosterna all edged with white pubescence; *form* large, robust, elongate, somewhat cylindrical; *head* large, subquadrate, strongly rounded, a median impressed line on the occiput, pustules back of bases of antennae small, punctuation sparse, but uniform and coarse, punctures on frons a little finer than rest of head, pubescence heavier and larger at back and sides; *labrum* poorly obcordate, transverse, sides more strongly punctured than disc, pubescence heavier at anterior angles, labro-clypeal suture distinct; *clypeus* rounded behind, almost straight in front, transverse, very much more coarsely punctured than head, pubescence stronger at sides; *maxillary palpi* long, somewhat slender, art. 2 and 4 about equal in length, art. 3 a little shorter than others and a little broader than 2, art. 4 broader than 3, bluntly rounded and flattened; pubescence sparse; *antennae* long and robust, art. 1 the stoutest, 2 about 2-3 as long as 1, 3 about 1½ as long as 1, 4 a little longer than 2 and gradually increasing and tapering to 10, 11 a trifle longer than 10 and bluntly sharpened; *eyes* small, narrow, reniform.

Pronotum short, subquadrate, a little narrow behind, strongly constricted in front, margin distinctly everted, a slight median depression posteriorly, another at middle of disc; punctuation not quite as strong as head but very thick and close, pubescence very short and rather heavier at sides; *scutellum* rather rounded triangle, medium, somewhat smooth; *elytra* parallel separately, rounded at apices, ora distinct, nervure indistinct, evenly and finely punctured, granulose, pubescence short, close lying; *ventral surface* a little more heavily punctured than elytra; *legs* large, long, robust, femora and tibiae a little more finely and thickly punctured than abdomen, pubescence pale;

posterior tibial spurs somewhat spoonshaped, the inner the longer and the outer the heavier; *tarsi,* long and stout; *claws,* long and robust.

Type in British Museum. Type locality, Formosa.

Distribution. Formosa, Japan (Rev. H. Loomis); C. Formosa, '94; Formosa (Bowring), '63; British Museum (3); Wellman Coll. (1).

Waterhouse (Trans. Ent. Soc. 1891, III, p. 407) referred this species to *assamensis* with a query. It is perfectly distinct, however, and may be told by the larger size, white marginal pubescence, the entire lack of long black hair on the sternum, and the heavier and sparser punctuation of the head. The specimen in my collection, labeled *chinensis* Cast., is not quite typical, being smaller, with a larger smooth area on the frons.

Epicauta insularis Haag-Rut. var. **montalbana** n. var.

Differs from typical specimens by having the pronotum uniformly dark red instead of black. Although the essential characters are identical with *insularis* the color difference is so striking that any one would at first glance pronounce it a new species.

This pretty variety was sent me by Mr. Charles S. Banks, Entomologist of the Bureau of Science, Manila, who writes concerning it as follows: "Those numbered 11,059 were found by Mr. W. Schultze, my assistant, very abundant at Montalban, about 30 kilometers from Manila. They were taken on the 6th of June, 1909, and were present in thousands. Mr. Schultze says that wherever they touched his hand they caused tiny blisters."

I have in my collection typical specimens of *insularis,* also taken by Mr. Banks, and there is another series in the United States National Museum, from Benguet, '03, and Manila, '09, sent by the same collector, who also reports in a letter to the writer the following other Philippine captures: Gen. *Cissistes cephalotes* '01. Manila, Sept., '03 (*R. E. Brown,* S. J.), *Horia testacea* F., Negros Is., P. I., '02 (Banks).

Genus LYTTA F.

Lytta signifrons Fabr. = *L. coelestina* Haag.
L. hildebrandti Haag. = *L. vittipennis* Klbe.
L. flagellaria Er. is a *Macrobasis.*

Lytta bieti n. sp.

Color metallic, bluish purple, a yellow spot on the vertex, elytra with a yellow vitta extending obliquely from the basal margin over the humeral callus to the apex and ending nearer the suture than the margin; *form* medium, robust, depressed, slightly wider posteriorly; *head* large, triangular, slightly rounded angles, a slight vertical median impressed line, an impression at base of antenna on each side, another impression at the anterior end of the light spot on vertex, coarsely and very sparsely punctured, becoming a little denser at frons; pubescence short, sparse and mixed dark and lighter at back and under head; *labrum* strongly obcordate, a median smooth space, finely and sparsely punctured, pubescence pale, sparse, labro-clypeal suture distinct; *clypeus* very short, transverse, narrowed in front, posterior border convex, a foveate impression on either side, finely and thickly punctured, pubescence sparse; *maxillary palpi* long and medium, art. 2 medium, slightly obconical, art. 3 short, obconical, last article the longest of all, slightly ovoid; *antennae* art. 1 short, strongly swollen, art. 2 small, beadlike.

Pronotum short, transverse, narrowed behind, strongly gibbous at sides, suddenly constricted into neck, a median longitudinal impressed line to near posterior margin ending in a large impression, reflexed posterior margin strong at middle weakening at sides, a large, round, shallow fovea on either side of disk, disk around these foveae smooth, impunctate, and in front of these it is sparsely and coarsely punctured, a little coarser than head, pubescence short, sparse, dark; *scutellum* large, rounded, a large deep fovea taking in nearly all of it; *elytra* less than three times as large as joint width, ora and nervures distinct, evenly, mediumly, coarsely and rugosely punctured, light and dark areas punctured the same, pubescence sparse and very short, slightly dehiscent and separately rounded at apices; *ventral surface* of mesosternum finely, thickly and rugosely punctured, pubescence mediumly short, ventrals of abdomen finely, sparsely and transversely aciculately punctured, pubescence mediumly short, sparse and confined more to sternum; *legs* medium long and stout, femora and tibiæ punctured about like ventrals but not aciculate, posterior tibial spurs, outer with slight tendency to being trumpet-shaped, inner sharp and curved; *tarsi* long and slender; *claws* short and stout.

Length 13, width 3.5 mm.

Type in B. Museum. Type locality, Thibet.

Distribution. Thibet, Tatsienlou (Mgr. F. Biet.). British Museum (3 specimens).

This can readily be told at a glance from *thibetana* by its more gibbous pronotum, color, by its much coarser elytral sculpture, and by the oblique direction of the elytral vitta, in *thibe-*

tana the vitta is reflected upward at its apex, in *bieti* it is reflected downward.

Lytta arborea n. sp.

Color metallic, dark blue, a small red dot on vertex, pubescence very short, sparse and mixed light and dark; *form* small, oblong; *head* subquadrate, strongly rounded angles, sparsely but very coarsely punctured, punctuation closest at frons and vertex; *labrum* short, strongly emarginate in front, sides rounded, punctured very finely and sparsely, labro-clypeal suture not distinct; *clypeus* short, transverse oblong, strongly rounded angles, sparsely and finely punctured; *maxillary palpi* long and slender, art. 2 long, very slender, cylindrical, 3 is ½ as long as 2, and a little thicker, last not quite as long as 2 but much thicker and truncate; *antennae* medium, art. 1 short and swollen, 2 very small and beadlike, 3 a little longer than 1, cylindrical, 4-10 subequal, slightly increasing in diameter, last longer than 10, strongly pointed; *eyes* small, flat, far apart, entire.

Pronotum roughly hexagonal, a slight median impressed line, a large fovea on either side of line, on disk, feebly everted at posterior margin, more strongly at middle, punctured like head, but very much sparser and scattering; *scutellum* short and squarish, almost impunctate; *elytra* 2½ times as long as joint width, ora prominent nervures slightly visible, uniformly rugose, jointly rounded behind; *ventral surface* very faintly and sparsely punctured; *legs* medium, femora and tibiae a little more closely punctured than ventrals; *tarsi* long and slender; *claws* long and stout; ♂ antennæ long and delicate, last ventral deeply notched; ♀ antennæ very short, stouter, last ventral shallowly notched.

Length 8 mm., width 2.5 mm.

Type in my collection. Type locality, Humboldt County, California.

Distribution Weitchpec, Humboldt Co., V. 20, 11, near Hamburg, Siskyou Co., VI. 2, 11 (F. W. Nunenmacher).

This rare insect was found by beating trees (? dogwood) along the river. It is very scare, but of great interest on account of its unusual habits. None of our other indigenous blister beetles, except the genus *Pomphopoea* (and possibly *Macrobasis unicolor* Kby. which is occasionally taken on small bushes) are arboreal in habits. The present species is the first of the present genus known to live on trees. Structurally, it is not very close to any described form.

Lytta hoppingi n. sp.

Color black, prothorax bright reddish testaceous with a black longitudinal dorsal median broad stripe which is the full width of the neck in front, ending behind at the base of the pronotum in a point, very sparsely clothed throughout with short, black very sparse pubescence; *form* slender, graceful, somewhat depressed, strongly widened behind; *head* small, subglobose, slightly depressed, with a very faint median impressed line at the occiput, a faint smooth pustule on vertex, thickly and moderately coarsely punctured, the punctures being thicker around the pustule on vertex, becoming sparser toward sides and back of head; *labrum* short, broad, feebly emarginate in front, strongly rounded corners narrowed behind, thickly and finely punctured, labroclypeal suture distinct; *clypeus* short, transverse, slightly rounded in front, straight behind, punctured a little more sparsely than labrum; *maxillary palpi* short and slender, arts. 2 and 3 subequal, cylindrical, last a little longer, slightly flattened and truncate; *antennae* long and stout, art. 1 short and strongly swollen, 2 is ½ as long as first, bead-shaped, 3 a little longer than 1 and subequal from 3 to 10, last a little longer than 10 and strongly pencil-sharpened; *eyes* large, wide apart, slightly convex, entire.

Pronotum long, slender, subcylindrical, gently and slowly narrowed in front, feebly narrowed behind, posterior margin very feebly everted, a very slight median fovea near the posterior margin, punctured a little more finely than head, the dark areas punctured a little more thickly than the light; *scutellum* small, triangular, point rounded, finely and thickly punctured; *elytra* 2½ times as long as joint width, ora distinct, very finely and vermiculately rugose, jointly rounded at apices; *ventral surface* very finely and evenly punctured; *legs* medium, femora and tibiæ punctured like ventrals; *tarsi* long and mediumly strong.

♂. Articles of antennæ much longer than those of ♀, the last two ventral segments much more strongly notched than ♀, posterior tibial spurs long and slender, smooth pustule on vertex well marked.

♀. Articles of antennæ stouter, last ventral segments slightly notched, posterior tibial spurs shorter and stouter, pustule on vertex feebly marked.

Length 15 mm., width 4 mm.

Type in my collection. Type locality Fresno County, California.

Distribution. Coalinga, Fresno County, California, V. 8. (R. Hopping).

This graceful species is not very closely allied to any other now known. At a glance it somewhat resembles in form and color *Pyrotrichus vitticollis* Lec.

Lytta nunenmacheri n. sp.

Color black, a small red spot on vertex, uniformly clothed with short, very sparse, black, erect pubescence; *form* rather short and robust; *head* subquadrate, a slight median impressed line on occiput, vertex transversely somewhat impressed, sparsely and mediumly coarsely punctured, the punctures being thickest just at vertex; *labrum* obcordate; the anterior half rather thickly and coarsely punctured, the posterior half impunctate, labro-clypeal suture distinct; *clypeus* short, transverse oblong, anterior 1-3 impunctate, posterior 2-3 punctured like labrum; *maxillary palpi* short and stout, art. 2 long, 3 short, last a little longer than 2, strongly flattened, truncate; *antennae* medium in length, stout, art. 1 short, strongly swollen, 2 very small, beadlike, 3 longer than 1, 4 as long as 1, 4-10 subequal in length but gradually increasing in diameter, last longer than 10 and strongly pencil-sharpened; *eyes* small, far apart, slightly convex, very slightly notched.

Pronotum subquadrate, sharply contracted in front, rather strongly narrowed behind, posterior margin strongly everted, a deep longitudinal median impression extending almost its entire length, sparsely punctured, the punctures like those of head; *scutellum* small, rounded, finely and thickly punctured; *elytra* 2½ times as long as joint width, slightly widened posteriorly, ora distinct, 2 middle nervures visible, finely and vermiculately rugose, a little more strongly marked toward apices, separately rounded behind; *ventral surface* sparsely and finely punctured; *legs* long and stout; femora and tibiæ punctured like ventrals but a little thicker; *tarsi* long and stout; *claws* long and stout.

♂. Antennæ longer and slenderer than ♀, pronotum convex and not rugose, posterior tibial spurs long and slender, slightly trumpet-shaped.

♀. Antennæ shorter and stouter, pronotum slightly depressed and slightly rugose, posterior tibial spurs shorter and stouter and strongly trumpet-shaped.

Length 12-22 mm., width 3-3.8 mm.

Type in my collection. Type locality Humboldt County, California.

Distribution. Orleans Bar, Humboldt County, California, V. 22, 11 (F. W. Nunenmacher).

Nunenmacheri can be told from *blaisdelli* by its sulcate pronotum, by its much thicker (twice as thickly) punctured head, by its rugose pronotum and by the posterior tibial spurs being very trumpet-shaped (they are only grooved in *blaisdelli*) and by the much duller texture of the head and thorax and elytra.

Genus CALOSPASTA Lec.

Calospasta imperialis n. sp.

Color piceous, head and thorax testaceous, elytra and legs stramineous, antennæ varying from piceous to testaceous, pubescence sparse and short throughout; *form* small, slender and delicate, subparallel; *head* small, subglobose, sparsely and very minutely punctured, with a small shallow depression at frons; *labrum* short, transverse, oblong, finely and thickly punctured in the middle, labro-clypeal suture very distinct; *clypeus* short, transverse, with anterior angles rounded, punctured like head; *maxillary palpi* medium, slender, last article truncate; *antennae* medium, robust, article 1 short, slightly swollen, 2 bead-like, 3 almost equal to 1 and 2, cylindrical, 4-10 subequal, short cylindrical, 11 a little longer and somewhat fusiform; *eyes* large, far apart, almost entire.

Pronotum long, somewhat cone-shaped, very strongly contracted in front and slightly narrowed behind, posterior margin reflexed, a V-shaped depression posteriorly at the middle, punctuation as that of head; *scutellum* small, V-shaped, almost impunctate; *elytra* slightly widened behind, ora and nervures distinct, somewhat coarsely, irregularly and rugosely punctured, separately and bluntly rounded behind; *ventral surface* very finely but distinctly punctured; *legs* long and slender, femora and tibiæ punctured like ventrals, posterior tibial spurs short and weak, the inner sharp, the outer blunt; *tarsi* long and slender; *claws* long and weak.

Length 6 mm., width 2 mm.

Type in Wellman coll. Type locality Meloland, Imperial Valley, California.

Distribution. Imperial Valley, May, 1911, on wild hollyhock (J. C. Bridwell, 9 specimens).

This species is very distinct from anything in the genus yet described.

Genus MELOE L.

Meloe latreillei Mars. = *M. purpurascens* Germ.

M. aeneus Cast. = *M. purpurascens* Germ.

M. maculifrons Luc. = *M. majalis* L. var.

Genus NEMOGNATHA Illig.

Nemognatha bridwelli n. sp.

Color yellowish testaceous, antennæ and last 3 articles of tarsi piceous, pubescence medium in length, light yellow and very thick and close, covering the entire insect; *head* subtriangular, closely,

thickly and finely punctured, a median vertical smooth, raised line on the frons and vertex; *labrum* short, transverse, with strongly rounded anterior angles, punctuation that of head, labro-clypeal suture very distinct; *clypeus* transverse oblong, punctured like head; *maxillary palpi* long, mediumly robust; articles subequal, last article feebly flattened and truncate; *antennae* long, mediumly robust, article 1 short and swollen, 2 not quite as long as 1; cylindrical, 3-10 subequal, moniliform, becoming gradually thinner and slightly flattened on the under side towards the end, 11 about equal to preceding and bluntly pointed; *eyes* large, narrow, strongly uniform and far apart.

Pronotum transverse oblong, sharply and shortly contracted in front, sides parallel, posterior margin slightly reflexed, a very small posterior median depression, punctured like head, but more sparsely; *scutellum* large, triangular with rounded apex, excavated in middle, feebly and thickly punctured; *elytra* slightly narrowed behind, ora and nervures not distinct; very thickly, finely and rugosely punctured, uniformly and separately rounded behind; *ventral surface* punctured like elytra but more sparsely; *legs* medium and robust, femora and tibiæ punctured like ventrals but a little more closely, posterior tibial spurs the inner slender and pointed, the outer thick and grooved; *tarsi* long and mediumly robust; *claws* short and stout.

Length 9 mm., width 4 mm.

Type in Wellman collection. Type locality, Imperial Valley, California.

Distribution, Meloland, Imperial Valley, May 11, on arrow-weed, (J. C. B.) 3 specimens.

This species may be placed near *punctipennis* Lec. and *immaculata* Say., but is easily told from either by its very thick pubescence.

Second International Congress of Entomology.—The Second International Congress of Entomology will be held at Oxford, England, from August 5 to 10, 1912. Further particulars will be announced shortly.

The Executive Committee proposes to find for members of the Congress lodgings in the town, or in rooms in one of the Colleges at a moderate charge; rooms in the Colleges will be available only for men. The Executive Committee invites an early provisional notice of intention to join the Congress, in order to be able to make the arrangements for the necessary accommodation.

The Proceedings of the First Congress are in the press and will be published shortly.

All communications and inquiries should be addressed to the General Secretary of the Executive Committee, Dr. Malcolm Burr, care of the Entomological Society of London, 11 Cavendish Square, London, W., England.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

TO CONTRIBUTORS.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, four weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form and without covers, will be given free, when they are wanted; if more than twenty-five copies are desired, this should be stated on the MS. The receipt of all papers will be acknowledged. Proof will be sent to authors for correction only when specially requested.—Ed.

PHILADELPHIA, PA., JANUARY, 1912.

The Second International Entomological Congress will be held in Oxford, England, next summer. Owing to the distance of the place of meeting from this country, those persons thinking of attending will probably wish to consider ways and means and make their plans at an early date. The meeting will be held August 5th to 10th, the first Congress in Brussels, Belgium, having been held from the 1st to the 6th of August. The First Congress was a decided success, and from present indications the Second Congress will prove even more important. The attendance from America at the First Congress was small as might have been expected, on account of the distance and expense of the journey. Americans should take a greater interest in the coming Congress and see that this great continent is well represented. All those interested in the study are eligible for membership and we hope to see a much larger attendance from this side of the Atlantic this year. It will be possible to see the great collections of England under very favorable circumstances and to make the acquaintance of our fellow workers of Europe. Make up your mind to go. You will have a fine time, an intellectual treat and a warm welcome at Oxford. The expense need not be great. It will be possible to attend the Congress for about $150, or as much more as you care to expend if you travel further while abroad.—H. S.

Entomological Literature.

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

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), excluding Arachnida and Myriapoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted. This (*) following a record, denotes that the paper in question contains description of a new North American form.

For record of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington.

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3. The American Naturalist.—**4.** The Canadian Entomologist.—**5.** Psyche, Cambridge, Mass.—**7.** U. S. Department of Agriculture, Bureau of Entomology.—**8.** The Entomologist's Monthly Magazine, London.—**9.** The Entomologist, London.—**10.** Nature, London.—**11.** Annals and Magazine of Natural History, London.—**13.** Comptes Rendus, Societe de Biologie, Paris.—**14.** Proceedings, Zoological Society of London.—**18.** Ottawa Naturalist.—**22.** Zoologischer Anzeiger, Leipzig.—**24.** Berliner Entomologische Zeitschrift.—**35.** Annales, Societe Entomologique de Belgique.—**38.** Wiener Entomologische Zeitung.—**40.** Societas Entomologica, Zurich.—**43.** La Cellule.—**44.** Verhandlungen, K. k. zoologisch-botanischen Gesellschaft in Wien.—**84.** Entomologische Rundschau.—**86.** Annales, Societe Entomologique de France, Paris.—**89.** Zoologische Jahrbucher, Jena.—**92.** Zeitschrift fur wissenschaftliche Insekten-biologie.—**123.** Bulletin, Wisconsin Natural History Society, Milwaukee.—**166.** Internationale Entomologische Zeitschrift, Guben.—**184.** Journal of Experimental Zoology, Philadelphia.—**186.** Journal of Economic Biology, London.—**193.** Entomologische Blatter, Nurnberg.—**216.** Entomologische Zeitschrift, Stuttgart.—**218.** Mikrokosmos. Zeitschrift fur die praktische Betatigung aller Naturfreunde, Stuttgart.—**290.** Biological Series, Michigan Geological and Biological Survey, Lansing.—**293.** Spolia Zeylanica, Colombo, Ceylon.—**313.** Bulletin of Entomological Research, London.—**324.** Journal of Animal Behavior, Cambridge, Mass.—**341.** Archiv fur Rassen- u. Gesellschafts-Biologie, Leipzig.—**346.** Fauna Exotica, Mitteilungen aus dem Gebiete der exotischen Insektenwelt, Frankfurt am Main.—**350.** Bulletin from the Labo-

ratory of Natural History of the State University of Iowa, Iowa City.—**351.** Zeitschrift fur Allgemeine Physiologie, Herausgegeben von Max Verworm, Jena.—**352.** Revue Critique de Paleozoologie, Organe Trimestrel, Paris.—**353.** Arbeiten aus den Zoologischen Instituten der Universitat Wien.

GENERAL SUBJECTS.—Gregory, J. W. The scientific misappropriation of popular terms, **10,** 1911, 7.—**Hoffman, F.** Noctambulas entomologicus, **216,** 1911, 175-176.—**Manders, N.** An investigation into the validity of Mullerian and other forms of mimicry, with special reference to the islands of Bourbon, Mauritius, and Ceylon, **14,** 1911, 696-749.—**Meunier, F.** Paleozoologie Insectes (Reviews). Fossil insects anl crustaceans from Florissant, Colorado, by T. D. A. Cockerell, **352,** 1911, 210-212.—**Sasse, E.** Zur physiologie des nervensystems der insekten (Nach versuchen an der larve des hirschkafers [Lucanus cervus]), **351,** xiii, 69-104.—**Simpson, J. J.** Entomological research in British West Africa. Hints for collectors, **313,** ii, 187-240.—**Stiles, C. W.** The article 30 (g) of the international rules of zoological nomenclature, **38,** xxx, 202.—**Turner, C. H.** Literature for 1910 on the behavior of spiders and insects other than ants, **324,** 1911, 401-412.—**White, J. C. E.** On the killing of flies, bees, &c., by wasps, **8,** 1911, 260.

APTERA AND NEUROPTERA.—Anon. Von ameisenlowen, **218,** v, 164-166.—**Hoffman, R. W.** Ueber bau und funktion der dorsalkeule von Corynephoria jacobsoni, **22,** 1911, 382-391.—**Lozinski, P.** Ueber die malpighischen gefasse der Myrmeleonidenlarven als Spinndrusen, **22,** 1911, 401-417.—**Meissner, O.** Ameisen und ameisenlowen, **40,** xxvi, 59-60.—**Muttkowski, R. A.** Studies in Tetragoneuria (Odonata), **123,** 1911, 91-34 (*) (cont.).—**Shull & Carriker.** A biological survey of the sand dune region on the south shore of Saginaw Bay, Michigan. Thysanoptera, Mallophaga, **290,** iv, 177-216, 233-242 (*).—**Wasmann & Holmgren.** Tabelle der Termitophya- und der Xenogaster-Arten, **22,** 1911, 428-429.

ORTHOPTERA.—Kheil, N. M. Die Finot'sche Orthopterensammlung in Paris, **166,** 1911, 203-204, 213-215.—**Meissner, O.** Biologische beobachtungen an Dixippus morosus, Nachtrag, **216,** xxv, 185-186 (cont.).—**Shull, A. F.** A biological survey of the sand dune region on the south shore of Saginaw Bay, Michigan, **290,** iv, 217-231.

HEMIPTERA.—Collinge, W. E. On the locomotion and length of life of the young of Pulvinaria vitis var., ribesiae, **186,** vi, 139-142.

LEPIDOPTERA.—Ashworth, J. H. Zoology at the British As-

sociation. Mimicry in African butterflies and moths. The scent patches of Lepidoptera, **10,** 1911, 26-27.—**Barnes & McDunnough.** On certain Olene species, **5,** xviii, 157-159 (*).—**Bohm, L. K.** Die antennalen sinnesorgane der Lepidopteren, **353,** xix, 219-246.—**Chittenden, F. H.** The fig moth (Ephestia cantella), **7,** Bull. No. 104, 1-40.—**Dognin, P.** Heteroceres nouveaux de l'Amerique du Sud, Fasc. III, 66 pp.—**Fassl, A. H.** Die vertikale verbreitung der Lepidopteren in der Columbischen Central-Cordillere, **346,** i, 24-26 (cont.).—**Gibson, A.** Fauna Ottawaensis. Order Lepidoptera: superfamily Geometroidea, **18,** 1911, 105-112.—**Green, E. E.** On the occasional luminosity of the beetle "Harmatelia bilinea, **293,** vii, 212-214.—**de Meijere, J. C. H.** Ueber getrennte vererbung der geschlechter, **341,** viii, 553-603.—**Michael, O.** Beobachtungen ueber vorkommen und lebensweise der Aguasarten des Amazonasgebietes, **346,** i, 21-23.—**Mitterberger, K.** Zur biologie von Depressaria heydenii, **92,** vii, 285-287. Abnormitaten in der begattung einiger microlepidopteren, **166,** 1911, 204-206.—**Rau, P.** Fluffy Cecropia cocoons, **5,** xviii, 168-170.—**Reiff, W.** Experimente an ueberwinternden Lepidoptera-puppen, **92,** vii, 267-270 (cont.).—**Schaus, W.** New species of Heterocera from Costa Rica.—XI, **11,** viii, 577-602.—**Schulze, P.** Die nackengabel der Papilionidenraupen, **89,** xxxii, 181-244.—**Smyth, E. G.** Report on the fig moth in Smyrna, **7,** Bull. No. 104, 41-65.—**Srdinko, J.** Ueber die lebensweise und die zucht von Agrotis candelisequa, **166,** 1911, 217-219.—**Wolley Dod, F. H.** Further notes on Alberta Lepidoptera, **4,** 1911, 361-369 (cont.).

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de Goyaz, Brasil, **86,** 1911, 1-150.—**Heikertinger, F.** Zur praxis des kaferfanges mit dem katscher, **38,** xxx, 227-233.—**Kerremans, C.** Remarques synonymiques sur quelques especes du genre Cyphogastra, **35,** 1911, 294-297.—**Kleine, R.** Biologisches uber den schwarzen Aaskafer (Phosphuga atrata), **193,** vii, 193-199.—**Lund, E. J.** On the structure, physiology and use of photogenic organs, with special reference to the Lampyridae, **184,** 1911, 415-468.—**Mangan, J.** The occurrence of Necrobia and Dermestes in cotton bales, **186,** vi, 133-138.—**Netolitsky, F.** Die parameren und das system der Adephaga (Caraboides), **44,** 1911, 221-239.—**Norton, A. H.** The potato beetle (Doryphora decemlineata) eating the eggs of its kind, **4,** 1911, 385.—**Nusslin, O.** Phylogenie und system der borkenkafer, **92,** vii, 271-278 (cont.).—**Ohaus, F.** Neue gattungen und arten der Dynastidengruppe Phileurini, **84,** 1911, 169-171.—**Rungius, H.** Ueber die physiologische bedeutung des kaumagens von Dytiscus marginalis, **22,** 1911, 442-446.—**Santschi, F.** Une nouvelle espece d'Eciton, **24,** lvi, 113.—**Strohmeyer, H.** Die familie der Platypopiden und ihre einteilung, **193,** vii, 217-218.—**Wickham, H. F.** A list of the Coleoptera of Iowa, **350,** vi, No. 2, 1-40.

HYMENOPTERA.—Allard, H. A. Some experimental observations concerning the behavior of various bees in their visits to cotton blossoms. II, **3,** 1911, 668-685.—**Cockerell, T. D. A.** Records of bees, **4,** 1911, 389-391 (*). Descriptions and records of bees.—XXXIX, **11,** viii, 660-673 (*).—**Cushman, B. A.** Notes on the peach and plum slug (Caliroa amygdalina), **7,** Bull. No. 97, pt. V. —**Girault, A. A.** Miscellaneous notes on the Hymenoptera Chalcidoidea: The genera Arthrolytus, Horismenus, Microgaster, **4,** 1911, 370-377 (*).—**Hormuzaki, F.** Die systematische und morphologische stellung der bukowiner foremen von Melitaea athalia, und aurelia, **92,** vii, 261-267.—**Schmidt, A.** Neue Aphodiinen und eine synonymische bemerkung, **40,** 1911, 55-56.—**Schmiedeknecht, O.** Opuscula Ichneumonologica. Fasc. XXIX, pp. 2241-2322.—**Schulz, W. A.** Grabwespen-Typen Tourniers, Brulles, Lepeletiers und Schencks, **40,** xxvi, 57-59 (cont.).—**Turner, R. E.** Notes on fossorial Hymenoptera.—V., **11,** viii, 602-624.—**Wheeler, W. M.** Pseudoscorpions in ant nests, **5,** xviii, 166-168. Literature for 1910 on the behavior of ants, their guests and parasites, **324,** 1911, 413-429.

Ophioninae.—A Review.—In one of the latest fascicles of the Genera Insectorum, namely Fascicule 114me, received at the Smithsonian Institution, October 12, 1911, and containing 100 pages and 2 plates, Mr. Gy. V. Szepligeti treats of the group of Ophioninae which in his

opinion have a spindel shaped abdomen and for which he proposes to use Foerster's term Mesochoroidae.

Of the Ashmeadian groups Mr. Szepligeti treats the Plectiscini, (omitting the available genera *Hambergiella* Roman, *Mischoxorides* Ashmead, *Clepticus* Haliday, *Symphylus* Foerster, *Acroblapticus* Schmiedeknecht, *Campothreptus* Foerster, *Zarhynchus* Ashmead, *Rhynchothyreus* Ashmead, and *Grypocentrus* Ruthe); the Mesochorini, (omitting *Thymaris* Foerster, which he probably holds with others as belonging to the Tryphoninae and *Edrisa* Cameron); the Campoplegini excepting the genera with compressed abdomen, (omitting *Phobocampa* Thomson, *Paurolexis* Cameron, *Enytus* Cameron, *Neobosmina* Cameron, and *Dusona* Cameron); the Banchini, which he would place in the Pimplinae near Lissonotini, (omitting *Agathilla* Westwood and *Nawaia* Ashmead); the Paniscini, which he says belongs to the Tryphoninae, (omitting *Bucheckerius* Schulz and *Parophelles* Cameron); the Hellwigiini (omitting *Diamon* Gistel); the Nesomesochorini which he persistently misspells as Neomeschorinae and which he holds belongs to the Tryphoninae, (in this view the writer cannot concur as the *Nesomesochorus* Ashmead is almost morphologically identical with *Nonnus* Cresson and should be placed near *Zachresta* Foerster according to present day classifications); and the Megacerinae a group not in Ashmead's classification and held by Szepligeti to belong to the Tryphoninae.

No attempt is made in the work under consideration to bring up to date the first part of the Ophioninae published by the same author, so the available genera omitted from that part are not accounted for—these genera are *Odontagrypon* Cameron in the Anomalini, *Ophiononeura* Cameron, *Enicospilus* Stephens and *Genophion* Felt in the Ophionini and *Hiatensor* Brues and *Protohellwigia* Brues of the Ophioninae.

The chief feature of this classification is the attempt to treat the Ophioninae with a more or less fusiform abdomen and usually round propodeal spiracles as a separate group from those having a compressed abdomen and with the propodeal spiracles usually elongate. In effect this is to apply Foerster's division of the Campoplegini to the whole Ophioninae. Inasmuch as these characters are of doubtful value as a means to a definite end even in the Campoplegini, and owing to the fact that there are numerous examples of intermediates between completely compressed abdomen and fusiformly compressed abdomen and between round and elongate propodeal spiracles, the reviewer is of the opinion that the present classification does not clear up the situation, but makes the classification more unsatisfactory than ever. Are not the difficulties attendant on separating Ichneumonidae into groups through the use of the depression or compression of the abdomen great enough without

again dividing the compressiventres into groups on the degree of compression! To pursue such a course it would seem is to bring on distraction.

In the "Limnerinae" the customary neglect of the Foerster collection is manifest and as usual no reason is given for this procedure. Granting that the Foerster collection of Campoplegini is still in existence our European colleagues could do a great service by consulting it and reconciling the species on which the genera without geno-types were based with the latest facts, to the end that Foerster's genera without species would have species placed in them. It is greatly to be regretted that this latest classification still leaves us in the dark with reference to the genera of Foerster without a species.

The zoogeographical arrangement of the species is convenient and helpful as in other parts done by Mr. Szepligeti. It were well if this arrangement were adhered to throughout the Genera Insectorum. For example the Chalcididae part would have been made useful had the species been divided into zoogeographical regions.

Some corrections and changes are called for—to wit:—page 11, *Biolysa* should read *Biolysia;* page 12, *Canidia* Holmgren is certainly preoccupied in the Coleoptera as correctly held by Ashmead; page 13, the genotype of *Hyposoter* is *H. parorgyiae* Viereck and of *Horogenes* the type is *H. discoocellellae* Viereck. Both of these genera may be distinguished from *Casinaria* by the shorter propodeum which hardly extends beyond the base of hind coxae and does certainly not surpass the basal third of the hind coxæ; there are other differences, but this we hold to be the most important—hence we are opposed to *Horogenes* and *Hyposoter* as being synonymous with *Casinaria.* As the genotypes of *Horogenes* and *Hyposoter* were not published until 1910 they probably were not known to Szepligeti before he finished his paper; page 15, the genotype of *Limneria* Holmgren cannot be a species congeneric with *Eulimneria* Schmiedeknecht so the reviewer in order to make as little confusion as possible chooses (*Ichneumon*) *Limneria longipes* (Muller) Gravenhorst. Thomson, as type of *Limneria;* the type chosen for *Olesicampe* Foerster is *Ichneumon longipes* Muller, thus *Limneria* and *Olesicampe* are isogenotypic and *Olesicampe* becomes the name to be used in place of the preoccupied *Limneria,* making *Limnerium* unnecessary. *Eulimneria* is not congeneric with *Olesicampe* and should not be placed as synonymous with the same: page 21, as the genotype of *Phaedroctonus* Foerster is not included, its being a synonym of *Nemeritis* Holmgren is questioned; page 30, *Tranosema* is preoccupied by the *Tranosema* (Foerster) Thomson, and therefore may be called *Zatranosema* new name; page 33, the synonymy being correct *Eriborus* must replace *Anilastus;* page 38, *Nythobia* and *Diadegma*

have had species placed to their credit; page 39, *Anempheres* had a species assigned to it early last year (1911), *Idechthis* is misspelled; page 40, *Asinamora* is misspelled; page 42, *Campoletis* had a species assigned to it early last year (1911), *Ameloctonus* had a species assigned to it by Ashmead in the 1900 edition of the New Jersey List of Insects; page 55, *Aperileptus* is misspelled; page 65, *Aniseres pallipes* is misspelled; page 68, the type of *Helictes* Haliday is the same as that of *Myriarthrus* Foerster, these genera are therefore synonymous, but not the same as *Megastylus* Schiodte. *Helictes* being the older genus replaces *Myriarthrus* Foerster; page 70, *Nesomesochorini* and *Nesomesochorus* are misspelled; *Cidaphus* Foerster and *Plesiophthalmus* Foerster are isogenotypic, therefore *Cidaphus* replaces *Plesiophthalmus* Foerster which is preoccupied, Ashmead's *Plesiophthalmus* is very likely not congeneric with *Cidaphus* Foerster; page 76, *Parabates* (Foerster) Szepligeti is preoccupied by *Parabates* (Foerster) Dalla Torre and should be replaced by *Opheltoideus* Ashmead; page 84, *Ceratogastra* is misspelled; page 85, *Xenoschesis* and *Polycinetus* are misspelled.

The author is to be congratulated upon having finished the Ophioninæ and it is to be hoped that in a supplementary part he will reconcile the Foerster collections in this subfamily at least with his work as it now stands.—H. L. Viereck, U. S. National Museum, Washington, D. C.

Das Tierreich. 26 Lieferung—Ixodidae, 169 pp., 1911, by L. G. Neumann. Dr. Neumann's long-deferred part on the ticks has just been issued. It was prepared in 1907 and does not contain species published since the early part of 1908. Yet it will be of the greatest value to the systematist as a summary of the author's well-known "Revision de la famille des Ixodides," and the "Notes." The family is divided into two sub-families, Ixodinæ and Spelæorhynchidæ, the latter for a peculiar mite which is probably more related to Gamasidæ. The Ixodinæ is divided into two sections, Ixodini and Argatini, the latter the Argasidæ of many writers. The genera of Ixodini are arranged in three tribes; Ixodaria (the same as my Ixodini), the Rhipicephalaria (the same as my Rhipicephalini, plus the exotic genus *Hyalomma*), and the Amblyommataria, which includes *Amblyomma*, *Haemaphysalis* and *Dermacentor*. The author correctly places *Boophilus* as a synonym of *Margaropus*, and *Rhipicentor* as a *Rhipicephalus*, widely separated from *Dermacentor*. *Aponomma* is retained as a valid genus. *Ceratixodes* and *Eschatocephalus* are put as subgenera of *Ixodes*. Our chicken tick, *Argas miniatus*, is put as a sub-species of *A. persicus*. Altogether 207 species and 40 sub-species are held as valid. In the back is a useful host-list.—N. Banks, East Falls Church, Virginia.

JAMES H. B. BLAND.

OBITUARY.

James H. B. Bland.

(Portrait, Plate V.)

James H. B. Bland died in Philadelphia, November 12, 1911, in his seventy-ninth year. He was born in North Carolina but, removing to Philadelphia, became one of the organization members of the Entomological Society of Philadelphia, on February 22, 1859. He took an active interest in the Society, serving as Vice-President for two years, 1861-1862, as President for three years, 1863-1865, and was seldom absent from the meetings during the first decade of the Society's existence. His entomological activities were largely aided by Dr. Thomas B. Wilson, that great friend and patron of science in the fifties and early sixties, whose relations to this Society have been recently told in Mr. E. T. Cresson's History of the American Entomological Society.

Bland published seven papers on Coleoptera, all in the *Proceedings of the Entomological Society of Philadelphia,* Vols. i-iv.

A reference to Bland's collecting during these years was recently made in this journal (Entomological News, October, 1911, p. 354) by Dr. Skinner.

For the last forty years Bland's entomological interests were more spasmodic, although he was an organization member of the Feldman Collecting Social, in December, 1887, and first President. Part of an anniversary address which he delivered to the Social, December 26, 1889, and his portrait were published in a booklet, issued in 1907, in commemoration of the twentieth anniversary of the Social, and to the Social we are indebted for the privilege of reproducing the portrait here.

F. W. Terry.—Again it is my sad task to advise you of the untimely cutting off of another Entomologist. Mr. F. W. Terry, of the Hawaiian Sugar Planters' Experiment Station, of Honolulu, died in New York, on November 8, 1911, and his body was sent to England by an aunt, Mrs. M. L. Edmondson. He arrived in New York, on October 19th, on his way from his English home to Honolulu, after a vacation taken for the restoration of his health, undermined by a long residence in the tropics. He was quite ill on the steamer com-

ing over, and on his arrival at his hotel his weakness was of so serious a nature that his aunt put him in charge of a physician and a nurse, but a few days later the alarming nature of his case made his removal to a hospital necessary. He was therefore taken to Roosevelt Hospital, where he was attacked by pleuro-pneumonia, and in his enfeebled condition his heart failed rapidly. All efforts to strengthen it were unavailing, and he passed away far from his native land.

Owing to my slight acquaintance with Mr. Terry, I am unable to furnish any biographical data.—J. R. DE LA TORRE BUENO.

GEORGE HENRY VERRALL, eminent British Dipterist, died September 16, 1911. He was born February 7, 1848, was a member of the "well known firm of race-course managers and bankers, Messrs. Pratt & Co., and was concerned as auctioneer with the sale of many famous race horses," and member of Parliament for East Cambridgeshire in 1910. He served as President of the Entomological Society of London in 1899. He had planned a series of volumes on the *British Flies*, but lived to complete only two of them, Vol. VIII. Syrphidae, etc. (1901), and Vol V. Stratiomyidae, etc. (1909). Notices of his life are given in the English entomological journals, portraits accompanying those in the *Entomologist* and *The Entomologist's Monthly Magazine* for November.

ALBERT HARRISON, whose death on August 28, 1911, is also announced by our English contemporaries, was known for his breeding experiments on Lepidoptera. He was born in 1860.

JULES BOURGEOIS, the chief authority on Cantharidae, died in Markirch, Alsace, on July 18, 1911, aged 65 years. On February 22nd last he had been elected an honorary member of the Entomological Society of France.

ENTOMOLOGICAL NEWS for December, 1911, was mailed November 29, 1911.

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