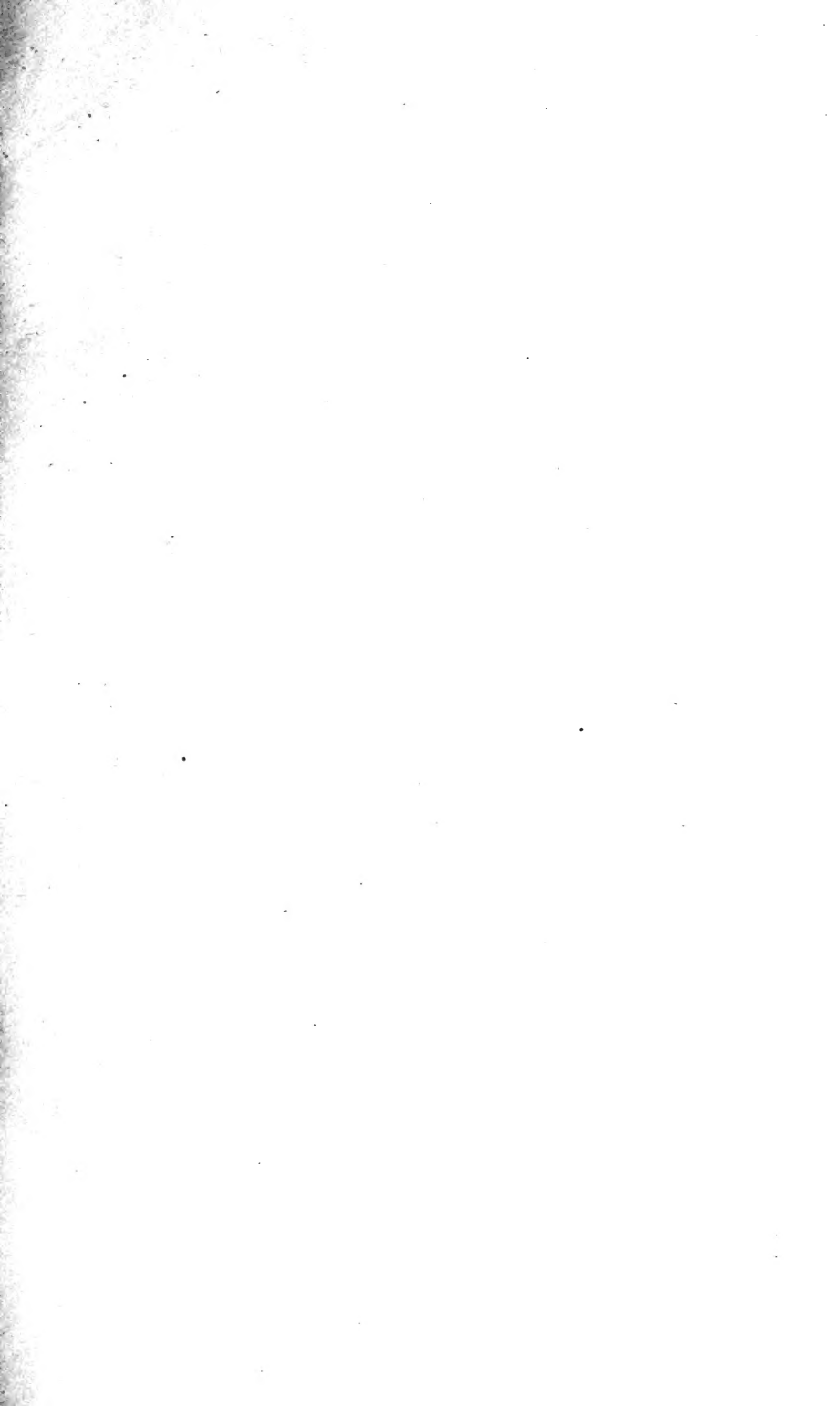
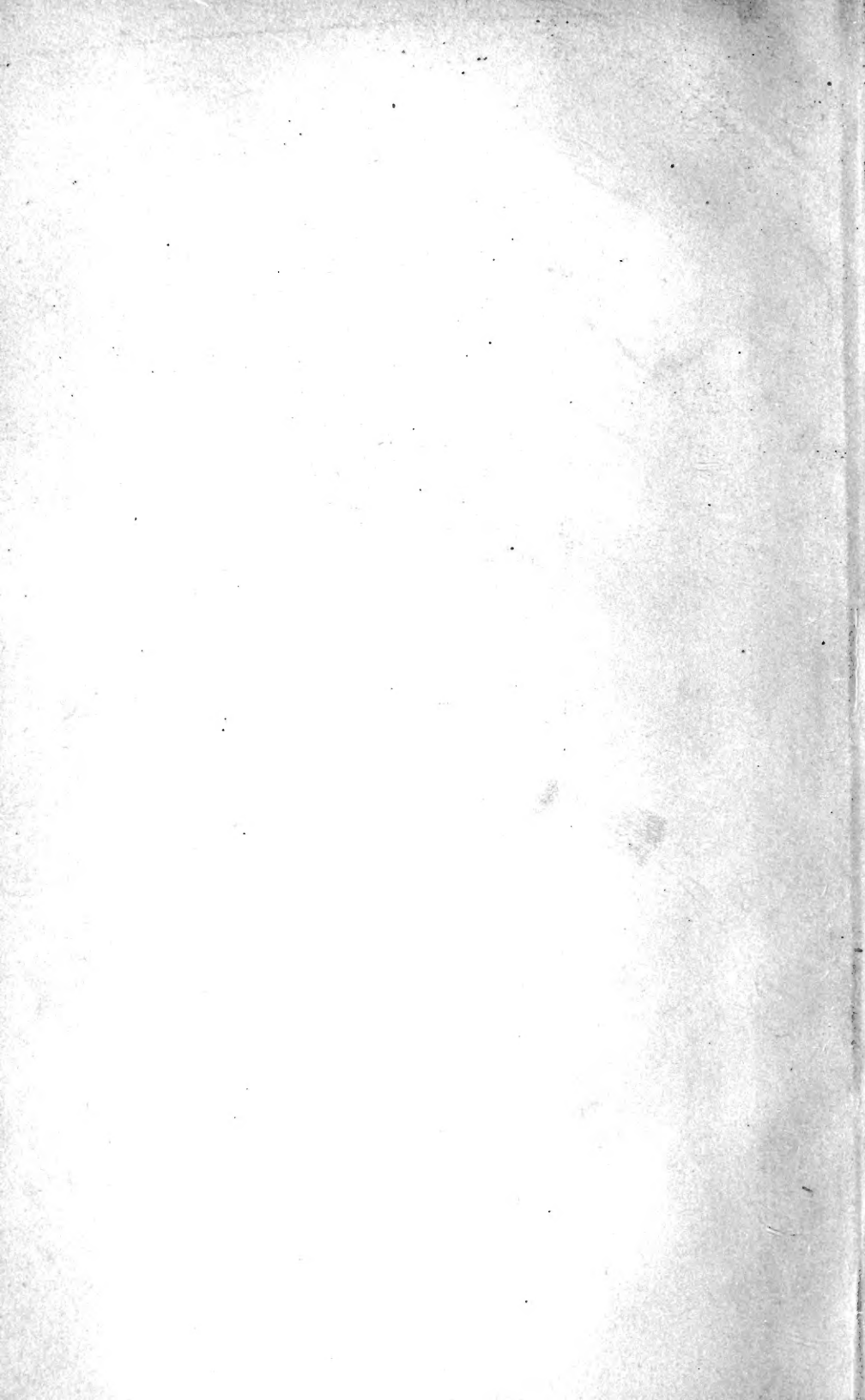


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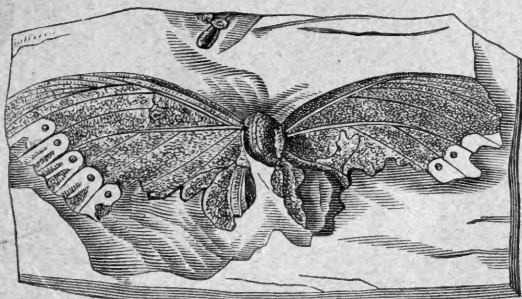




VOL. IX.

No. 1.

# Entomological News



ARGYNNIS PLUTO.  
(Fossil butterfly)

JANUARY, 1898.

EDITOR :  
HENRY SKINNER, M. D.  
PHILIP P. CALVERT, Ph.D., Associate Editor.

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EZRA T. CRESSON.      CHARLES A. BLAKE.      CHARLES LIEBECK.  
PHILIP LAURENT.      WILLIAM J. FOX.      CHARLES W. JOHNSON.

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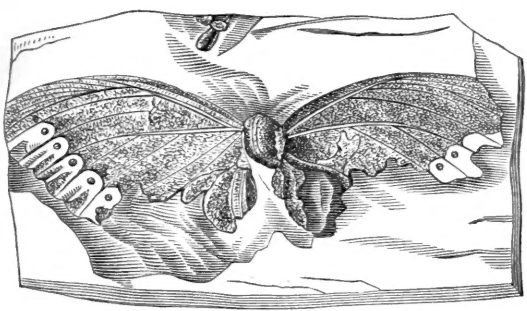
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*Antiqua*



DR. GEORGE H. HORN.

# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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JANUARY, 1898.

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### Dr. GEORGE H. HORN.

GEORGE HENRY HORN was born in Philadelphia, April the 7th, 1840, and died at Beesley's Point, N. J., November the 24th, 1897. He had an apoplectic stroke in December, 1896, which caused hemiplegia, from which he did not recover, and he was at the sea-shore for the benefit of his health and of this partial paralysis when the end came.

He was a graduate of the Philadelphia High School, from which he received the degrees of A. B. and A. M., and in 1861 received the degree of M. D. from the University of Pennsylvania. From 1862 to 1866 he was in the service of the United States, being surgeon in the 2nd Infantry, California Volunteers, Department of the Pacific; serving in California, Arizona and New Mexico, where he collected extensively in entomology. Until within the last few years of his life he practiced medicine, his specialty being obstetrics, in which branch he was an expert, not infrequently being called in consultation in difficult cases. Much of his scientific work was done at night during time stolen from sleep and after the day's cares and professional engagements were over. The days were never long enough, and this close application to work and devotion to science may have been a factor in shortening his life.

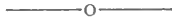
His entomological work was concerned almost exclusively with the Coleoptera, his first paper being entitled "Descriptions of Some New North American Species in the Cabinet of the Entomological Society of Philadelphia," published in the "Proceedings of the Academy of Natural Sciences of Philadelphia," in 1860. Seven species new to science were described and figured. In all over one hundred and fifty papers were contributed to the proceedings and transactions of learned societies, his last contribution being an important one on the Coleoptera of Baja California, published in the "Proceedings" of the California Academy of Sciences for 1895.

After the death of Dr. John L. LeConte in 1883, Dr. Horn, who was a worthy successor, was elected President of the American Entomological Society and Director of the Entomological Section of the Academy of Natural Sciences. These two offices he held at the time of his death. He was Professor of Entomology at the University of Pennsylvania since 1889, but did not teach or lecture there, the position being an honorary one.

Among scientific bodies the following may be mentioned as having conferred special honors on him. He was elected a corresponding member of the Boston Society of Natural History in 1893; an honorary member (one of twelve) of the Entomological Society of Belgium; an honorary member (one of ten) of the Entomological Union of Stettin; an honorary member (one of eleven) of the Entomological Society of France, of the Russian Entomological Society, and of the Feldman Collecting Social of Philadelphia. At its commencement in March, 1897, the Western University of Pennsylvania, at Pittsburg, conferred on him the degree of Sc.D. He was a Secretary and Librarian of the American Philosophical Society (Philadelphia) at the time of his death. In 1866 he joined the Academy of Natural Sciences of Philadelphia, held the office of Corresponding Secretary for fourteen years, and was a member of the Council and of the Finance and Publication Committees for long periods of time.

Dr. Horn was a patient and untiring worker, and his loss will be keenly felt in the institutions in which he served as an officer so long and efficiently. The entomological world has lost a shining light and American Coleopterology its greatest votary. As a systematic coleopterist he probably did not have a superior in the world. His large collection of beetles was considered the

finest extant in the field he cultivated. It, with his library and five thousand dollars for the care of the former, he willed to the American Entomological Society. The portrait here presented was the one he considered the best, and is the one he wished perpetuated. His memory will always be cherished by those whom he was ever willing to aid by advice and assistance in their scientific studies. An extended biography will appear later in the "Transactions of the American Entomological Society."



### THE IDENTITY OF XYLEBORUS AFFINIS, WITH SOME SYNONYMICAL NOTES.

By W. F. H. BLANDFORD, London, England.

In his admirable paper on "The Ambrosia Beetles of the United States" (U. S. Dept. Agr. Bull. 7 (N. S.), pp. 9-30) Mr. H. G. Hubbard refers to a matter of some economic importance, the doubtful identity of *X. affinis* Eichh., with the West Indian "sugar-cane borer" and its distribution in North America. As this has been a vexed question (see Proc. Ent. Soc. Wash. iii, p. 171), and, as I have been concerned with the identification of the borer, I desire briefly to reply to Mr. Hubbard's statements that my determination "made from the females only cannot be reliable," and that "the sugar-cane borer is very probably a distinct and as yet unnamed species, the introduction of which into the United States is greatly to be feared. It cannot be identical with *X. affinis*, which is common in the Southern States, yet has never been known to attack sugar-cane."

That the "sugar-cane borer" is *X. affinis* I have not the least reason to doubt. In my original report on it, it was thus identified by the description alone (though that is unmistakable), but the name *affinis*, in deference to another opinion, was there treated as a synonym of the older *X. perforans* Woll. (*kraatzi* Eichh.). In a later "Report on the Destruction of Beer-casks, etc.," London, 1893, which Mr. Hubbard has perhaps overlooked, I pointed out that the range of the typical form of *X. affinis* is exclusively neotropical with the exception of Mauritius, and that of *X. perforans* is chiefly palæotropical, but that intermediate examples were before me from the West Indies and Ceylon; also that the material I had examined included *typical*

examples of both sexes of *X. affinis* labeled by Eichhoff and in the Brussels Museum. (I now possess some by exchange and have seen others of Eichhoff's own series).

The question at issue has been not the identity of the "cane-borer" with *X. affinis*, which has been controlled by repeated comparison of the two sexes with Eichhoff's types, but the identity of that species with *X. perforans* Woll. Since 1893 the examination of some hundreds of specimens leaves me more strongly than before of opinion that a separate name may well be retained for each form, although one cannot always satisfactorily refer individuals to one or the other.

The published evidence leaves the occurrence of *X. affinis* in the United States doubtful. In the posthumous paper translated by Mr. Schwarz (Proc. U. S. Nat. Mus. xviii, pp. 605-610, 1896) Eichhoff, writing to Riley in 1892, says: "what *X. pubescens* Zimm. is, remains for the present unknown to me, since among the specimens which you send me as such I believe I can distinguish three species, viz., *X. affinis* Eichh., *X. inermis* Eichh., and a third one." Now, inasmuch as a series of N. American Scolytids had been sent to Eichhoff, this seems conclusive until it is recollected that in the same year examples of the cane-borer were sent from the West Indies to Riley and identified at Washington with *X. pubescens*. Were these included in the series forwarded to Eichhoff, and did his recognition of *X. affinis* refer to them?

No examples of *X. affinis* from anywhere north of Mexico, where it is common, have yet reached me, and a series of *X. pubescens* sent by Prof. A. D. Hopkins are all referable to *X. inermis*. Possibly this latter species, which has not been found in Central America, has by some means become regarded as *X. affinis*, and is the one referred to as such by Mr. Hubbard.

Whatever the cane-borer's name is, the evidence of its distribution drawn from existing collections points to its being neotropical and having occurred throughout the West Indian islands long before it was noticed to attack canes. I cannot accept the suggestion (Proc. Ent. Soc. Wash. iii, p. 171) that it was imported in ribbon-cane from Ceylon, because I have never seen its typical form from Ceylon, though I have examined many Scolytids from that island. Nor is any damage to canes recorded therefrom.

A parallel case has occurred in Java, where *Xyleborus destruens* Blandf., has taken lately to riddling cacao trees. These have long been cultivated there, and the beetle, a large and well-marked species, can be no new importation, because I possess specimens taken years ago in Java and Gilolo by Wallace.

A diseased condition of the canes, favored by the accumulation of fermenting trash, was probably the cause of the West Indian outbreak, and *X. affinis* may yet be common in the Southern States without destroying canes, provided that they are not in a condition to invite its attacks.

Much has been made of the difficulty of identifying the females of this group, and they have been said to be indistinguishable. As Eichhoff's work was done on the females alone, either that statement is overdrawn, or he divided and characterized a mass of identical examples. For its size, *Xyleborus* is really one of the easiest of Scolytid genera, and even this group presents no very great difficulty so far as the identification of the majority of examples is concerned; most of Eichhoff's species can be made out by the descriptions alone. The real difficulties are those of delimitation, which spring from the existence of individuals bridging over the not very wide gaps between allied forms, and are such as are met with in most large genera of the Animal Kingdom.

The publication of Eichhoff's paper, just referred to, has anticipated several of the synonyms of North American Scolytids which I have noted at different times. There are, however, one or two points to be added hereon.

It is known that some of Zimmermann's and LeConte's names (Tr. Am. Ent. Soc., Sept., 1868) clash with others of Eichhoff published in 1868 in the "Berliner Entomologische Zeitschrift," and the latter have been regarded as prior both by Eichhoff himself and by Mr. Schwarz. This is incorrect; reference to p. xi, or to the original wrappers of the "Zeitschrift" for 1868 shows that pp. 177-312, which include Eichhoff's descriptions, were not published till March, 1869.

Therefore, the names *Hylastes opaculus* Lec., *H. scabripennis* Zimm., and *Pityophthorus pullus* Zimm., should be retained.

The generic names *Tomicus* Latreille (1807 *nec* 1802) and *Xyloterus* Er. (1836) should give place to *Ips* De Geer (1775) and

*Trypodendron* Steph. (1830) respectively, with which they are coterminous.

As has been pointed out by Eichhoff, his name *Pterocyclon*, (1868), should replace *Monarthrum* Kirsch (1866). The latter's diagnosis is absolutely the same as that of *Corthylus* Er., in which, too, a species of *Pterocyclon* was included. Erichson, Kirsch and LeConte are alike incorrect in stating the funicle to be one-jointed instead of two-jointed in these insects. Ferrari's subgenus *Cosmocorynus* is wrongly characterized by LeConte and has no North American representative.

*Hylastes (Hylurgops) pinifex* Fitch, is distinct from the European *H. decumanus*, differing in the thoracic punctures of two sizes, the more rugose interstices and the longer and stouter bristles of the elytra.

*Crypturgus atomus* Lec. This has been regarded as identical with *C. pusillus* Gyll. Specimens received from Prof. A. D. Hopkins appear to be distinct, having the punctuation finer and the ground sculpture different; but a more extensive comparison is desirable.

*Tomicus plastographus* Lec. = *T. integer* Eichh. Californian examples sent by Mr. Ricksecker and corresponding with LeConte's description conform to Eichhoff's type.

*Tomicus cacographus* Lec. = *T. grandicollis* Eichh.

*Xylocleptes concinnus* Mann. With Eichhoff, I should refer this to *Tomicus*, or rather *Ips*. The structure of the mouthparts is not that of a *Xylocleptes*, but of a *Tomicus*, with which genus its habits associate it.

*Pityophthorus lautus* Eichh. Specimens forwarded by Prof. Hopkins under this name do not correspond with Eichhoff's description. I conjecture them to be *P. bisulcatus* Eichh., because they differ from the European *P. micrographus* L. precisely as *P. bisulcatus* is stated by Eichhoff to do.

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PHYSIOLOGICAL SPECIES.—Does Prof. Cockerell hold that species exist which differ from other species only in physiological characters? If so, why does he not mention a single case and give the evidence? If not, why does he use term *physiological species*? To me his article in the December NEWS is not very clear.—CHARLES ROBERTSON.



**IOWAN ODONATA.**

By MORTON J. ELROD, University of Montana.

For several years the writer has been permitted to spend the month of July in Des Moines, Iowa. At intervals when other duties could be laid aside rambles were taken along the Des Moines and Raccoon Rivers in search of specimens. At this season of the year the water in these rivers is usually clear and shallow. As a consequence many species of fine Unios were secured. Lepidoptera and Odonata were the only insects sought. As no previous record has been made of collections of dragonflies from this locality, the publication of the following list of 28 species, which by no means represents the Odonate fauna of the State, may be useful, and may serve those students of the State who are working upon this group of insects. Of this list at least 16 have not before been recorded from Iowa, though they are in some cases reported from adjoining States. It is also to be noted that many common forms, e. g., *E. civile*, are absent from the list. Other collectors may later report these, or at least some of them, from the State.

It may be appropriate to add that all the species mentioned in the list are in the writer's collection. Specimens reported from Clinton and Sabula were collected by J. S. Faaborg,

[I have taken the liberty to add to Prof. Elrod's notes records of a few species of Odonata collected for me, in 1889, by Miss Alda M. Sharp, of Gladbrook, Iowa, who labeled them "Tama Co., Iowa" Such additions are enclosed in brackets.—Philip P. Calvert.]

1. ***Calopteryx maculata*** Beauv.

In July, 1893, this species was quite abundant along a small rivulet a half mile north of Drake University. It was in a wooded, hilly region that had not as yet been much used for pasture. The season was rainy, and every other day I visited the place, securing each time quite a number. In 1894 the season was quite the opposite of that of 1893, and the ravine had dried up. In 1895 I did not visit the place. In 1896 it was overrun with stock, and no *maculata* could be found. During the month of July, 1897, I secured a dozen or more at Dunreath, Iowa, some thirty miles from Des Moines.

[One ♂ June 21, one ♀ June 28 "on blackberry bushes in

garden," one ♀ June 29 "on currant bushes in garden," Tama Co., Ia., Miss Sharp.]

2. **Heterina americana** Fab.

At the dam of the city waterworks in the Raccoon River and along the river above the dam, among the willows, taken in numbers in July, 1893 and July, 1894. It was fairly abundant. I also saw numbers of this species at Webster City along the Boone River in July, 1896, but as I had no net none were taken.

3. **Lestes forcipata** Ramb.

I have a dozen-and-a-half specimens taken in July, 1896. They were secured near a small artificial pond; although I have hunted in these same regions in previous years, I have no specimens save those taken at the time mentioned.

4. **Lestes unguiculata** Hag.

Abundant; I have specimens taken July, 1892, June 29, 1893, Aug. 4, 1896, and July 12, 1897. During the wet season in 1893 I was able to take many specimens at a single sweep, in the grass near artificial ponds.

5. **Argia apicalis** Say.

This is the only *Argia* taken in the several years over which these observations were made. A half dozen of these were secured during July of the past season at Des Moines. They were rare along the bank of the Raccoon River, flying among the grass and weeds, quite difficult to take.

6. **Anomalagrion hastatum** Say.

In July, 1895, I tried the place where *L. unguiculata* had formerly been taken so abundantly. The pond was drained, though there was a little water, much mud, and a good deal of wire grass. In this grass I found about a dozen specimens of *A. hastatum* Say. This extends its distribution westward. It has also been taken abundantly at Bloomington, Ill.

7. **Ischnura verticalis** Say.

From Fulton, Ill., Sabula and Des Moines, Iowa. It does not seem to be as common as one would suppose.

8. **Enallagma ebria** Hag.

About a dozen specimens, June 29, 1893. As this species has been recorded from Missouri it is not surprising that it is found in Iowa.

9. **Enallagma hageni** Walsh.

Fairly abundant, some twenty specimens having been taken.

10. **Enallagma fischeri** Kell.

Not common, a half dozen being the entire number taken, from Des Moines.

11. **Enallagma signata** Hag.

A broken specimen from Clinton, Ia., taken June, 1897.

12. **Nehalinnia irene** Hag.

A half dozen specimens, taken in same locality as *A. hastatum* Say, in 1893, and a single immature ♀ from Clinton, Ia., in June, 1897.

13. **Gomphus amnicola** Walsh.

A single female, collected in July, 1892, at Des Moines.

14. **Gomphus vastus** Walsh.

Three specimens from Clinton, Ia., taken in June, 1897.

15. **Anax junius** Drury.

This large "spindle" is quite abundant, a small surface pond at Dunreath, some thirty miles from Des Moines yielding a large number of specimens Aug. 4, 1896. They were caught in copulation and in act of oviposition. Specimens are in my collection sent from Clinton.

[One ♂, Tama Co., Miss Sharp.]

16. **Tramea lacerata** Hag.

A single female, taken at Clinton, May, 1896.

17. **Celithemis eponina** Drury.

A single female from Clinton.

18. **Plathemis trimaculata** De Geer.

Abundant; a small pond of stagnant water affording good collecting.

[One ♂ July 29, "flying over still water," one ♀ June 28, "blackberry in garden," Tama Co., Miss Sharp.]

19. **Libellula pulchella** Drury.

Nine specimens, taken Aug. 4, 1896, at Dunreath. These were taken along the railroad, among the bushes, and were quite wary. There were numerous small ponds of water, and likewise numerous kingbirds, *Tyrannus tyrannus*. I could see no drag-

onflies of any kind near any of the ponds where these birds were to be observed.\* I have also specimens from Clinton.

[Two ♂ July 29, "flying over water," "on grass overhanging water," Tama Co., Miss Sharp.]

20. **Libellula basalis** Say.

Rare. The only specimen I secured was a male, captured in the weeds in the bottom of Des Moines River, some thirty miles from the city. I have another female from Clinton.

21. **Libellula quadrimaculata** L.

Two from Sabula, Ia., June, 1897. This seems to be a rare species. In nine years' residence in Illinois I did not see a single specimen, though Mr. C. C. Adams has one or two. In eight seasons while at Des Moines I have not seen a specimen.

22. **Pachydiplax longipennis** Burm.

Not common, five specimens being the total number collected, four taken Aug. 4, 1896, at Dunreath, Ia.; one at Clinton, Ia., June, 1897.

23. **Mesothemis simplicicollis** Say.

A few specimens, taken from Sabula, Ia., June, 1897.

24. **Diplax corrupta** Hag.

This widely distributed species is represented in my collection by three specimens, taken at Dunreath, Ia., Aug. 4, 1896.

25. **Diplax rubicundula** Say.

var. **assimilata** Uhler.

Quite common in August, 1892, but none taken after that, though they are undoubtedly to be had.

[Three ♂ eight ♀ July 12 "dry meadow," three ♂ five ♀ July 15 "wet meadow near standing water," Tama Co., Miss Sharp.]

26. **Diplax obtusa** Hagen.

Four specimens, sent me from Clinton, Ia.

27. **Diplax vicina** Hag.

Not common; I have only a few specimens, taken in Aug., '93.

28. **Leucorhinia intacta** Hag.

A single male from Sabula, Ia.

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\* According to a note by J. L. Hersey, quoted in the "Canadian Entomologist" for April, 1873, p. 160, dragonflies are a favorite food for kingbirds.—P. P. C.

## DESCRIPTIONS OF NEW WEST AFRICAN HETEROCERA.

Paper I.

By Chancellor W. J. HOLLAND, Ph. D., LL. D., F. Z. S., etc.

When starting for a short visit to Europe last May, I succeeded in finding a few moments' time in which to hastily gather together some five score of specimens from my collection of African Lepidoptera, which I had reason to think new to science, and took them with me. I found time in the midst of other duties to pay a number of visits to the British Museum and the Royal Museum in Berlin, as well as to inspect a number of collections in private hands, which are rich in African material. As the result my opinion as to the nondescript character of most of the species was confirmed, and I propose from time to time, as I chance to have leisure, to publish descriptions of these things, possibly accompanied by illustrations, if I shall find time to prepare the latter. The types are all in my collection.

### Family SYNTOMIDÆ.

Genus **SYNTOMOIDES**\* Hampson.

1. ***S. xanthopleura*** sp. nov. ♂.—The wings are marked exactly as in *S. puncticincla* Holl. ("Psyche," January, 1893), but the species in hand may at once be distinguished by the totally different markings of the body. The front is pale yellow, almost white, the collar and patagia are orange-yellow, the top of the thorax is black. The abdomen is orange-yellow, with a black dorsal line beginning on the third segment from the thorax, on which, as well as on the fourth segment, it is extended down on either side to the line of the spiracles, as a saddle-shaped mark. This dorsal line is narrow on the remaining segments of the abdomen, and disappears wholly before reaching the anal extremity. The underside of the thorax and abdomen is grayish yellow. The legs are black, marked with yellowish rings. Expanse 25 mm.

*Habitat*.—Efulen, Bulé Country, Cameroons (coll. A. C. Good, Ph. D.).

2. ***S. seminigra*** sp. nov. ♀.—The forewings are marked as in *S. leugalea*

\*In "Psyche" for January and February, 1893, I described a number of West African Syntomidæ, referring them to the genus *Syntomis*. In so doing I was following well-established precedents. After the descriptions had been prepared and published I received the first volume of Sir George F. Hampson's work on the Lepidoptera of India, and found that he had erected a new genus, *Syntomoides*, for the reception of a number of the forms hitherto placed by authors in *Syntomis*. His arrangement is certainly natural, and I desire to state that of the species named by me at the time referred to, the following will naturally come under his genus *Syntomoides*:—*S. leugalea*, *elasson*, *elachista*, *miservabilis*, *puncticincla*, *leimacis*, *goodii*, *reutlingeri*, *cytogaster*, *leucerythra*, *crenophylax* and *cybelistes*.

Holl. ("Psyche," January, 1893), but the dark markings are somewhat broader and heavier. The hindwings have the costal margin and the whole outer half broadly black, leaving only a relatively small translucent spot on the inner margin. The body is black. The front is white. There is a narrow ring of white on the abdomen back of the thorax. The pectus and the anterior segments of the abdomen on the underside are accentuated with white lines. Expanse 21 mm.

*Habitat*.—Efulen, Bulé Country, Cameroons (coll. A. C. Good, Ph.D.). This is a well-marked and distinct species. It is, so far as I know, not as yet represented in any European collection.

#### Genus **SYNTOMIS** Ill.

3. **S. kerri** sp. nov. ♂.—The anterior wings recall *S. leucogastra* Holl. ("Psyche," January, 1893), but the white subapical spot and the white spot in the cell in *S. kerri* are small, whereas in *S. leucogastra* they are relatively large. The secondaries are marked with three white semi-translucent spots near the base, whereas in *S. leucogastra* the secondaries are solidly black. But the strongest points of difference between the two species are found in the markings of the abdomen. The abdomen in both species is black, but in *leucogastra* the anal extremity is heavily tipped with bright orange, whereas in *kerri* it is narrowly tipped with dark crimson. The underside of the abdomen in *leucogastra* is broadly and conspicuously white, in *kerri* it is uniformly deep black. The pectus and legs in *leucogastra* are orange; in *kerri* they are black. Expanse 24 mm.

*Habitat*.—Cameroons (coll. Kerr).

4. **S. efulensis** sp. nov. ♀.—The body, the antennæ and the legs are black. The anterior segments of the abdomen are marked laterally upon their edges by short lines of metallic green. The primaries are black, glossed in certain lights with green. There is a large quadrate hyaline spot at the end of the cell and the intraneural spaces on the disc are pale semi-translucent green. The secondaries are heavily bordered on all sides with black, leaving an elongated hyaline spot in the middle of the wing below the cell. Expanse 32 mm.

*Habitat*.—Efulen, Bulé Country, Cameroons (coll. A. C. Good, Ph.D.). This is a very distinct species.

#### Family ZYGÆNIDÆ.

#### Genus **TASEMA** Walker.

5. **T. nox** sp. nov. ♂.—This obscure little moth is black, with a greenish reflection in certain lights. The antennæ are minutely tipped with white. There is nothing more to be said after having located it in the proper genus, as was kindly done for me by Sir George F. Hampson. Expanse 20 mm.

*Habitat*.—Cameroons (coll. A. C. Good, Ph.D.).

## Family ARCTIIDÆ.

Genus **ANACE** Walker.

6. **A. melalouca** sp. nov. ♂.—Antennæ with a white shaft and pale brown pectinations. Front, collar and patagia pale red; thorax and abdomen luteous; and extremity of abdomen tipped with slaty gray. The lower side of the thorax and abdomen whitish; legs white, with the tibiæ of the anterior pair margined in front with gray. The anterior wings are white, lightly laved toward the base with yellowish. The costa is narrowly edged with slaty gray, as far as the middle, and the whole outer half of the wing is marked with the same color, the inner line of demarcation sweeping around in a graceful curve from the middle of the costa to the inner margin before the outer angle. The secondaries are white, laved with yellowish on the inner margin and at the base. The wings on the under side are marked as upon the upper side. Expanse 24 mm.

*Habitat.*—Cameroons (coll. Kerr).

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**LASIOCAMPA MEDUSA** n. sp.

By Dr. HERMAN STRECKER.

I received about a year since from Mr. Max Albright, of the Soldiers' Home, Los Angeles County, California, a female *Lasiocampa* (or *Gloveria* as the American authors have it); it was raised from the larva and is different from *arizonensis* or any of the Mexican species known to me. It expands four inches; the thorax and primaries above are very dark smoky gray, basal part of wings and thorax heavily furred, the mesial part a shade paler, minute white hairs are sprinkled over the whole surface; a small white discal spot, as in *arizonensis* and other species; inferiors and abdomen almost as dark as the primaries, but more brownish in tint; under surface of all wings almost uniform dark brown with a sprinkling of white hairs, most noticeable towards the costal margins; abdomen darker and also with the sprinkling of white hairs. This insect is larger than any of the American species known to me, and will be easily known by its deep, almost black color and lack of ornamentation, except the discal spot as well as by its general heavy appearance. The wings are much less pointed apically than in *arizonensis* and broader in proportion to their length, the abdomen is much longer, extending far beyond the inferiors. I know of but this one example which was sent to me along with the cocoon and pupa case from which it emerged.

## Notes on the Mutillidæ of North America.

By WILLIAM J. FOX.

Through the courtesy of Mr. Samuel Henshaw I have had the opportunity of examining Blake's types of *Psammotherma ajax*, *Mutilla floridana* and *M. trisignata*, all described as occurring in Florida. As to the first-mentioned species it has always been placed in our lists with doubt; and a comparison of the type with the description of *Psammotherma flabellata* Fabr., shows that it is identical with that species, whose home is Africa.

On glancing at *M. floridana* and *trisignata* it was at once obvious that these species were strangers to our fauna. By the aid of Radoszkovsky and Sichel's "Essai d'une Monographie des Mutilles de l'ancien Continent," *M. floridana* is found to be the European *M. maura* Linné, while *M. trisignata* is referable to *M. arenaria* Fabr., also of Europe and Africa.

A written label attached to the specimens in question reads as follows: "Harris from Doubleday Fla?" The facts that they came from Doubleday, a European collector, and that the locality given is queried, are in themselves evidence that the specimens never came from Florida. It seems remarkable that one should give a positive locality for a species when such does not exist.

*Mutilla rutilans* and *thoracica* of Blake, and *M. peculiaris* Cresson, differ at once from the females of the other species of *Mutilla*, in having the thorax divided into two parts, whereas in *Mutilla* (including *Sphærophthalma* Blake) the thorax of the female is solidified at least on dorsal surface into one piece. *Mutilla rutilans* is either a new genus, or the female of *Brachycistis*, of which only males are known. I would refer it to *Brachycistis*, notwithstanding that the medial tibiæ are two-spurred, whereas in the male they are one-spurred. In *M. thoracica* we have the long-sought American representative of the female *Myrmosa*, which, in addition to the divided thorax, differs from *Mutilla* in having distinct ocelli. *M. peculiaris* is a *Chyphotes*, and has recently been redescribed as *Chyphotes mirabilis* by Mr. Cockerell.

The thorax of female, and armature of abdomen of male, permit the division of the Mutillidæ into two subfamilies, one having the thorax (♀) of one piece and male with abdomen supplied with two appendages at tip; these forms constitute what may be termed the Mutillinæ, of which there is but one vast genus, *Mutilla* (= *Ephuta*, *Sphærophthalma*, *Pseudomethoca*, *Photopsis*, s. s.). The remainder of our genera, *Myrmosa*, *Methoca*, *Chyphotes* and *Brachycistis*, constitute the second subfamily, in which the thorax is divided into two or more parts in the female, and the tip of male abdomen is supplied with a stout, up-curved spine or hook, or unarmed (*Myrmosa*). This latter subfamily I regard as analogous to the Thynnidæ, of which no North American representatives were heretofore supposed to exist.

These notes are preliminary to a revision of our Mutillidæ, in which the matter will be treated at greater length.



**Carphoxera ptelearia** Riley.—Herbarium Pest.

By VERNON L. KELLOGG, Stanford University, Calif.

Last November (1896) Prof. W. R. Dudley, of this university (Stanford), discovered that several papers of herbarium specimens in his collection were infested by small Geometrid larvæ and turned over to me a number of these papers. The plant specimens were in open cases and unpoisoned. This month (May) imagines have appeared from the papers revealing the pest to be *Carphoxera ptelearia* described by Riley ("Insect Life," 1891, vol. iv, p. 108) as the representative of a new genus of Geometrid moths, and referred to occasionally since.

From the papers given me by Prof. Dudley I have been able to get eggs, larvæ and imagines. All of the stages were described by Dr. Riley and need no further special mention. The duration of the larval period was not determined by Riley, but in his account it is stated that "larval life extends in some cases certainly over a period of three months." The larvæ, under my notice, were practically full sized when found, Nov. 6, 1896, but they did not pupate until April and May, 1897. Nor was this long period one of inaction. They moved about over the specimens in the papers feeding all through the Winter, though the feeding was far from voracious. How many weeks or months had elapsed between hatching and time of discovery of the larvæ cannot even be guessed at, but evidently the insect has a larval life of at least eight or nine months.

The results of the insect's presence in Prof. Dudley's herbarium are distinctly in evidence, and the pest will have to be reckoned with in western herbaria. Dr. Riley found the insects in the herbaria of the Department of Agriculture at Washington, but confined to plant specimens from Southern California and Arizona, except in one instance. The habit of *Carphoxera* of feeding on dry and dead vegetation is, as pointed out by Riley, almost unique among the Geometridæ, but one other instance of it, shown by a European species, being recorded. Dr. Riley suggests the probability that *Carphoxera* "normally feeds on the dead or dry plants of Mexico and adjacent arid regions, and that it has simply adapted itself to the somewhat similar conditions prevailing in herbaria."

The infested papers in Prof. Dudley's herbarium represent

many different species of plants, the Compositæ and Labiatae seeming to furnish specially acceptable food for the pest. No Eastern specimens were in the infested herbarium, so that no special confirmation of Dr. Riley's observation that only Western specimens are attacked is derivable from the condition of Prof. Dudley's herbarium.

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## ARACHNIDA FROM THE MALASPINA GLACIER, ALASKA.

By NATHAN BANKS.

### THERIDIDÆ.

#### *Erigone* sp.

One specimen (♀) not determinable from this sex.

### LYCOSIDÆ.

#### *Lycosa fumosa* Em.

Canadian Spiders 1894.

One specimen (♀) appears to be this species, but differs in having a distinct yellowish mark or interrupted band on all of the femora, and the anterior pair have another yellow mark on the outside near the tip. The epigynum is perhaps a little narrower than Emerton figures it; the eyes are as he describes them.

#### *Pardosa grœnlandica* Thor.

Spiders from Greenland 1872.

One specimen (♀) is close to the *L. sinistra* form described from Colorado.

### PHALAGIDÆ.

#### *Phlegmacera bryantii* n. sp.

Length 2.5 mm., femur IV 2.4 mm.—Blackish, abdomen rather paler, especially at the tip; clothed on the venter with stiff, erect, black bristles, those on coxæ and mandibles longer; palpi with short stiff hairs; cephalothorax smooth; eye-tubercle rather low, very broad, large eye each side; mandibles large; third joint of palpi nearly as long as width of the cephalothorax, cylindrical; fourth a little longer, of same size; fifth not half as long as fourth; clavate. Trochanters slightly tuberculate; (first and second pairs of legs lost), femur and tibia III with two false articulations, femur and tibia IV with five or six false articulations, numerous on metatarsi and tarsi, abdomen short, broadly rounded at tip.

One specimen (♀), July 4, 1897; collected by Mr. H. G. Bryant, in honor of whom the species is named. It differs from both of our known forms by its darker color, broader eye-tubercle, and false articulations in the posterior femora.

## NOTES AND DESCRIPTIONS OF NEW SYRPHIDÆ FROM MT. ST. ELIAS, ALASKA.

By CHAS. W. JOHNSON.

The following Syrphidæ were collected by Mr. H. G. Bryant during his explorations on Mt. St. Elias, in the Summer of 1897. By a strange coincidence the six specimens collected represented as many species, two of which are apparently new. Mr. M. D. Hunter, in his interesting paper ("Can. Ent.," June, 1897, page 121), reviews the Syrphidæ of Alaska, and records twenty species; the following increases the number to twenty-three:

**Syrphus protritrus** Osten Sacken.

Great Malaspina Glacier, Mt. St. Elias, June 22. Described from California. Collected by Prof. L. L. Dyche near Cook's Inlet (Hunter).

**Syrphus umbellatarum** Schiner.

Great Malaspina Glacier, Mt. St. Elias, June 16. "In snow, altitude 1300 feet." Also collected by Prof. Dyche. White Mountains, N. H. (Osten Sacken).

**Syrphus geniculatus** Macquart.

Great Malaspina Glacier, Mt. St. Elias, June 22. Not before recorded from Alaska. Newfoundland (Macq.). White Mountains, N. H. (Osten Sacken).

**Syrphus bryantii** n. sp. ♀.

Length 7.5 mm. Eyes minutely pilose, front dark greenish, shining, with an arch of black above the antennæ, vertex black, shining, both front and vertex sparsely covered with black hairs, face of a uniform bright yellow, shining, with a few minute black hairs on the sides, tubercle very prominent, cheeks slightly extending upward along the facial orbits and the entire oval margin black, shining; occiput greenish black with yellow pile, mouth-parts unusually large, antennæ black, lower edge of the third joint brownish black, base entirely surrounded by yellow. Thorax and pleuræ greenish black with long yellowish pile; scutellum bright yellow, lateral angles black. Halteres yellow. Abdomen deep black, pile on the first, second and third segments yellow, on the fourth and fifth black, longest on the sides of the first and second, the bright yellow cross bands the same as *Syrphus umbellatarum*; venter yellow with obsolete blackish markings on the posterior edge of the third and fourth segments. Legs yellowish, basal half of the anterior and middle femora and the tarsi black, posterior femora (except the apical third), a medial band on the tibiæ, and the tarsi black. Wings with a slight brownish tinge, stigma brown.

Great Melaspina Glacier, Mt. St. Elias, June 16, 1897. "In snow, altitude 1300 feet." Respectfully dedicated to its discoverer, Mr. H. G. Bryant, of Philadelphia.

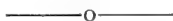
**Platychirus peltatus** Meigen.

Great Malaspina Glacier, Mt. St. Elias, June 22; Sitka (Loew). A widely distributed species, Northern Europe, White Mountains, N. H., New York, Pennsylvania, Colorado.

**Melanostoma glacialis** n. sp. ♂.

Length 6 mm. Face greenish, shining, uniformly and densely covered (except the tubercle) with a grayish pollen. Tubercle prominent, black, shining, frontal and vertical triangle, black, with long blackish pile; occiput with grayish pile, antennæ entirely black, mouth parts brown. Thorax dull black, with large black pile somewhat brownish on the anterior portion; scutellum an obscure yellow, stained with brown, which becomes black at the lateral angles, pile long, black. Abdomen narrowly ovate, black; opaque, with prominent grayish pile, longest on the sides, hind border of the fourth and the fifth segment shining, near the middle of the second segment on each side is a small round yellow spot, third and fourth segments with a large ovate, yellow marking at the anterior angles, reaching the lateral margins, those on the fourth somewhat smaller than those on the third, posterior margin of the fourth narrowly margined with yellow. Legs black, apical portion of the femora and the base of the tibiæ of the anterior and middle legs yellowish. Wings hyaline, with a slightly grayish tinge, stigma an obsolete yellow.

Great Malaspina Glacier, Mt. St. Elias, June 22. Resembling *M. cærulescens* Will. in abdominal markings but readily separated by the opaque black ground color.



**UTAH REVISITED; WYOMING AND MONTANA.**—Part II.

By Prof. A. J. SNYDER.

From Ogden, Utah, northward, no stops were made until we reached Beaver Canon, Idaho, or, as the place is now known, "Beaver." From this place some tourists travel northeast by wagon to Yellowstone Park.

The country in the near vicinity reminded me of the rolling land of South Dakota, but the hills are larger and one need not travel far to find the country mountainous.

The Wood Bro's sheep ranch has a station some six miles out, to which one of their men invited us.

I have seen few places more productive of butterfly life. It was almost impossible to advance for there were hundreds of

insects of many varieties all about us—Argynnid, Pamphilas, Lycænas, Satyrids, Cœnonympas, etc. Most of the species, however, were the same as those common to Utah. Soon, however, the ground became higher and on crossing one of the high knolls a gray butterfly sprang up, almost resembling a grasshopper in its quick motions. It darted about and then dropped into the grass. Others of the same kind were soon started and after some careful maneuvering my first *Hipparchia ridingsii* was safely landed in the cyanide jar. On these grassy round-topped hills many of this species were found, but the sport much resembled jack-snipe hunting, and I longed for a gun and some harmless kind of ammunition with which to pepper the wily insects; *ridingsii* often lights on bare spots of ground, but the gray color of its wings blends so well with the soil and dry grass that it is very hard to see. Its habit of folding the primaries within the secondaries and occupying the smallest possible place and even tumbling over on one side so as to almost lie flat on the surface, resembles *C. chryxus*. Like that species, also, it not infrequently alights on bare rocks. This species was not seen elsewhere until, on the road from Livingston to Yellowstone Park, one darted up in front of my horse only to alight in the dust and formed so tempting a prize that I dismounted and captured it.

Soon we came to a deep, well-wooded gully, probably one-quarter mile in width, and, while crossing this, a little brownish black insect started up from a small grassy glade, and after a rapid chase over logs and brush the first specimen of *Cœnonympa haydenii* was being examined.

While dinner was preparing, a little search near camp resulted in the capture of several more *haydenii*. After dinner, with our friends, the ranchers, we collected on the higher ground back of camp and secured a number of fine insects. Argynnids were probably most abundant, and the most common species was *eurynome*. A few *leto* were taken and examples of several other species or varieties.

During the afternoon we worked our way back to Beaver, collecting *en route*, and on passing their metropolis again spent some time with the *Hipparchias*.

Mr. Wood and his men urged us to make our home at their camp while in the vicinity. Never has it been my fortune to be more generously entertained or made so welcome among strangers

as was our visit to these gentlemen whose life is one of hardship in a sparsely settled region. Only three days were spent in this vicinity, but enough to convince us that collectors might spend a longer time there to the great advantage of their cabinets.

After leaving Beaver, our next stop was Butte, one of the greatest if not the greatest of the mining camps in the United States. This great city is as barren as the crater of a great volcano, without a sign of vegetation—neither living tree nor blade of grass. Butte is no place for an entomologist, and that night we started eastward—bound for Yellowstone Park.

In our opinion, the proper way to see "The Wonderland of America" is to go there with an independent "outfit." To see the most and succeed best, especially from a collector's standpoint, one should have saddle ponies and be able to follow the various remarkable trails where it is impossible to take wagons. Almost any kind of an outfit may be secured at Livingston or Bozeman, and from the former the distance to the Park is only fifty-three miles.

After hiring three ponies (two saddle and one pack animal) we were ready for butterflies or scenery and soon found both.

News of sickness at home, unfortunately, shortened our trip and prevented our doing full justice to either the insects or sights.

Along the road to the Park, *Cleome integrifolia* was abundant, and on the flowers were numerous *Pamphilas*—*uncas* being the most common species. In a meadow we found many of the common *Satyrus*, var. *olympus*. Grass and flowers are plentiful in the Park, as are also the butterflies; although we saw many species common to the Rocky Mountains region, no remarkable captures were made until we entered Hayden Valley, Aug. 1st. A storm had just passed. Suddenly the sun shone out brightly and butterflies were everywhere. We immediately dismounted, and although both our nets had been ruined by accidents we spent a most interesting hour in the wet grass collecting with a piece of a net. *C. haydenii* and *E. epipsodea* were everywhere about us. *Cænonymphas* were common and a few *Argynnids* were seen. A single *Erebia sofia* was taken here—the only one seen during the trip. While busy capturing insects a small herd of elk walked out of the timber not far away and watched us with curious eyes, alternately feeding and stopping to view us

until our mounting frightened them back into the forest. We longed for weeks in this beautiful valley but it could not be.

Even in the geyser region we found butterflies, and several were captured near the Riverside Geyser while waiting for an eruption. Several *Chrysophanus mariposa* were taken in the Upper Geyser Basin. *Argynnis helena* was found flitting along the road alighting in moist places in the neighborhood of the lower falls of the Yellowstone. A single *Euptæeta claudia* was taken beside the road. Two *Chionobas jutta* and a single *Melitæa edita* were also captured. *Thecla sœpium* was common near Mammoth Hot Springs.

Although we ascended no high mountains, *Chionobas chryxus* was seen several times. *Satyryrus charon* was abundant. Several *Argynnis monticola* and a pair of what seems to be the var. *purpurascens*, Hy. Edw. fell to our lot. A few *Argynnis eurynome* were taken.

In conclusion, the author wishes to record an opinion:—My observations lead me to believe that *eurynome*, *artonis* and *arge*\* form a single species, and absolutely intergrade. I have captured about 800 *eurynome* and have studied specimens from Utah and British America, also some of the intermediate points (Yellowstone Park and Idaho). Of the unsilvered form called *artonis*, I have captured over 150 examples. These two forms I have taken in coitu ♂ *artonis* and ♀ *eurynome*; and ♀ *artonis* and ♂ *eurynome*. I have seen specimens only partially silvered and resembling both *artonis* and *eurynome*. In my collection are specimens of *arge* ♂ from Oregon which seem to correspond exactly with Mr. Strecker's description of this variety, and I have males from Utah which are certainly *arge*, and others which intergrade into the typical *eurynome*. I have never seen a ♀ which positively belonged to the var. *arge*, but have noted a decided variation in the females of the so-called *eurynome*. If these so-called species naturally interbreed, and if all the intergrades have been found as I have proved, it only remains to determine positively the result of this interbreeding and the question is absolutely solved.

Mr. FREDERICK KNAB reports the capture of *Anisolabis maritima* at Bridgeport, Conn.

\* To these may be added, in all probability, *macaria*, *clio*, *opis* and *bischoffi*.—ED.

**RECOLLECTIONS OF OLD COLLECTING GROUNDS.****II.—THE LOWER RIO GRANDE VALLEY.**

By H. F. WICKHAM, Iowa City, Iowa.

The region about Brownsville, Texas, is one of great interest, but only lately has it been explored entomologically with any degree of care. Within the past two years, however, the country has been visited and worked by Prof. Townsend, Mr. Schwarz and the writer.\* Its most striking feature is perhaps to be found in the little jungles or "oases" of tropical vegetation, supporting corresponding insect faunæ, these small areas being compassed around by the ordinary flora and fauna of southern Texas.

It is by no means ready of access, since a visit implies either a long trip by steamer from New Orleans or Morgan City, or a cross-country stage ride of some 160 miles from Alice. The latter has the advantage of convenience since the stages are run daily, while the steamer dates are about ten days apart.

The writer made the trip by stage, reaching Brownsville on the evening of June 20th. A heavy rain had laid the dust and refreshed the country so that the broad prairies which alternate with patches of chaparral were gorgeous with many blossoms. But little time was had for collecting along the road, the thirty-six hours of travel consumed in covering the distance being broken only by such short stops as were necessary to change horses and to eat a hasty lunch. Nevertheless, a few observations were made. *Cicindela rectilatera* abounded in swarms near rain puddles; *Canthon lævis* was busily rolling balls about in sandy spots. In the mesquite scrub might now and then be seen a fine specimen of a great black Longhorn, *Stenaspis solitaria*; these, however, disappearing before reaching El Sawz. A short stop at Santa Gertrudes, the first relay station out of Alice, was the occasion of some rejoicing over the capture of a fine example of *Eleodes ventricosa*, one of the largest species of the genus, remarkable for its obese form and shining surface.

No towns are passed through en route, the road running across great ranches thousands of acres in extent. An occasional Mexican hut is about the only sign of human habitation, except at the small settlement of El Sawz and Arroyo. Arrived, finally,

\* Cf. Proc. Ent. Soc. Wash. iv, p. 2; Trans. Texas Acad. of Sci., 1895; and Bull. Nat. Hist. State Univ. of Iowa, iv, pp. 96 et seq.



at the journey's end it was a pleasure to meet a fellow-entomologist in the person of Prof. C. H. Tyler Townsend, who had already been in the field for some months. His aid in securing accommodations and readily given information as to the collecting grounds were of material advantage and greatly appreciated. He had already located many of the little tropical oases—if we may give them that name—and had made large and interesting collections in the interests of the Division of Entomology at Washington.

As a result of the explorations carried on, many species not hitherto recognized as inhabitants of the United States must be added to our lists. A few of these may be mentioned here, the remainder will be referred to in the author's report on the Coleoptera of this valley.\*

A number of Cicindelidæ were met with, the most interesting of which occurred at Point Isabel along the extensive beaches and salt mud-flats in that neighborhood. *C. severa*, *togata*, *circumpicta* and *pamphila* all inhabit this little strip of sea-coast in company with some more familiar forms. *C. pamphila* is remarkable, from the fact that the elytra exhibit much the same range of variation in ground color as that displayed by the better known *C. sperata*.

Among the Carabidæ, mention should be made of the occurrence of *Calosoma aurocinctum* Chaud., a species resembling our common *scrutator*, but a little smaller and of a brighter clearer green with less pronounced elytral striæ and broader, flatter interspaces. It is a Mexican form and will probably not be found much to the north of Brownville. A large colony of the hitherto very rare *Pogonus texanus* was exposed on turning over a palmetto log lying on a broad mud flat at the Point. A number disappeared at once into seams opened by the sun, but quite a supply was secured. In heavy thickets where the vines made their closest tangles, *Agra oblongopunctata* Chev. was occasionally beaten from some thick mass of foliage. It is an *outré* looking insect of slender form, the prothorax elongate, nearly conical, the narrow elytra deeply punctured in rows. The original locality was Vera Cruz, Mexico. *Micragra ænea* is another hitherto extra limital species ranging through Central America to Brazil. It is a small greenish or black-bronzed insect, something like

\* Now publishing in the "Bulletin of Natural History," State University of Iowa.

*Metabletus* in form, occurring on vines. Several specimens of a new Lebiide (*Euproctus texanus* Wickham) were obtained, chiefly in sweepings or by beating. *Callida punctulata* Chaud., was beaten from jungles in company with *C. planulata* and *Pinacodera punctigera*. A single specimen of *Anatrichis oblonga* was found on the river bank. This has hitherto been represented by a single example.



### An Egg Parasite of *Smerinthus astylus* Drury.

By WILLIAM H. ASHMEAD.

Assistant Curator, Department of Insects, U. S. Nat. Mus., Washington, D. C.

I have recently received, for identification, from Mr. R. F. Pearsall, of Brooklyn, N. Y., three specimens of a beautiful little chalcid, reared from the eggs of *Smerinthus astylus* Drury.

This chalcid proved to belong to the subfamily Eupelminæ, in Motschulsky's genus *Anastatus* (= *Antigaster* Walsh) and to be quite different from the several other species described in our fauna. I have, therefore, named it in honor of the discoverer and submit the following description :

***Anastatus pearsalli*** sp. n. ♀.—Length 2.5 mm. Blue-green; the scutellum, middle lobe and the elevated lateral lobes of the mesonotum and the face, including the frons, bronze-green; scape, lobe in front of tegulæ, apex of pronotum and the legs, with the exceptions to be noted, ferruginous; anterior and hind coxæ metallic-blue; anterior femora and tibiæ, except knees and hind legs, except tarsal joints 2 to 3, which are yellowish white, dark brown or fuscous; the middle tibiæ and the tarsal joints 1, 2 and 5 brownish; front wings fuscous, with the basal one-third and two triangular spots opposite each other, the points of which almost meet and form a band just beneath the marginal vein, whitish hyaline; abdomen blue-black, with a white band at apex of first abdominal segment.

*Hab.*—Brooklyn, N. Y.

Described from three female specimens, bred Aug. 20, 1897, from eggs of *Smerinthus astylus* Drury, by Mr. R. F. Pearsall.

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IN THE ENTOMOLOGICAL SECTION. Professor.—“What has become of Bugs? Wasn't he studying with the class last year?”

“Ah, yes; Bugs—poor fellow—a fine student, but absent minded in the use of benzine in cleaning specimens—very. That discoloration on the ceiling—notice it?”

“Yes.”

“That's Bugs.”

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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PHILADELPHIA, PA., JANUARY, 1898.

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### A LETTER TO THE NEWS.

"I suppose I am one of a fairly numerous class who make the collection of insects a pastime and not a very serious study—'mere collectors' I suppose we should be called. Nevertheless, what we see we know, and if we never get far beyond the entomological A B C it is not so much because we do not care to, as it is because business and other cares which 'will not down' are too tyrannical. All we know must come from observation, and we haven't much time for that—the literature of our hobby is scarce and expensive, and over our heads as well.

"What we want in a periodical is the relation of the experiences of others of our class. If some fellow has a 'sugar' which he finds attracts more *Catocalæ* than any other he has tried we'd like to know his recipe. We'd like to hear of another's experiences in rearing the more common species—perhaps the successful method of one will show another how he failed. We want to read of various methods of preserving pupæ over Winter. We would like descriptions of the perfect insect in cases where species differ enough from each other to make a written description of any value, and we want these things not once in a while, but every month. If we 'mere collectors' could have two pages a month devoted to us we would gladly take our chances on getting something of value out of the rest of the issue. Of course you can't bother to edit and publish a paper

for the benefit of one or two individuals; but it seems to me that if you will publish something each month that may be of interest to the merest tyro, you might enlarge your sphere of usefulness and add to the income of the NEWS"—W. R. H.

We are perfectly willing to adopt the suggestions of our correspondent; in fact such has long been our desire and we have made every effort to get just such communications. We even went so far as to send out printed circulars soliciting articles of the kind mentioned—but they came not. It can't be expected that the editors should write such articles each month as they also have matters to attend to that wont "down" and the time they devote to the journal is stolen from their own work. Now, W. R. H. we believe belongs to a large class of our subscribers and we turn the matter over to them to remedy, and await the result with much interest.

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ON November 4th, after a day's collecting, I had occasion to walk along the Erie Railroad track at Woodside, N. J., on my way home. I saw several larvæ of *Spilosoma isabella* crawling along on the inside of the iron rail, evidently looking for a place to cross over the track. I thought nothing of it until I saw some larva of *Arctia arge* which I took, and from that time on I kept my eyes on the rails. At a rough guess I must have passed at least 200 larvæ during the walk of about a half of a mile. *S. isabella* were the most numerous. I took the following: fifteen *Arctia arge*? four *Arctia nais*, three *Spilosoma rubricosa* and three different specimens of *Agrotis*. I had occasion to pass along the same place again a week later but did not see a sign of a larva.—A. J. WEIDT, Newark, N. J.

*Philanthus punctatus* var. *cockerelli* Dunning, ENT. NEWS, 1896, p. 69.—Mr. Dunning gives no locality for this variety; the type specimens cited were from Las Cruces, New Mex., August 24 and September 3, the latter on flowers of *Solidago canadensis*. I have been comparing our *Mesilla* Valley *punctatus* (which frequents the flowers of *Chilopsis* and *Sisymbrium* as well as *Solidago*, and appears as early as April 16) with specimens of typical *punctatus* taken by Mr. Robert Knetsch at Terra Cotta, Ill., and I find that our insect (var. *cockerelli*) constantly differs by the pale markings (light yellow to white), almost clear wings (with, however, a dusky apex), narrower head in the ♂, and eyes closer together at the top in both sexes. It seems to be a good subspecies at least, but Mr. Dunning's diagnosis should be modified to include all our specimens—T. D. A. COCKERELL.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

A PICTURE for the album of the American Entomological Society has been received from Andrew Bolter.

AN ant which Sir John Lubbock, the English naturalist, has kept for observation many years died recently, whereupon the "Indian Mirror" published an obituary notice of his aunt.

IN the collection of the late Dr. Geo. H. Horn there was a specimen of the large moth (*Pseudosphynx tetrio* Linn.) which bore the following label: "Large moth reached ship 'Earnmoor' Saturday, Feb. 11th, 1888, at sea about two hundred miles from shore."—HENRY SKINNER.

WHEREAS, we have learned with infinite sorrow and regret of the death of Dr. George H. Horn, of Philadelphia.

*Resolved*, By the Newark Entomological Society, in special meeting, November 28, that Entomological Science, particularly in Coleoptera, has sustained a most serious loss, that the Society has lost a well-wisher, and many of its members a personal friend.

*Resolved*, Also that this expression of our sorrow be spread upon the minutes of the Society, that a copy be sent to ENTOMOLOGICAL NEWS for publication, and that another copy be sent to the personal representatives of the deceased.

(Signed)

JOHN ANGELMAN,  
ED. A. BISCHOFF, } *Committee.*  
JOHN B. SMITH,

NOTE ON AGAPOSTEMON TEXANUS.—Mr. Robertson, in his recent excellent account of the common species of *Agapostemon*, gives to *texanus* a very wide range—from the Atlantic to the Pacific. It seems desirable to ask how uniform it is throughout this territory. I have before me six examples from Washington State (one from Olympia, June 29; five from Pasco, May 25), all collected by Mr. T. Kincaid; and while they agree with *texanus* in almost every particular (including the punctures of the mesothorax), they are very easily separated from typical *texanus* (as found in New Mexico) by the much more finely sculptured base of the metathorax. The radiating wrinkles, which in true *texanus* are very large and distinct, are much smaller, more numerous, and less separated from one another. There is even a feebly indicated triangular enclosure. As the difference indicated is quite constant in a series, I propose to call the Washington form *A. subtilior* n. sp. or subsp. Mr. Kincaid sent with the *A. subtilior* eighteen examples of *A. radiatus*, all from Pasco. Mr. Robertson gives that species as west to Dakota only. The Pasco examples are larger and bluer than the Illinois form of *radiatus*.—T. D. A. COCKERELL, Mesilla, New Mex.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms.

**4.** The Canadian Entomologist, London, Ont., Dec., '97.—**5.** Psyche, Cambridge, Mass., Dec., '97.—**10.** Nature, London, '97.—**21.** The Entomologist's Record, London, Nov. 15, '97.—**22.** Zoologischer Anzeiger, Leipsic, No. 543, Oct. 21, '97.—**24.** Berliner Entomologische Zeitschrift, xlii, 1 and 2, Nov., '97.—**35.** Annales de la Société Entomologique de Belgique, xl, 9, Brussels, Nov. 15, '97.—**47.** The Zoologist, London, Nov. 15, '97.—**48.** The International Journal of Microscopy and Natural Science (3), viii, 36. London, Oct., '97.—**49.** Termesztudományi Füzetek, xx, 4. Budapest, Nov. 1, '97.

**The General Subject.**—Bethe, A. Comparative researches on the functions of the central nervous system of Arthropods, 1 pl., Pflüger's Archiv für Physiologie, lxxviii, 10-12. Bonn, Oct. 29, '97.—Biro, L. Biological observations in New Guinea, **24.**—Cockerell, T. D. A. A curious case of protective coloration, **5.**—Heymons, R. Remarks on Verhoeff's views on the abdominal appendages of insects, **22.**—Poulton, E. B. Mimicry in butterflies and moths, **10**, Nov. 4, 11.—Raffray, A. Occurrence of blind insects in South Africa. Transactions, South African Philosophical Society, ix, 1. Cape Town, 1897.—St. George, v. la Valette. On sperm- and egg-formation in the silkworm (*Bombyx mori*), 3 pls. Archiv für mikroskopische Anatomie, L, 4: Bonn, Nov. 15, '97.—Suffert, E. Effect of the blood monad (*Bacillus prodigiosus*) on insects, **24**, Sitzungsberichte.—V. Insects and flowers, Revue Scientifique, Paris, Nov. 6, '97.

**Economic Entomology.**—Anon. *Asclepias curassavica* as an insectifuge, Bulletin of Miscellaneous Information, Royal Gardens, Kew, No. 130, Oct., '97.—Anon. Useful insect products, **10**, Dec. 2.—Chapais, J. C. Some insects to be combatted, Naturaliste Canadien, xxiv, 10. Chicoutimi, Queb.—Coutagne, G. Summary report on the work done at the Sericulture Station of Rousset-en-Provence in 1896-97. Bulletin Société Nationale d'Acclimatation de France, Paris, Oct., '97.—Deprez, V. Principal insects injurious to tobacco of the Semois, figs., **35.**—Dubois, L. On a bacterium pathogenic for the Phylloxera and for certain Acarines, Comptes Rendus, L'Académie des Sciences, Paris, Nov. 15, '97.—Fletcher, J. Evidence before the Select Standing Committee of the House of Commons on Agriculture and Colonization Session of 1897. Printed by order of Parliament [Ottawa, Can.]; Re-

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## Doings of Societies.

A regular stated meeting of the Entomological Section of the Academy of Natural Sciences was held November 18th. Mr. E. T. Cresson presiding. Mr. Herman Hornig presented two imagos, one chrysalis and two larvæ of *Boletotherus bifurcus*. Mr. Philip Laurent exhibited some fine photographs showing the destructive work of ants in chestnut and cherry wood. Mr. Robert Reif was elected an Associate.

The following gentlemen were nominated for officers for the new year :

*Director*, George H. Horn.

*Vice-Director*, C. S. Welles.

*Treasurer*, E. T. Cresson.

*Conservator*, } Henry Skinner.

*Recorder*, }

*Secretary*, W. J. Fox.

*Publication Committee*, { C. W. Johnson,

{ J. H. Ridings.

HENRY SKINNER, M.D.,

*Recorder.*

A business meeting of the American Entomological Society was held November 18th. Nominations of officers were made for the year 1898.

HENRY SKINNER, *Secretary pro tem.*

PHILADELPHIA, Dec. 14, 1897.—A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H.

W. Wenzel, 1509 S. 13th Street. Meeting called to order at 9 P. M., Vice-president Castle in the chair. Minutes of the previous meeting read and approved.

The chairman announced to the members the death of one of the Social's honorary members, Dr. George H. Horn, which occurred on Nov. 24, 1897, upon which the following resolution was presented: "The Feldman Collecting Social having learned of the death of Dr. George H. Horn, one of its honorary members, be it

*Resolved*, That it is the sense of this meeting that science has thereby lost one of its brightest lights and American Coleopterology its foremost savant, and

*Resolved*, That we herewith express our deep sorrow at the loss of our friend and fellow member, whose death leaves an irreparable gap in the science of Entomology.

Mr. H. W. Wenzel read a communication from Mr. Ottomar Reinecke, of Buffalo, N. Y., dated Dec. 11, 1897, in which he states he has forwarded for presentation to each Coleopterist of the Social a set of four specimens of *Glycobius speciosus*, each being accompanied by a picture of himself.

Mr. Fox read some notes on Mutillidæ, which will be published in full in the NEWS.

Mr. H. W. Wenzel mentioned that, on November 20th, his two sons, Harry and Elmer, had captured in the Philadelphia Neck *Lebia abdominalis* in numbers, the species not having been taken before in this locality; also stating that on the same date *Microhapla porcata* was taken: a great variety of species being found as the weather was very mild at the time.

It was moved by Mr. Fox that Mr. Wenzel be requested to convey the thanks of the Social to Mr. Ottomar Reinecke for his generous remembrance of the Coleopterists of the Social. —

No further business being presented the Social adjourned to the annex at 10.10 P. M.

THEO. H. SCHMITZ, *Secretary*.

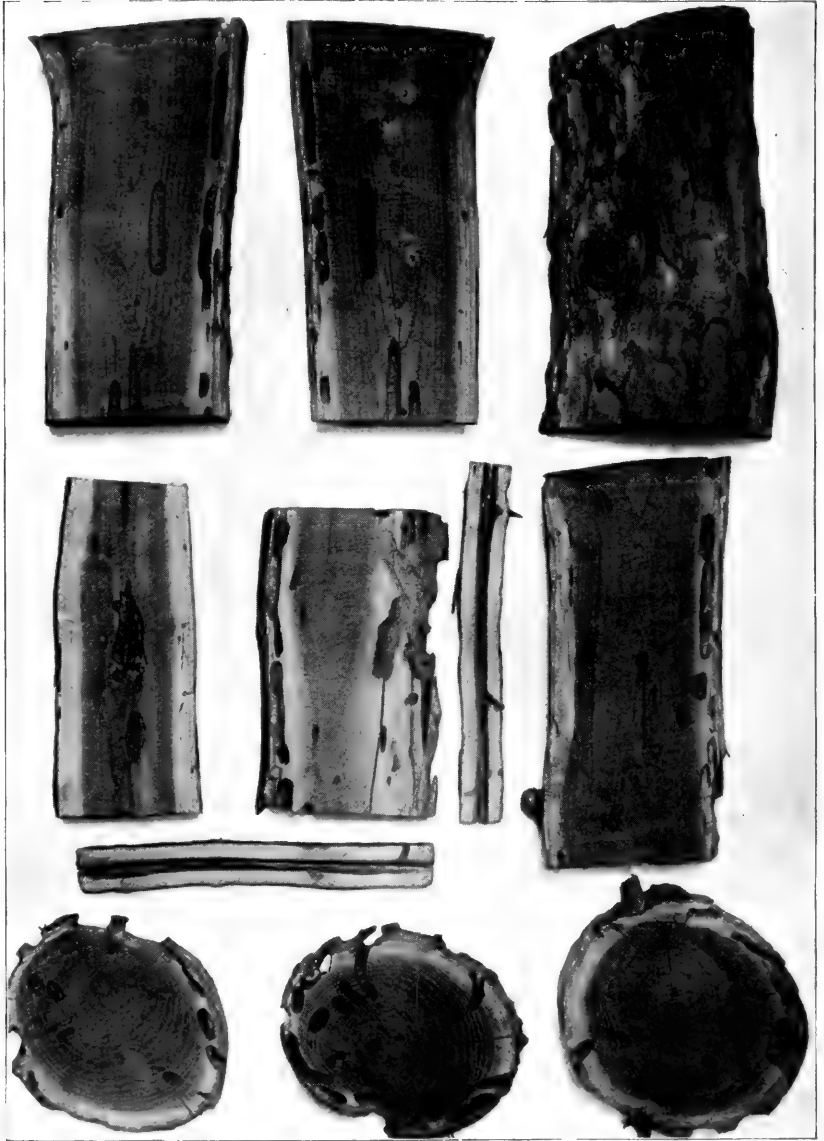
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## OBITUARY.

WILLIAM GREY, gardener to the late Hon. Erastus Corning, [died at his home, Corning Farm, Albany, N. Y., Nov. 25th last, 69 years of age; deceased was a well-known collector of Lepidoptera for many years and leaves his collection of many thousand specimens to his son Robert, who is also interested in the same field.

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OSAGE ORANGE INJURED BY WOOD BORERS.

# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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No. 2,

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### OSAGE ORANGE INJURED BY WOOD BORERS.

By PHILIP LAURENT.

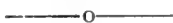
In the suburban parts of Philadelphia the Osage Orange is extensively used in forming hedges around fields and gardens, and for this purpose it excels all other plants, as aside from its fine appearance it forms an almost impregnable barrier against trespassers.

It was on July 4, 1895, that I first had my attention called to the number of *Dorcaschema wildii* and *alternatum* that were infesting a certain hedge near my home at Mt. Airy. In the course of an hour's time, with the aid of my friend, Mr. Horace Rodd, I secured seventy-five *wildii* and about twice that number of *alternatum*. During the following Winter I secured from this hedge—which was about one hundred yards in length—two sections from the limb of a tree, each section being about four feet in length and from three to five inches in diameter (see Plate II). On arriving home I cut the sections into smaller ones and placed them in the breeding cage. The first beetles made their appearance on June 18, and from that time until the middle of July they continued to emerge. Nearly all the specimens proved to be *alternatum*, only one or two *wildii* making their appearance. Two specimens of *Neoclytus erythrocephalus* also emerged. In all thirty-eight specimens emerged.

Prof. Riley, in the "American Entomologist," vol. iii, p. 270, states that the larvæ of *wildii* and *alternatum* no doubt feed in the roots of the plant. I admit, not without a doubt, however, that this may be true as far as the larvæ of *wildii* is concerned, but it will not apply to the closely allied species *alternatum*, as my observations go to show.

Miss Mary E. Murtfeldt, in "Insect Life," vol. v, p. 155, states that the larvæ of *wildii* bore the older wood of the tree, and I am very much inclined to accept this statement as being correct, for if we examine the trunks of the trees in an old hedge we will often find them to contain many large borings, such as we would suppose the larvæ of *wildii* would make. Messrs. Webster and Mally, of Ohio, have reared *Cyllene pictus* from the Osage Orange (see Bulletin No. 9, New Series. U. S. Department of Agriculture), but as yet this beetle has not been found on the Osage Orange around Philadelphia; furthermore, in my experience, *Cyllene pictus* only attacks the dead or dying trees. I therefore think it more than likely that the large borings observed in the trunks of live Osage Orange trees are made by the larvæ of *Dorcaschema wildii*.

The specimens figured in the plate were cut from the sections mentioned in the fore part of this article.



### INTERESTING COLLECTING NEAR HOME.

By R. R. ROWLEY, Louisiana, Mo.

It is gratifying, this hot weather, to have one's collecting ground not far from the front door. There is a little enclosure of two or three acres just across the street and when I tire of other employment I scale the fence and wade into the weedy jungle. There are patches of *Croton capitatum* here and there, and I come away laden with eggs, larvæ and pupæ of *Anæa andria*. In the past three weeks I have collected over two hundred well-grown larvæ of this butterfly. True, some have died, but I have already ten imagoes, besides the fifty-five pupæ hanging in my boxes and nearly a hundred larvæ still feeding. This is a most hardy insect, well protected from its enemies in all its stages by mimicry, and rarely affected by parasites. Some grown "worms," when ready to suspend, turn black and hang,

head down, a putrid mass. Some pupæ are deformed, but not more than one finds in nature. Like the larvæ, putrid pupæ occur, but they are few in number. The natural enemies of *andria* may attack it in the egg, but the loss even here is small in my experience.

In the three weeks' collecting in this pasture I have yet to see the first imago flitting about the plants. In fact, I haven't seen a single butterfly of this species inside the inclosure, save a few specimens just escaped from the pupæ. It takes over twenty-four hours to pupate after the larva of *andria* suspends. A short time after suspension the caterpillar has almost converted itself into a circle, the head nearly touching the extremity of the abdomen.

About three-quarters of an hour prior to pupation the suspended larva begins a slight motion that is mostly perceptible near the head and is up and down, with but little lateral movement. The extremity of the abdomen becomes whitish and there is a slight slipping forward of the newly formed pupa within. On each side of the second thoracic segment of the larva at this stage is a large, oblong dirty colored blister, but what purpose these serve is unknown to the writer. As the motions of the larva continue the skin may be seen to be loosening and the pupa within alternately expanding and relaxing in the effort to burst the larval skin. The splitting begins on the dorsal side of the second segment and extends forward and backward as the anterior part of the pupa is forced out. The weight of the pupa and its motions soon free it from the larval skin. Just as the slit in the skin begins the larva straightens itself out. The ventral side of the skin not tearing retards motion on that side so that the ventral creases of the pupa are able to hold on to the old larval skin till the cremaster is free and finally well fastened to the white silk button above. It is interesting to see the pupa in the act of attaching itself to the silk button. It requires great muscular exertion, and if at first he doesn't succeed he tries again and again. After the hooks are fast a vigorous circular movement of the pupa knocks the larval skin down, and motion, except an up and down one to shorten the chrysalis, ceases. The hardening and coloring processes require some hours longer.

In general outline, the larva of *andria* reminds one somewhat of *Eudamus*. Its chrysalis, though much smaller, is not

unlike that of *Archippus*. The imago is the dead-leaf butterfly of North America and with its wings erect defies detection, as the pupa, under its shelter of green leaves, escapes the notice of its enemies. The young larva of *andria*, with its perch made of excretory matter, allies the insect to *Limenitis disippus*, while its case-making gives it a kinship to the *Papilios*.

The seed of *Croton capitatum* is a hemispheric nut and furnishes food for a small black weevil, a slender, long-snouted fellow, that doubles himself all up like a possum when you disturb him. I have taken numbers of these small beetles in the early morning on the fruit heads, but hidden in the abandoned leaf cases as the day grows warmer.

Just inside a neighbor's fence is a small bunch of milkweed, and this has furnished a score of *Danaïs archippus* larvæ. From the pupæ of a number of these, maggots of a dipter escaped by "glue" threads to the bottom of the box where they pupated and later emerged as flies.

One *archippus* pupa fell, as it was "born" without a cremaster. The posterior extremity of this pupa was well formed, a smooth black dot taking the place of the anchor. This peculiarity of structure was probably due to the diseased condition of the larva.

Over on the hill, a few hundred yards away, are walnut trees that furnish larvæ of *luna* and *juglandis*, while from the papaw bushes, on the side, I have taken the caterpillars of *Papilio ajax* and the hawk *Dolba hylæus*.

To the south, a quarter of a mile, is Noix Creek bottom, and there numbers of *Terias lisa*, *Nathalis iole* and *Callidryas eubule* are found sipping at mud or flitting about the low weeds at mid-day. On the iron-weed blossoms are the *Papilios*: *creosphontes*, *turnus*, *troilus*, *philenor* and *ajax*, while along the dusty road is *Junonia cænia* flies.

A rare butterfly in this county is *Melitæa phæton*, but a single specimen having been taken here, so far as I know. On the Hinkston Creek, in Boone County, early last June, I found this butterfly fairly common.

Mr. Dodge reports a single specimen each of *Terias mexicana* and *Feniseca tarquinius* from near Louisiana.

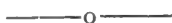
Along the C. A. & St. L. R. R. track, halfway between the creek and home, the low willow bushes have given me thirteen fine larvæ of the Sphinx, *Smerinthus geminatus* and many young



caterpillars of *Limenitis disippus*, while from the trailing wild grape vines I have obtained a dozen magnificent *achemon* "worms."

The full grown larva of *Philampelus* retires to the stem of the plant after feeding at night and may be found by lifting up the vine.

The larva of *ajax*, feeding on the big leaves of the papaw, makes no retreat for itself, but rests on the underside of the foliage. The caterpillar of *troilus* is always to be found on the upperside of the leaf of sassafras in a silken case made by drawing the edges of the leaf together. The habits of *turnus* are similar to those of *troilus*. The full grown larvæ of *creosphontes* are to be found on the body of the bush, near the ground, feeding wholly at night, perhaps. I have taken the latter on the hop tree and prickly ash.



## SYNOPSIS OF THE ASILID GENUS OSPRIOCERUS.

By D. W. Coquillett, Washington, D. C.

The following table contains all the species of *Ospriocerus* known to occur in this country north of Mexico. *Rhadamanthus* Loew and *minos* O. S. are unknown to me in nature; *æcides* Loew is a synonym of *abdominalis* Say. The latter name is not preoccupied in this genus, and there is, therefore, no necessity for replacing it with *æacus*, proposed by Wiedemann.

- |  |                           |
|--|---------------------------|
| 1. Abdomen largely yellow . . . . .  | 2.                        |
| Abdomen wholly black . . . . .   | <b>minos</b> O. S.        |
| 2. Venter of abdomen wholly black . . . . .  | 3.                        |
| Venter largely yellow; black, the entire abdomen except the first segment, base of the second and the genitalia, yellow; in the female the apex and sometimes the underside of the last segment is black; pulvilli and bases of tarsal claws yellowish, all hairs and bristles black except the short hairs of the abdomen, which are chiefly yellow; wings blackish, with a strong purplish reflection; length 20 to 23 mm. Arizona. Three males and two females. |                           |
|  | <b>ventralis</b> n. sp.   |
| 3. Sides of abdomen destitute of a row of black spots . . . . .  | 4.                        |
| Sides of abdomen each marked with such a row   | <b>rhadamanthus</b> Loew. |
| 4. Hind corners of the second and following two or three segments of abdomen, at least ventrally, whitish pollinose  | <b>entrophus</b> Loew.    |
| Hind corners of second and other segments of abdomen destitute of whitish pollen . . . . .   | <b>abdominalis</b> Say.   |

**VARIATION OF PYRAMEIS CARYE** Hübner.

By BEVERLY LETCHER, San Francisco.

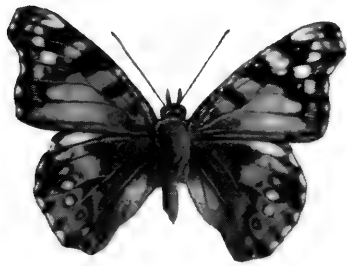
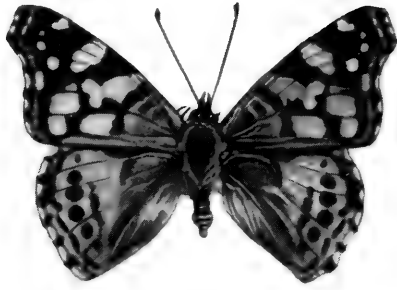
**Pyrameis carye** n. var. **muelleri**.—Varies from typical *carye* in extension of fulvous markings at expense of black on primaries and the replacing by white of the blue and to some extent the black on secondaries. Primaries: apical white spots develop into dashes extending more or less to outer margin of wing, with the exception of the broad marginal band, which is black, and the inner margin and base of wing, which are dusky; the entire wing below the median vein is bright fulvous. Secondaries: the black encircled blue spots become white, or bluish white, the encircling black sometimes disappearing; the submarginal interrupted band is wanting.

It is only within the last few years that any variation in this species, the commonest of our day flyers, was noticed by the writer. Previous to that time it had been considered the embodiment of constancy. I had, it is true, taken in the Fall of 1892 a remarkable "sport," but its like I never expected to see again. This specimen was forwarded to the late Mr. Neumoegen and without doubt is still with his collection.

Sometime after this Mr. Ammon of this city, now deceased, pointed out to me in his collection two of the same form; then Mr. Rivers showed me at the University of California a specimen somewhat damaged, having been gathered in by hand. Later Mr. G. T. O. Mueller called my attention to three which he had, and last Fall I was fortunate enough to take another myself.

While this form is very rare, it is still found with such frequency as to entitle it to a name. Whether it is a remarkable case of "aberration," a number taking the same form, or an example of the evolution of a true variety time only will tell. Mr. Mueller has several intergrades showing variation from typical *carye* to this form in two directions. In the first, there is the gradual restriction of the black of the primaries and extension of the red without change on the secondaries; in the other the blue spots of secondaries are replaced by white with but slight change in the markings of the primaries.

With the exception of one, all of these variations have been taken late in the Fall.



**PYRAMEIS CARYE AND VAR. MUELLERI.**



**RECOLLECTIONS OF OLD COLLECTING GROUNDS.**

By H. F. WICKHAM, Iowa City, Iowa.

**III.—THE LOWER RIO GRANDE VALLEY (Continued).**

Water beetles were only superficially collected, chiefly by dragging out great masses of algæ from sloughs and thus securing the beetles which became entangled in them. Several Hydrophilidæ were obtained by simply stirring up the mud near the banks and picking out the floating specimens of Helophorini and Hydrobiini. One Dytiscid which seems to deserve especial mention is *Eretes sticticus*. It inhabits, besides certain portions of the southwestern United States, also Europe, Asia, Africa, Oceanica, South and Central America.

Several interesting species belonging to various small families of Clavicorns were obtained. *Anisosticta seriata* was beaten from "sea oats" on Padre Island, a low sandy strip lying off Point Isabel, the port of Brownsville. The sand here was so hot that spiders or ants shaken from the plants died in a few seconds, going through the contortions exhibited by an insect which falls on a hot stove. I found that an *Oxacis* frequenting these same "sea-oats" took flight so quickly on being disturbed that it was a matter of some difficulty to capture more than a small percentage of those falling into my net; but by closing the mouth of the bag and holding it flat on the sand they were soon overcome by the heat and rendered nearly helpless and could then be picked out with no trouble. Near the town *Coccinella abdominalis* was found abundantly; *Chilocorus cacti* was met with occasionally and three species of *Scymnus*: *collaris*, *cinctus* and *terminatus* were among the contents of the beating net. Quite a colony of *Epipocus cinctus* was discovered on a polyporoid fungus growing close to the ground on a dead tree trunk, and several of them had strayed out among the dead leaves near by. This insect is not uncommon in Southern Texas, and I have elsewhere described the curious larva which is found in the same situations as the beetles. *Languria leta* feeds on *Argemone mexicana*, and numbers may often be beaten from a single plant. *Cryptorhopalum balteatum* frequents the blossoms of mesquite. Two species of *Teretriosoma*, *chalybeum* Horn and *cornigerum* Chev., were found under bark or else in the beating net after working under dead vines.

In the Serricorn series some of the more conspicuous forms only will be spoken of. The beautiful phosphorescent Elaterid, *Pyrophorus physoderus*, was rather rare at the time of my visit, though probably more abundant in proper season, *Chrysobothris octocola* was moderately abundant on *huisache*\* *Collops vittatus* was common near the river and about the margins of the sloughs (or *resacas* as they are locally termed), while a pair of *C. balteatus* was seen on the great alkali flats between Brownsville and the sea. Fence posts of native leguminous wood, were badly infested by *Sinoxylon sericans* and beating tangled thickets was certain to produce plenty of *S. dinoderoides* which came no doubt from dead twigs and branches. *Amphicerus punctipennis* was found boring in the solid wood and occasionally just under the bark of *huisache*, while *Polycaon obliquus* and *plicatus* were attracted to light. Two specimens of *Elasmocerus terminatus* were captured, one in my room, another by beating. *Clerus abruptus* was rare, *C. quadrisignatus* more common, the latter chiefly about yuccas or under loose bark. *Chariessa vestita*, one of our most beautiful insects, with violaceous upper surface and sanguineous abdomen was twice seen running about on fence posts in the hot sunshine. One *Cregya vetusta* and several *C. oculata* were taken by beating tangles of vines and bushes. A great number of *Rhipidandrus peninsularis* (described from Lower California by Dr. Horn), inhabited a polyporoid fungus, boring through it like some species of *Cis*.

Lamellicorns were few; *Canthon laevis* was abundant along the stage line, especially in sandy spots, but much less common at Brownsville. *C. ebenus* occurred farther up the river at Laredo, while a single *C. simplex* was found in July. *Chæridium histeroides* put in an appearance occasionally. *Onthophagus cribricollis* was found in small numbers under dung in the pastures attached to Fort Brown. *Atenius abditus* and *strigatus*, *Aphodius vittatus*, *uricola* and *lividus* all came to hand at times, but nothing large or fine was seen with the exception of *Strategus julianus*, a single specimen of which flew across my path, to its own destruction on the evening preceding my departure.

Cerambycidae were tolerably numerous and several forms prove to be new, either to science or to our fauna, while others are

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\* A thorny leguminous tree, belonging to the group of Mimosas. It is abundant near Brownsville.

very rarely seen in American collections. *Achryson surinamum* occurred once, *Eburia ovicollis* often—both at light. *Elaphidion mæstum* inhabits thickets and is to be obtained by beating tangles. A single example of *E. irroratum* was taken from a leguminose tree on the high barren "yucca ridges." *Ibidion exclamationis* Thoms, was captured once. *Piezocera serraticollis* was found in the same thickets as *Elaphidion mæstum*—it is a very curious looking creature of a shining chestnut color and with broad flattened antennæ which give it a characteristic appearance. *Phyton pallidum* and *Euderces reichei* were, together, beaten from the vines which seem to overgrow most of the hedges and bushes along the roadsides. *Cyllene crinicornis* was tolerably abundant on a certain fence, evidently ovipositing in the *huisache* posts. Every time I passed the place I got a few, and sometimes half a dozen might be seen at once. They are wary and rather hard to catch, flying at a slight alarm; *Neoclytus luscus* and *erythrocephalus* each occurred once. A remarkably fine example of *Monilema ulkei* was found under a fallen yucca trunk high up on the ridges toward the Gulf. It seems to be the second specimen known from the United States and is easily recognized by the pretty pattern of whitish pubescence ornamenting the upper surface. *Ataxia crypta* was rather common, especially in the cotton-fields; *Aporataxia lineata* rather rare in the thickets; *Ecyrus fasciatus* is another jungle haunter, and by its coloration bears a most deceptive resemblance to a bit of mouldy wood, though *Desmiphora mexicana* (of which a single specimen was beaten from a vine covered hedge) is even more deceiving by the irregular outline communicated by a covering of hairs in crests and lines of white, gray and brown. *Dorcasta cineræa* looks like a slender broken twig—I found it on cotton chiefly, but once on *Solanum*. *Oncideres texana* breeds freely in *huisache*, and on the same plant I got one magnificent specimen of the hitherto unique *O. pustulata*, described from Laredo. *Mecas pergrata* and *M. izornata* were both met with, but rarely. In the wooded river bottom back of Fort Brown two specimens of *Amphionycha amæna* and one of *A. flammata* var. *ardens* were beaten into my net. Several of the above-mentioned Longhorns have only lately been described in the works of Hamilton and Linell.

## NOTES ON THE DISTRIBUTION OF RHOPALOCERA OF NEW HAMPSHIRE.

By W. F. FISKE.

The following notes are additions to those published in the NEWS for October, 1896. Since those were written there has passed two collecting seasons, one of which was spent in Webster and the other in Durham. Webster is situated near the center of the State a few miles west of Concord. Durham is about fifty miles to the southeast, and is situated on an arm of the sea. The difference in the insect fauna of the two localities is great, considering their proximity, but may easily be explained to a great extent by the difference in the snowfall between the two localities. In Durham, owing to its proximity to the sea, much of the Winter precipitation, which falls in the form of snow in the interior, takes the form of rain, thus depriving hibernating insects of the necessary shelter. The following is a brief account of some of the more noticeable differences.

All the large species of *Argynnis* were comparatively scarce in Durham. This is especially true of *idalia*. The small species were not so much affected. *Melitæa phæton* and *M. harrisii* were about equally common in both localities, but *P. nycteis*, so common in Webster, did not occur at all in Durham, and *tharos* was more abundant in the latter place. *Vanessa milberti*, one of the more common butterflies inland and known to occur there in its usual numbers, was at the same time so rare in Durham that not a single specimen was seen in the course of a season's collecting. *Limenitis arthemis* was only represented by one specimen in Durham, the place occupied by that species in Webster being taken by *ursula*, which is rare, if not unknown there. The form *proserpina* seems to be about equally common in both localities, but there is no dividing line between it and *ursula*. *Satyrus alope* was very common in Durham, but there was no trace of *nephele* in any specimens seen or taken. Neither *Debis portlandia* nor *Neonympha canthus* was seen. *Thecla strigosa* was fairly common, but *titus*, *calanus* and *acadica* were all wanting. Of the early Spring forms, *henrici* and *augustus* were very scarce, and *niphon* was but little more common. At the same time in Webster *niphon* was in its usual abundance, and *henrici* and *augustus* were more common than I ever saw them before. I could



find no suitable locality for *Chrysophanus epixanthe* in Durham, so that its absence was no occasion for remark. *C. thæ*, which is one of the greatest rarities in Webster, appears not uncommon on the salt marshes in Durham. *Pamphila otho egeremet*, though fairly common in Webster, was really abundant in Durham, but *P. bimacula* and *manataaqua* were both absent. *P. hianna* was quite common in Durham, though I never met with it in Webster. Besides *P. hianna* I took the following species for the first time in Durham: *Thecla smilacis*, several specimens in May; *Junonia cænia*, one seen August 24th, in fine condition; another taken September 14th, slightly worn; *Terias lisa*, a perfect female, August 15th; *Nisoniades lucillus*, or what I take to be this species, was quite common, though in poor condition, in a locality where its food-plant (*Aquilegia*) grew in abundance, on May 11th.

The following species were taken or seen for the first time in Webster during the season of 1896: *Lycæna scudderi*, a single female in poor condition, June 6th; *Meganostoma cæsonia*, several specimens seen during the month of June. Unfortunately none could be taken, but there can be no doubt as to their identity. I think that this is the first time that either of the above species have been recorded from New England. *Papilio philenor*, a single example in perfect condition was taken in Webster by Mr. C. F. Goodhue early in May; *Euptoieta claudia*, one specimen, July 7th.

During the first week in August, 1897, I had an opportunity to collect in Pittsburg and Stewartstown, N. H., and the adjacent portions of Canada. As might be expected the insect fauna differed much from that at Durham. With the possible exception of *Colias philodice*, *Satyrus nephele* was the most common butterfly. It swarmed on the flowers of golden rod in company with *Argynnis myrina* in almost incredible numbers, but not one *alope* was seen, and only one or two that showed any signs of the yellow band in the form of a yellowish cloud around the eye-spots. *Argynnis atlantis* and *A. aphrodite* were both common on golden rod, but no *cybele* were seen. It appeared to be rather early for the *Graatas*, but several *faunus* and one or two each of *progne* and *comma* were taken. A single *gracilis* was seen, but escaped my net by a very narrow margin. *Pieris rapæ* was extremely abundant everywhere, and *oleracea* appeared not

rare, but had an unpleasant habit of turning up unexpectedly in the most inaccessible places. One of the greatest surprises awaiting me was the occurrence of several fresh examples of *Pamphila mystic*. This species is one of the most common skippers in the southern parts of the State, where it is double brooded, the first brood appearing the last of May and first of June, and the second the very last of August or first of September. This last brood is very scattering in numbers, not more than three or four being seen in any one season, in great contrast to the large numbers appearing in May and June. It is very rarely that a specimen of the early brood lingers into July, and the first record which I have of the appearance of the second brood is August 24th, and the greater part of those that I have seen have been in September. The occurrence in the north of fresh specimens and in considerable numbers on the first of August denotes an entirely different life-history, and further information on this subject would be of interest. Other butterflies seen were: *Argynnis bellona*, scarce; *Phyciodes tharos*, common; *Vanessa antiopa*, *Pyrameis atalanta*, *P. huntera*, *Limenitis disippus*, *Neonympha canthus*, *Chrysophanus hypophlæas*, *Papilio asterias*, *Pamphila peckius*, fresh; *P. cernes*, badly worn. The day-flying moths were numerous, among them being: *Lycomorpha pholus*, common; *Scepsis fulvicollis*, one; *Ctenucha virginica*, common; *Rynchagrotis chardinyi*, common; *Hydræcia nictitans*, *Feltia subgothica*, *Carneades redimacula* and several other noctuids which fly by night. *Plusia bimacula* was quite common, flying up out of the grass when disturbed. *Rynchagrotis chardinyi* was the most common moth on the flowers of *Eupatorium purpureum* in the evening. It was in poor condition, but scores of specimens could easily have been taken on one little patch of the herb.

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A MEMORIAL MEETING, commemorative of Harrison Allen, M.D. and George H. Horn, M.D., was held in the library hall of The Academy of Natural Sciences of Philadelphia, on Friday evening, December 31, 1897. Addresses were made by Dr. E. J. Nolan, S. N. Rhoades, Dr. D. G. Brinton and Prof. J. B. Smith. Dr. Henry C. McCook was to have delivered an address, but was prevented from being present by illness. The Entomological Society of Washington appointed Mr. Wm. H. Ashmead a delegate to represent that society at the meeting.

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., FEBRUARY, 1898.

### Specimens of Natural History in the Foreign Mails.

Those who were interested in the attempt to secure a reduction of postage on specimens of Natural History in the international mails, to which we have referred in the numbers of the NEWS for October, 1893 (p. 266), February, 1894 (p. 42), and March, 1897 (p. 55), may desire to have a somewhat fuller statement of the success attained in May last, than was contained in the newspapers at the time. The references just given are all concerned with the labors of a Committee, appointed by the Academy of Natural Sciences of Philadelphia, September 5, 1893, to secure the admission of specimens of natural history to the mails of the Universal Postal Union as samples of merchandise and under the rates therefor—one cent for every two ounces. In December last, this Committee made its final report to the Academy and was discharged. Its report stated (*inter alia*):

Your Committee have now but to make its official report of the generally well-known fact that the proposed modification as regards Natural History specimens was adopted at the Washington Congress of the Universal Postal Union in May last. The adoption of this modification is referred to by the Superintendent of Foreign Mails of the U. S. Post Office, Mr. N. M. Brooks, in his Report for the fiscal year ended June 30, 1897, and dated Washington, Oct. 13, 1897. The reference is as follows: Alluding to the work of the Universal Postal Congress, Mr. Brooks says (p. 7), "The following are, however, matters of general interest or importance which it may be well to mention, viz.: . . . . .  
(4) Natural History specimens are admitted at the rate and under the

conditions applicable to samples of merchandise." The same Report contains the full text of the convention concluded by the Congress, and on page 42 contains the paragraph in question (chap. iii, art. xvii, parag. 5) as follows: "There are likewise admitted at the rate applicable to samples, articles of natural history, dried or preserved animals and plants, geological specimens etc., which are not transmitted for a commercial purpose, and which are wrapped in conformity with the general stipulations concerning samples of merchandise." The rate for samples is fixed at 5 centimes for every fifty grams, that is 1 cent for every two ounces. According to art. 28 of chapter i, this Convention is not to be put into execution until January 1, 1899.

Your Committee has, therefore, fulfilled its labors and congratulates the Academy that the end aimed at in the first circular [see the News for October, 1893, p. 266] issued by the Academy has been completely achieved. This result is the more gratifying in view of the predictions of failure freely expressed when your Committee entered upon its labors. It would, of course, be presumptuous to claim that the Academy's endeavors have been more than one of the factors in this achievement, but in such an international matter every such factor is of great importance.

It may not be amiss to add here, for the benefit of our readers, further extracts from the above quoted Convention of the Universal Postal Union contained in Mr. Brook's Report pp. 27 et seq.

"Packets of samples of merchandise may not contain any article having a salable value; they must not exceed 350 grams [12.35 Avoirdupois ounces] in weight, or measure more than 30 centimetres [11.8 inches] in length, 20 centimetres [7.87 inches] in breadth, and 10 centimetres [3.93 inches] in depth, or, if they are in the form of a roll, 30 centimetres [11.8 inches] in length and 15 centimetres [5.9 inches] in diameter." (chap. i, art. 5, sect. 5).

"It is forbidden: First, to send by mail: (a) samples and other articles which, from their nature, may prove dangerous to the postal employees, soil or injure the correspondence; (b) explosive, inflammable or dangerous substances, animals and insects, living or dead, excepting the cases provided for in the Regulations of detail."\* (chap. i, art. 16, sect. 3).

The conditions which must be observed for the transmission of samples of merchandise remain as before—the packages to admit of easy inspection, not to "bear any manuscript other than the name or the social position of the sender, the address of the addressee, a manufacturer's or a trade-mark, numbers of order, prices and indications relating to weight and size, as well as to the quantity to be disposed of, or those which are necessary to precisely indicate the origin and nature of the merchandise," while articles of glass, liquids, oils, fatty substances and dry powders must be packed to prevent their damaging, or escaping into, the other contents of mails (chap. iii, art. xvli).

\* The "Regulations of detail and order for the Execution of the Convention" form chapter iii, from which the most important—to naturalists—of our preceding quotations is taken.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

PHOTOGRAPHS for the album of the American Entomological Society have been received from William L. W. Field and Charles C. Adams.

WE have received one dollar for the NEWS from Station E, Brooklyn, N. Y., January 3rd. Will subscriber please send his name and address?—Eds.

HABITS OF A WASP.—A small blackish wasp (*Agencia architecta* Say), was noticed at Iowa City, Iowa, July 27th, dragging off a spider (*Trachelas tranquilla* Hentz) about one-fourth longer and much heavier than itself. The legs of the spider had been bitten off at the junction of the coxæ and trochanters in order, no doubt, to render the body more easy to handle. The wasp dragged it by straddling the corpse and grasping it with her jaws near the tip of the ventral surface of the abdomen, thus allowing only the hard cephalothoracic dorsum to touch the ground and reducing the friction to a minimum. Both specimens are deposited in the National Museum and, through the kindness of Mr. F. W. True, the names were furnished by Messrs. Ashmead and Banks.—H. F. WICKHAM.

READING the editorial note in the October number of the ENTOMOLOGICAL NEWS on "Late Collecting" I could not help thinking what a foreign sound to me there was in the expression "net and cyanide jar will be put away for future use." Here the cyanide jar is never in disuse. On sunny days, be the month December, January or June, butterflies and dragonflies are to be found, to say nothing of the beetles, of which there is always a daily quota for the cyanide bottle. In connection with this I would mention the capture of a specimen (flying) of *Pleocoma behrensii* on December 16th, not a weather-beaten specimen at the tag end of life, but a bright one just emerged. I would also record the finding of *Lindendron rugosum* at an elevation of 3500 feet in dead trunks of *Alnus rhombifolia*. This is about two hundred miles south of its known southern limit I believe.—RALPH HOPPING, Kaweah, Tulare Co., California.

THERE is a character in this city of pronounced German origin, who is an enthusiastic entomologist. Nearly every evening he may be seen with his net in hand, looking for favorable specimens of the insect world. His favorite places are against screen doors and windows, within the glare of the electric lights, where he secures many specimens. Thursday evening a crowd of bystanders who were watching his operations saw him suddenly stoop down and grab at something on the floor. He gave a sharp exclamation and jumped back. He put his boot on the object and crushed it, then commenced sucking his thumb very solicitously. Joe Cramer, one of the spectators, said it must have been a scorpion. An exclamation of pain passed over the entomologist's face as he exclaimed, "I found dot out."—PHOENIX, ARIZ.

ANENT the letter from "W. R. H." I was thinking only a few days ago that the NEWS seemed to run more to descriptive matter than formerly and wondered if this change was made purposely or because of lack of any other sort of material. Maybe I am wrong in thinking that there is any change. I have not looked over the old numbers to see if I am right or not. Even now I always find more pleasure in reading of someone's experiences in the field or an account of the habits of even common insects than in the perusal of heavy descriptions of species or quarrels over the taxonomic value of a spine or a wing vein. Of course all these things have to go in to make up a journal which will appeal to all classes. But I wonder after all what do the "mere collectors" want? I started out in the collecting of insects with no more literature than a "continued story" entitled: "Rambles after Insects," which appeared in an English magazine brought over with us when we first landed on the shores of America. I didn't know where to get anything else nor what to ask for even, yet it wasn't long before I was using a borrowed copy of LeConte's "Classification" and taking instructions as to mounting and collecting from Packard's "Instructions" published by the Smithsonian Institute. I well remember how pleased I was with my copy of Say's "Entomology" which represented my savings for a long time. Then one of my friends sent me a sample copy of "Entomologica Americana" and, through correspondence with those whose names I saw, I finally got some slight idea as to how things were done.—H. F. W.

ENTOMOLOGISTS in general, and lepidopterists in particular, may be interested in learning that the little son of the late Rev. Dr. A. Good, who was his father's companion and aid in collecting the many species of West African Lepidoptera, described by Dr. Holland, now resides with his widowed mother in Wooster, Ohio, and is fast developing into an enthusiastic and careful collector. Though but a boy of 12 or 13 years, he has already collected and carefully mounted nearly all of the common flutterflies and moths, occurring in his vicinity, and otherwise shows an aptitude that is surprising. He has very evidently imbibed or inherited from his father a love of entomology, and it seems to me that an encouraging word from older lepidopterists would not only have a beneficial effect and be well bestowed, but also in future that they may have reason to feel gratified at having done so. Such may address Albert Good, Wooster, Ohio.—F. M. WEBSTER, Wooster, Ohio.

PRIOR to 1800 the entomological papers published in the United States numbered not more than half a dozen; and it is worthy of note that not a single description of a new species of insect appeared in print in this country until after the above date, although several naturalists in Europe had been for some time describing and naming insects sent to them by collectors in the New World. The following are all the papers published in the United States on entomological subjects before 1800, that the present writer is aware of. In the Transactions of the American Philosophical Society, held at Philadelphia, for promoting useful knowledge,

vol. i, 1769-1771, there is a paper entitled, "Observations concerning the Fly-Weevil, that destroys the Wheat; with some useful Discoveries and Conclusions, concerning the propagation and progress of that pernicious Insect, and the Methods to be used for Preventing the destruction of Grain by it. By Colonel Landon Carter, of Sabine Hall, Virginia, communicated by Colonel Lee, of Virginia." Pp. 208-217. Following this paper is a report on the "Same Subject, by the Committee on Husbandry." Pp. 218-224. Pages 224-230 are taken up with observations on the native Silk Worms of North America, by Moses Bartram, which was read before the Society March 11, 1768. A letter of economic interest is printed on page 243, and is entitled, "Extract of a Letter from Mr. Peter Miller, of Ephratah, to Mr. Charles Thomson, on the time of sowing pease, so as to preserve the Crop from being Worm-eaten." A second edition of this volume is dated 1789. Volume II of the same publication, dated 1786, contains one article relating to entomology; it is entitled, "The whole Process of the Silk-Worm, from the Egg to the Cocoon (sic), communicated to Dr. John Morgan, Physician at Philadelphia, in two Letters from Messrs. Hare and Skinner, Silk Merchants in London, July 27, 1774, and February 24, 1775." Pp. 347-366. In 1799, Benjamin Smith Barton, M. D., published his "Fragments of the Natural History of Pennsylvania." Of this work but one part seems to have been issued; this is devoted primarily to the birds of Pennsylvania, but there are also observations on other animals. The concluding pages contain some notes on noxious insects. It is of interest to know that all these papers were published in Philadelphia.—WILLIAM J. FOX.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms.

**4.** The Canadian Entomologist, London, Ont., Jan., '98.—**5.** Psyche, Cambridge, Mass., Jan., '98.—**6.** Journal of the New York Entomological Society, December, '97.—**8.** The Entomologist's Monthly Magazine, London, Jan., '98.—**9.** The Entomologist, London, Jan., '98.—**11.** The Annals and Magazine of Natural History, London, Dec., '97.—**12.** Comptes Rendus. L'Academie des Sciences, Paris, '97.—**13.** Comptes Rendus. Societe de Biologie, Paris, '97.—**15.** Biologia Centrali-Americana, part cxxxviii, London, Nov., '97.—**22.** Zoologischer Anzeiger, Leipsic, Dec. 13, '97.—**25.** Bolletino dei Musei di Zoologia ed Anatomia Comparata d. R. Universita di Torino, 1897.—**36.** Transactions of the

Entomological Society of London, 1897, pt. iv, Dec. 16.—**50**. Proceedings of the U. S. National Museum, xx, Washington, '97.—**51**. Novitates Zoologicae, iv, 3. Tring, England, Dec. 3, '97.—**52**. Transactions of the S. African Philosophical Society, x, 1. Cape Town, '97.—**53**. Transactions and Proceedings of the New Zealand Institute, xxix, Wellington, June, '97.—**54**. Journal of the Royal Horticultural Society, xxi, 2. London, Dec., '97.—**55**. Le Naturaliste, Paris, '97.—**56**. Mittheilungen der schweizerischen entomologischen Gesellschaft, x, 1. Schaffhausen, Nov., '97.—**57**. Ergebnisse der Hamburger Magalhãensischen Sammelreise herausgegeben vom Naturhistorischen Museum zu Hamburg, ii, '97.—**58**. Revista Chilena de Historia Natural. Fundada el 1º de Octubre, 1897. Director i Redactor: Carlos E. Porter. Colaboran distinguidos especialistas nacionales i extranjeros. Valparaiso. This is a new journal of which two numbers have reached us, those for October and November, 1897. It proposes to deal with the fauna, flora, geology and mineralogy of Chile, and particularly of the province of Valparaiso, to publish original papers and bibliographical notices on biological subjects, to facilitate exchange of specimens of natural history and to form a taste for such studies in Chile. In the number for November it is announced that the Revista will hereafter also be the organ of the Museo de Valparaiso.

**The General Subject.**—The Zoological Record, volume the Thirty-Third. Being Records of Zoological Literature relating chiefly to the year 1896. Edited (for the Zoological Society of London) by David Sharp. London. Printed for the Society; . . . 1897. Arachnida, Myriopoda and Prototracheata by A. W. Brown, Insecta by D. Sharp.—[Bethune, C. J. S.] James Fletcher, portrait, **4**.—Dixey, F. A. Summary of Dr. Standfuss' experiments on hybridization, **36**, Proceedings; Mr. Merrifield's experiments on the relation of temperature to variation, figs., Nature, London, Dec. 23, '97.—Fleischmann, A. Lehrbuch der Zoologie. Nach morphogenetischen Gesichtspunkten bearbeitet. Spezieller Teil; ii, Die Wirbellosen Tiere. Wiesbaden, C. W. Kreidel's Verlag. 1898.—Goeldi, E. A. Noteworthy mimicry in a Brazilian spider of the genus *Cyclosa*, 1 pl. Zoologische Jahrbücher, x, 5, Jena, Nov. 26, '97.—[Henshaw, S.] George Henry Horn, **5**.—Joutel *et al.* [Brief notes] see Proceedings of the New York Entomological Society for 1897 in **6**.—Morse, A. P. Pacific coast collecting, **5**.—Phisalix, C. Antagonism between the venom of the Vespidae and that of the Viper, the first a vaccine against the second, **13**, Dec. 4.—Plateau, F. How flowers attract insects—experimental researches, parts iv, v, 1 pl. Bulletins de l'Academie royale de Belgique (3), xxxiii, 9-10, 11, Brussels, '97.—Porter, C. E. Data on the Arthropods of the province of Valparaiso, **58**, Nov.; Id. and Edwards, A. [same], **58**, Oct.—Tutt, J. W. Some considerations of natural genera, and incidental references to the nature of species. Proceedings South London Entom. and Nat. Hist. Society, '97.—Webb, S. A freak of nature: *Lasiocampa trifolii* [andromorphous female], **8**.



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**Arachnida.**—Berlese, A. Acari Myriapoda et Scorpioncs hucusque in Italia reperta. Ordo Cryptostigmata (Sarcoptidæ). Partici Sumptibus auctoris (Annis 1882-1897), 190 pp., 15 pls.—Goeldi, E. A. See General Subject.—Jourdain, S. On the development of *Trombidium holosericeum*, **12**, Dec. 6.—Maskell, W. M. On some tick-parasites of the Kiwi, 1 pl., **53**.

**Myriapoda.**—Attems, C. Myriapods, figs., **57**.—Giard, A. *Echinospora labbei* a new polysporic coccidium from the digestive tube of Myriapods, **13**, Dec. 18.—de Saussure, H. Natural History of the Myriapods, atlas 12 col. pls. in Histoire Physique, Naturelle et Politique de Madagascar, etc., publiée par Alfred Grandidier, 44e fascicule. Paris, 97.

**Apterygota and Neuroptera.**—Schäffer, C. Apterygota, 3 pls. [Collembola and Thysanura], **57**.—McLachlan, R. *Limnophilus affinis* at sea ten miles from land, **8**.

**Orthoptera.**—Bordage, E. On the tetrameric regeneration of the tarsus in Phasmidæ (transl. from CR. Acad. Sci. Paris), **11**.—Gigliot-  
Tos, E. Orthoptera collected in Darien by Dr. E. Festa iii—Acrididæ—Gryllidæ, **25**, No. 301, Aug. 20; Orthoptera [from the] voyage of Dr. A. Borelli to Bolivia and the Argentine Republic, **25**, No. 302, Aug. 31.—Hutton, F. W. The Stenopelmatidæ of New Zealand, 2 pls., **53**.—de Saussure, H. and Pictet, A. Orthoptera,\* pp. 321-328, **15**.—Scudder, S. H. Revision of the Orthopteran group Melanopli (Acridiidæ), with special reference to North American forms\* [421 pp., 26 pls., 30 genera (18 new), 277 species (115 new)], **50**; Brunner's genus *Metaleptea*, **5**.—Zoubowsky, N. Note on the egg-laying of the Acridioidea. Annuaire du Musée Zoologique de l'Academie Imperiale des Sciences de St. Petersburg, 1897, No. 3.

**Hemiptera.**—Breddein, G. Hemiptera, 1 pl., **57**.—Cockerell, T. D. A. A new *Orthezia*,\* **4**; New insects from Embudo, New Mexico,\* **11**.—Howard, L. O. See Hymenoptera.—Kirkaldy, G. W. Revision of the Notonectidæ; part i. Introduction, and systematic revision of the genus *Notonecta*,\* **36**; Notes on aquatic Rhynchota, No. 1, **9**.—Maskell, W. M. Further Coccid notes: with descriptions of new

species, and discussion of points of interest, 5 pls., **53**.—**Montandon**, A. L. Hemiptera cryptocerata: revision of the subfamily *Limnocoliniæ*\* **25**, No. 297, June 11.—**Tinsley**, J. D. Two new species of *Crthezia*\* figs., **4**.—**Townsend**, C. H. T. Locality and food-plant catalogue of Mexican Coccidæ, **6**.

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(Lasiocampidæ), **4**; *Microcalia diphtheroides* Grote, **4**.—Edwards, W. H. Notes upon *Sphinx catalpæ* at Coalburgh, W. Va., **4**; Further observations on *Papilio bairdii* Edw., **4**.—Fenn, C. *et al.* On keeping pupæ through the Winter, Entomologist's Record, London, Dec. 15, '97. —Godman, F. D. and Salvin, O. Lepidoptera Rhopalocera, vol. ii, pl. **xc**, **15**.—Grote, A. R. An attempt to classify the Holarctic Lepidoptera by means of the specialization of the wings. Part i. The day-butterflies, **6**; The changes in the structure of the wings of butterflies, **36**.—Ingenitzky, I. On the life-history of *Psyche* (*Epichnapteryx*) *helix* Sieb., **22**.—Rippon, R. H. F. Icones Ornithopterorum: a monograph of the Rhopalocerous genus *Ornithoptera* or bird-wing butterflies. Published by the author, London. Parts 8–11, rec'd Dec. 17, 1897. —Rothschild, W. On some new butterflies and moths, **51**.—Schaus, W. New species of Geometridæ from tropical America,\* **6**.—South, R. *Heliothis armigera*, **9**.—Urech, F. Experimental results of the constriction of soft pupæ of *Vanessa urticae* across the wings, **22**.—Warren, W. New genera and species of Thyrididæ, Epiplemidæ and Geometridæ, from South and Central America and the West Indies, in the Tring Museum, **51**.—Webb, S. See General Subject.

**Hymenoptera**.—André, E. Synopsis of the Mutillidæ of France, Feuilles des jeunes naturalistes. Paris, Jan. 1, '98.—Cockerell, T. D. A. See Hemiptera.—Dyar, H. G. New sawflies (Tenthredinidæ) with descriptions of larvæ,\* **6**.—Friese, H. Monograph of the bee genus *Panurginus* (Nyl.) (Palæarctic forms), **56**.—Howard, L. O. A new parasite of the harlequin cabbage bug,\* **4**.—Marchal, P. Contribution to the study of the embryonic development of the parasitic Hymenoptera, **13**, Dec. 18.—Marshall, T. A. Supplement to Bracconidæ in Species des Hyménoptères d'Europe and d'Algerie fondé par Edmond André et continué sous . . . Ernest André, 60e fascicule, Paris, Oct. 1, '97.—Phisalix, C. See General Subject.—Taylor, G. W. Note on *Trigonalyx canadensis* Hargtn., **4**.

## Doings of Societies.

The regular annual meeting of the American Entomological Society was held December 23, 1897, the Vice-President, Dr. P. P. Calvert, in the chair. The reports of the various officers were read, received and filed. During the year volume xxiii of the Transactions of the Society, containing 496 pages and 14 plates has been completed. Of volume xxiv there has been printed 320 pages and 1 plate. The chairman announced the death of the late President of the Society, Dr. George H. Horn, on November 24, 1897. Dr. Skinner offered the following minute: "The American Entomological Society hereby records its deep

sense of the great loss it has sustained in the death of Dr. George H. Horn, a member for thirty-seven years and its president for the last fourteen years. It gratefully acknowledges the lustre which his attainments and honors reflected upon this Society by his connection with it and the benefits which his learning and liberality conferred. It rejoices in the successes which he attained, and cherishes the memory of his labors, which form so large a part of the progress of Entomology in America." Mr. Ridings spoke of his early acquaintance with Dr. Horn, dating back forty years. Mr. Liebeck remarked on his personal acquaintance and help from the deceased. Dr. Skinner said the medical education of Dr. Horn had been of advantage in his study of the structure of insects. Mr. Welles and Dr. Calvert spoke of his personal kindness and willingness to assist the younger entomologists in their studies.

On motion the above minute was adopted and ordered to be entered on the minutes of the Society.

The following gentlemen were elected to serve as officers for the year 1898 :

*President*, Rev. Henry C. McCook, D.D.

*Vice-President*, Philip P. Calvert, Ph.D.

*Treasurer*, Ezra T. Cresson.

*Recording Secretary*, Henry Skinner, M.D.

*Corresponding Secretary*, W. J. Fox.

*Curator*, Henry Skinner, M.D.

*Librarian*, W. J. Fox.

*Publication Committee*, { E. T. Cresson,  
C. F. Seiss,  
B. H. Smith.

JAMES H. RIDINGS, *Secretary*.

A meeting of the Entomological Section of The Academy of Natural Sciences was held December 23, 1897, Vice-Director Welles presiding. The chairman announced the death of the Director of the Section, Dr. Geo. Horn, on November 24, 1897, at Beesley's Point, N. J. Mr. Chas. Liebeck handed over to the Section two species of Coleoptera, probably European, *Hadrus alpinus* and *H. carbonarius*, presented by the late Dr. Horn. Same gentleman also presented a Rhynchophorid beetle, also a European species, which had been found in a can of Schultz

powder. Election of officers being in order the following were elected to serve for the year 1898 :

*Director*, Chas. S. Welles.

*Vice-Director*, Philip Laurent.

*Treasurer*, E. T. Cresson.

*Conservator*, Henry Skinner.

*Secretary*, W. J. Fox.

*Recorder*, Henry Skinner.

*Publication Committee*, { C. W. Johnson,  
                                  { J. H. Ridings.

Dr. HENRY SKINNER, *Recorder*.

PHILADELPHIA, Jan. 11, 1898.—A stated meeting of the Feldman Collecting Social was held at the residence of Mr. H. W. Wenzel, 1509 S. 13th Street. Owing to President Griffith's absence, who is at present visiting at Phoenix, Ariz., the annual address was necessarily omitted; it is, however, expected that he will forward a written address to be read at the next meeting.

Prof. Smith called attention to some of the common scales found in New Jersey, consisting of the oystershell scale, San José scale, tulip scale and scurfy scale, twigs covered with the above-named varieties put up in glass tubes, the openings being patched with cotton to prevent moulding, were given to the Social for presentation to the local collection of the Academy of Natural Sciences.

Prof. Smith also exhibited some aquatic lepidopterous larvæ found in Dreer's nurseries, Riverton, N. J., describing the insect's destructive work on water plants in that locality. The speaker stated that the eggs were deposited on the underside of the leaves, the larvæ cutting pieces from pads of lilies, with which they cover themselves while feeding, finally pupating on the stems beneath the water, so that when the moth finally emerged it was compelled to pass through from one to four inches of water before reaching the open air. All stages of this peculiar insect were shown, the species being unknown to him. Continuing he gave an interesting account\* of an experiment in grafting lepidopterous pupæ, which resulted in the production of some curious monstrosities. The experiment was made with some of the large

\* Abstract of a paper read at the meeting of The American Society of Naturalists at Ithaca, N. Y.

species of moths, the speaker mentioning that the success of the procedure depended greatly on getting pupæ of the same age, so that they would mature at the same time; even though this precaution was observed, the mortality reached about eighty per cent. The pupæ were first thoroughly chilled, then quickly cut with a sharp knife, when the desired part of one pupæ was soldered on to another (which had been likewise prepared) by means of melted paraffine which was in readiness.

Prof. Smith also brought a series of Orthoptera to the Social for presentation to the local collection of the Academy.

Mr. Fox called attention to a ♂ specimen of the genus *Mutilla*, in which the wings are rudimentary. Although all females so far known in the Mutillidæ are wingless, and males rarely so, the existence of a specimen with rudimentary wings had not so far been recorded as far as was aware. As he had seen only a single specimen of the species in question, it was not possible to say whether the abbreviated wings were a specific or an individual characteristic. It is certain, however, that the specimen mentioned represents a species distinct from those so far known from the United States.

Mr. Johnson mentioned the capture of a specimen of *Hermetia illucens* by Mr. Harry S. Viereck in Philadelphia, September 3, 1897, which species is common to the Gulf States and West Indies.

Mr. Wenzel presented to the balance of the members, who were not included in the lists of coleopterists so kindly remembered by Mr. Ottomar Reinecke, at the last meeting, a picture of the said gentleman bearing his compliments for each one, for which each recipient desires to extend his sincere thanks to Mr. Reinecke through the medium of the ENTOMOLOGICAL NEWS.

There being no further verbal communications the chairman declared the meeting open to consider nominations and elections for officers to serve for the ensuing year, when the following names were presented:

*President*, David M. Castle, M. D.

*Vice-President*, Charles W. Johnson.

*Secretary*, William J. Fox.

*Treasurer*, Henry W. Wenzel.

There being no opposition the secretary was instructed to cast a ballot in favor of the nominees, upon which the election was made unanimous. A vote of thanks was then tendered the retiring secretary, complimenting him on the faithful discharge of his duties during his term of office.

No further business being presented the meeting adjourned to the annex.

THEO. H. SCHMITZ, *Secretary*.

# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX.

MARCH, 1898.

No. 3.

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### RARÆ AVES OF THE INSECT FAUNA OF ARIZONA.

By Dr. R. E. KUNZE, Phoenix, Ariz.

Having for nearly two full seasons collected in Arizona, I wish to place on record a few of the good finds allotted to a passionate collector under sometimes very trying circumstances. The season never closes in S. Arizona; Coleoptera are found every month of the year. Whenever a longer breathing spell is at hand I will more fully describe the insect fauna and flora of this sun-kissed land.

I will briefly refer to memorized notes, the vast amount of all material collected precluding detailed account, except for a little biological work. Of Sesiidæ found one only in San Francisco Mountains, saw another of same species on flowers of *Withia* spec. which I failed to net. This Autumn found what appears to be a *Sesiid*, beaten off a shrub, *Hymenoclea monogyra*, the arrow weed of bottoms; in all, two examples were secured early in November. Of Sphingidæ, rare in S. Arizona, took at light in June, 1897, one ♂ *Dilophonota obscura*, and a ♂ *Diloph. ello*, middle of September. In July, 1896, took an *Hemaris cynoglossum* near Prescott, and several more at headwaters of Hasayampa River, near Senator Mills. One of these taken on Mount Union, head of this river, at 8600 feet elevation, near its

peak on flowers of *Monarda fistulosa* or horsemint. A single example of a three-winged *Smerinthus*, form *astarte*, found on Mount Humphrey, Flagstaff, July, 1897, and one *ophthalmicus*, perfect ♂, taken in Phoenix at light. *Sphinx chersis*, found in but two or three examples, S. Arizona. *Triptogon*, var. *occidentalis*, not uncommon.

Of Syntomidæ took *Anatolmis fulgens*, that scarlet gem of the mountains of Coconino County. Pericopidæ were represented by *Gnophæla hopfferi* and *Melanchroia inconstans*, both visiting flowers of *Withia* spec. a plant resembling *Elecampane*, and *Rudbeckia laciniata*, or Thimbleweed of San Francisco Mountains; all taken in bright sunshine. Of Arctiinæ took a few *Emydia ampla* at light in Yavapai County, and *Arctia* var. *arizonensis*, in Southern and Central Arizona. A fine arctian so much like *Eupseudosoma floridum*, taken at light in September in Phoenix. That rare *Halisidota ambigua*, taken in two examples; one in Yavapai County, in 1896, and the other in Coconino County, 1897, at light. *Arachnis picta* not uncommon in Central Arizona.

Liparidæ furnished me one of *Artaxa ingenita*, taken at light in Yavapai County, and now in collection of Mr. J. T. Mason, Denver, Col., and Mr. D. Bruce informed the writer that only one other had been taken in this country, belonging, as it does, to the Mexican fauna. I labor under the impression that I have put away another poorer specimen taken this Autumn at same locality. It is saffron-colored, size of *Orgyia antiqua* ♂.

Notodontidæ furnished two surprises—now in the hands of Prof. A. S. Packard for determining; one a *Datana* nov. spec. bred from a gregarious larva found on *Quercus emoryi* early part of August, 1896, in Yavapai County, the imago of which bears a resemblance to *D. ministra* of eastern United States, so Mr. Chas. Palm, to whom I sent all pupæ, informs me. The larva is jet black, covered by long, fine white hairs all over its body. The other is *Cerura nivea*, in last synopsis accredited as a variety of *Cinerea* of the East. I bred from ova of two different females and obtained a number of fine cocoons. The larvæ of both moths are exactly alike in coloration, size and ornamentation—are unlike those of *Cinerea* excepting in first and second stages. In its third and fourth stages this larva more resembles that of *C. multiscrita*. One of the females was almost immaculate;



excepting a fine black spot between veins of external margin of primaries, and the other bred from showed a few black markings on primaries near costa and basal parts. My notes taken of this, a true species, will soon be made public.

Of rarer Saturniidæ, obtained one *T. polyphemus* var. *oculea*, in July, 1896, and two others in August, 1897; all three imperfect. This variety is heavily overlaid with black scales, especially on primaries. The best example is in Mr. Mason's collection, and others in possession of Prof. Packard for comparative study. Of *Hyperchiria pamina*, obtained only four or five larvæ and cocoons in two years from Yavapai County.

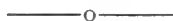
Bombycidæ furnished me with several undetermined examples. *Gloveria arizonensis* I took in two examples in central Arizona; also a *Heteropacha* sp. which Mr. D. Bruce did not recognize.

Of Cossidæ, Mr. Bruce thinks I collected a new species, resembling a *Hypopta* and quite small, now in the hands of Prof. Packard for determining. It was taken in Maricopa County, '97.

Of Geometridæ, took four new species, 1896, in central Arizona, one of which, a *Spodoptera*, Dr. G. D. Hulst, named after its collector.

Of Noctuidæ, dare not speak; a large catch, season of 1897, has not been examined for lack of time. Heterocera are better represented here than Rhopalocera, and on account of intense heat numbers of the latter are much localized; some even betake themselves, much as we do, to the shady side of the bush to escape a broiling sun.

(To be continued.)



### CONTRIBUTIONS TO THE ODONATA OF MAINE.—III.

By F. L. HARVEY, Orono, Maine.

(Continued from ENT. NEWS, vol. iii, Nos. 4 and 5, 1892.)

#### Tribe I.—AGRIONINA.

##### Subfamily I.—CALOPTERYGINÆ.

1. *Calopteryx maculata* Beauvois.

Farmington (Miss Furbish), S. Lagrange (Harvey).

2. *C. æquabilis* Say.

Orono. June 17, 1897 (Bartle and Florence Harvey), Auburn (E. D. Merrill), Foxcroft and S. Lagrange (Harvey).

This species was rather common this season. The *teneral* males are without the black tips to the wings.

54. *Heterina americana* Fabr.

Chemo Stream, Bradley, Sept. 23, 1897 (E. D. Merrill). A single headless male found on the shore below a fall. We have never seen this species before in Maine. This is the most eastern locality known. It has been taken in western Maine

Subfamily 2.—AGRIONINÆ.

55. *Amphiagrion saucium* Burm.

Orono, June 10 and 18, 1892; Bradley, July 8, 1897 (Harvey); Frog pond, Orono, June, 1897 (Bartle Harvey).

8. *Enallagma hageni* Walsh.

Rangeley (Miss Furbish), Foxcroft (Harvey).

56. *E. calverti* Morse.

Orono, June 28, 1897 (Florence Harvey).

57. *Nehalennia posita* Hag.

Orono, July 12, 1897, over Penobscot River (Bartle Harvey).

9. *N. irene* Hag.

Westbrook (Ricker).

58. *Erythromma conditum* Hag.

Chemo Stream, Bradley, July 8, 1897; not common (Harvey).

13. *Lestes unguiculata* Hag.

A single ♀, N. W. Carry, head of Moosehead Lake, Aug. 26, 1897 (Harvey).

59. *L. uncata* Kirby.

Over road June 28, 1897, Orono (Bartle Harvey). Many females but few males. Some of the males lacked the yellow humeral stripe, others had the mid-dorsal carina yellow.

60. *L. congener* Hag.

A single ♀ Aug. 26, 1897, N. W. Carry, head of Moosehead Lake (Harvey).

Subfamily 3.—GOMPHINÆ.

61. *Ophiogomphus anomalus* n. sp. (Pl. v, fig. 1).

Length 42 mm.; abdomen 30 mm.; hind wing 24 mm. Black with bright yellow colors.

Frons yellow, separated from clypeus by a black line. Clypeus and ante-clypeus yellow; black bands running across the post-clypeus to the

suture of the ante-clypeus dividing it into three yellow areas. The black bands continue along the suture of the ante-clypeus to the outer edge of the labrum, between the labrum and ante-clypeus, down the middle of the labrum and along its lower edge dividing the yellow of labrum into two areas. Base of mandibles and occiput yellow. Antennæ and vertex black. The top of vertex straight and bearing on the crest black cilia. The face and vertex clothed with dark hairs. The basal joint of the antennæ with a narrow yellow line on the upper edge. Back of head and eyes dark.

Prothorax black; an anterior narrow line and two small median spots yellow. Thorax bright yellow; mid-dorsal stripe wider below, divergent above and joining the ante-humeral behind; ante-humeral and humeral stripes (separated below for half their length by a yellow line) and a double, interrupted stripe on the middle of the side, black. The humeral stripe joins the one on the side anteriorly.

Wing hyaline, pterostigma brown; membranules very narrow and pale yellow; triangles not crossed and slightly angled at the origin of the cross-vein between the two upper discoidal areolets. Arculus straight, the sectors separated, and the spaces above and below equal.

Legs black, the lower surface of the femora lighter, hind femora with numerous short spines.

Abdomen black, with a mid-dorsal and a lateral yellow stripe involving the base of all the segments. The stripe on the dorsum of segments 3-9 narrow, on 8 club shaped, on 9 square, on 10 round, with a point behind. The stripe extends the whole length of the dorsum of 1 and 2. The lateral stripe conspicuous on 7-10. The spots on 9 and 10 involve the whole length of the side. That on 9 notched above and resembling a letter **G**. The yellow on the side of 10 extends along the sutures at the base of the superior appendages. Segments 7-10 dilated, greatest width at base of 8 (2.5 mm.)

Superior appendages black, a little longer than 10, broad at the base, the outer edges straight and parallel, the inner divergent, ending in a blunt point. Under surface bearing numerous tubercles arranged in irregular longitudinal rows, seven or eight of which appear as minute teeth in profile view.

Inferior appendage light colored, stout, grooved on the outer sides near the base, the outer half abruptly curved upward meeting the superior appendages one-third from the end.

Described from a single male taken June 15, 1892, at Orono, along the border of woods, by F. L. Harvey. Female unknown.

Mr. Calvert makes the following comment on this species: "This male agrees with the characters given by Baron de Selys (Comptes Rendus, Ann. Soc. Ent. Belg. 1879, p. 64) for *Ophiogomphus* excepting the branches of the inferior appendage, which are strongly upcurved in their apical half, as in *Erpetogomphus*,

instead of at the apex only, as in typical *Ophiogomphus*. This species is, therefore, to this extent, intermediate between the two genera named with stronger affinities to *Ophiogomphus*."

62. *Gomphus scudderi* Selys (Pl. v, figs. 6-8).

♂ (hitherto unknown).—Length 58 mm., abdomen 43 mm., hind wing 35 mm. Black, fuscous and greenish yellow.

Frons greenish yellow with a black band on the lower edge above the articulation with the clypeus. Yellow of the post-clypeus divided into three areas by a black patch each side of the middle; ante-clypeus black. Labrum yellow, with anterior border black. Base of mandibles and labium greenish yellow; vertex and antennæ black. The basal joints of the antennæ with a yellow ring on the distal end. Occiput greenish yellow, the crest slightly convex and armed with black hairs. Rear of eyes pale.

Prothorax unicolored. Thorax fuscous, mid-dorsal carina black and prominently crested in the middle. The narrow anterior transverse stripe (interrupted at the mid-dorsal carina) and the narrow ante-humeral stripes (much divergent below), greenish yellow. Sides of thorax with three yellow stripes, the anterior best defined, the dark stripes alternating at the first and second lateral sutures. Three greenish yellow spots on dorsum between the wings. Underside of anterior femora pale. Hind femora with numerous short bristles.

Wings hyaline, pterostigma 4 mm., brown; ante-cubitals 15-16, post-cubitals 10-11. All triangles and basal spaces free from cross-veins. Arculus angled, the spaces below and above the union of the sectors *equal*. Outer side of triangle straight.

Abdomen black. Segments 7, 8 and 9 much dilated. Eighth segment nearly 7 mm. wide. Segments 3-10 with basal yellow rings, those on 8, 9 and 10 reduced to sutural lines. An acute, triangular, mid-dorsal, basal spot on the eighth segment and a smaller spot with an obtuse angle on the basal dorsum of the ninth. Dorsum of 1 and 2 with narrow yellow stripes. Auricles and a round spot behind them on the sides of 2 yellow. A lateral yellow line, faint on segments 4-6, but prominent as large basal spots on 7, 8 and 9.

Superior appendages black, stout, longer than 10, very divergent at tip, where the acute points are 3 mm. apart and considerably wider than the breadth of 10. On the inferior surface, in their apical third, are about six low, broad crenules seen by microscope in profile view.

Inferior appendage brown, nearly as large as the uppers, flattened at the base and excavated above, more widely divergent in the middle than at either end, wider in the middle than the superior appendages and equally divergent at the tip. The ends turned upward and approaching the superior appendages. Both appendages armed with bristles.

Nearly related to *Gomphus fraternus*, but much larger, abdo-

men more dilated, and also with a dorsal basal spot on ninth segment, and the superior appendages have several crenulæ on the inferior apical third.

Described from a single male taken Aug. 25, 1897 (by F. L. Harvey), over Russell Stream, a tributary on the East Side of the West Branch of the Penobscot River, two miles above North-east Carry near the head of Moosehead Lake.

25. *Gomphus nævius* Hagen (Pl. v, figs. 2-5, 9, 10).

♂ (previously unknown).—Length 34-37 mm.; abdomen 25-27 mm.; hind wing 19.5-21.5 mm. Greenish yellow and black.

Frons, clypeus and labrum greenish, with the sutures separating them more or less black, the black extending in a narrow line nearly half way across the centre of the labrum. Vertex and occiput black, the latter with a small yellow spot behind, and its straight hind margin with long black hairs. Eyes greenish. Apex of first joint of the antennæ on the inside yellow. Rear of head black.

Prothorax black with two minute yellow dots on the middle of the dorsum and a narrow yellow line on the anterior border.

Thoracic dorsum black, excepting a transverse anterior, and two isolated ante-humeral stripes which are greenish yellow; the transverse anterior stripe interrupted by the mid-dorsal carina; the first ante-humeral stripes are oblong in form and divergent anteriorly. The second ante-humeral stripe, when entire, narrowed in the middle; when broken, the upper half is sometimes reduced to a small superior spot; to have this stripe entire is the exception. Sides greenish yellow. Black bands on the humeral and first and second lateral sutures. The metastigma black. The underside of the thorax and the coxæ yellowish green.

Legs black. Interior median surface of the femora of the fore legs greenish.

Wings hyaline. Costa greenish yellow; pterostigma black, 3 mm. long on the hind wing; ante-cubitals 11, post-cubitals 8.

Abdomen black, marked with yellow as follows: segment 1 with a narrow mid-dorsal stripe, a transverse stripe on posterior end of dorsum and lower half of side. Segment 2 with a mid-dorsal stripe, arrow-shaped, with the point backwards, the auricles and a patch behind them next the genitalia. Segment 3 with lateral proximal spots which may be continuous over the dorsum forming basal rings, or interrupted, leaving basal dorsal spots. The dorsal markings may be obsolete, especially on 4-6. Segment 10 spottied. Suture between 8 and 9 yellow on dorsum. The spot on side of 8 conspicuous, larger than on the other segments, extending to the middle above and the whole length on the lower border. The ventral edge of all the segments pale colored. Segments 3-7 slender, widening to the apex of 8, which is 2 mm. broad, then narrowing to 10, which is 1.5 mm. broad.

Superior appendages yellowish white, with a narrow black band on the base as far as the inferior tooth. About the same width for one-third of the length, then abruptly narrowed from the outside to slender points, which are turned outward and upward at the ends; from the base curved outwards until, at one-third the length, the two are wider than the 10th segment, then curving inwards, and at the apex outwards and upwards. An inferior obtuse tooth at one-third of the length from the base.

Inferior appendage dark brown, lighter above, the tips and base black, three-fourths as long as the superior appendages; bifid about one-half the length; the outer edges parallel and widest at the base, narrowing from the inside to blunt, upturned tips, which approach the superior appendages and are equally divergent; sinus open. In profile view, curved downwards in the basal third, then gradually upwards to the apical third, which curves rapidly upwards. Both appendages clothed with hairs, those on the upper pale, those on the lower dark.

♀.—The females are somewhat variable. Of three specimens before me two have the second ante-humeral stripe entire, but narrowed in the middle; the other has the stripe interrupted in the middle, the upper part pale and hardly half so long as the lower. One of those with the full humeral stripe lacks the yellow dorsal spot on the 8th segment. The back of the vertex yellow, and also a triangular space on its front. The suture between the frons and nasus is black only at the outer angles. The sides of abdominal segments 1 and 2 and the basal half of 3 yellow, also the sides of 7-9 yellow with black in the upper anterior part.

Described from forty specimens taken at Chemo Stream below the bridge at the old mill, Bradley, Me., July 8, 1897, by F. L. and Bartle Harvey.

The specimens were flying up stream, and were nearly all taken from a small rock six inches out of water, upon which they would almost invariably alight by preference, although there were several other rocks apparently equally favorably situated. It is hard to take them on the wing as they fly very close to the water. The whole day was occupied in watching the stream by the writer and his son. Only three females were seen. One pair was taken *in copula*. My son spent the whole of the following day at the same place on the stream and did not see a single specimen. Two or three specimens were seen the last of July over swift water on Birch Stream in Greenfield, about eight miles from the other locality. The male of this species previously unknown is now represented by many more specimens than the female.

## FIVE NEW SPECIES OF PHLEPSIUS.

By C. F. BAKER, Ala. Polytechnic Inst. Auburn, Ala.

**Phlepsius dentatus** n. sp. ♂.—Length 7 mm. Form of *humidus*. Head broader than thorax; vertex rather strongly angulate before, nearly as long as half the width between eyes, or three-fifths the length of the pronotum; disc distinctly broadly depressed, anterior edge acute; front broad above, rapidly narrowing to clypeus, an eighth longer than wide, about two and a half times the length of the clypeus, sides obtusely angled just below antennal pits, then broadly shallowly incurved above; pronotum sparsely punctured on posterior half, slightly incurved behind; width little less than two and one-fifth times length. Elytra slightly narrowed toward tips. Color pale fulvous. Head and thorax thickly irrorate with deep fulvous, leaving a few very small lighter areas. Elytra whitish, veins light brown, with several more or less extensive very pale fulvous clouds in three indistinct transverse bands; irrorations sparse and weak; fore and middle femora imperfectly biannulate with fulvous. Abdomen above and below somewhat darker. Plate subtriangular, produced at tip in a narrow projection as long as rest of plate; valves longer than entire width across base, sides rounded below, contracted at upper two-thirds, tip flaring and curved, the inner extremities each with a short, inwardly bent, dark brown tooth.

Described from one male in the Uhler collection. It was taken on the Delta Railroad, eight miles northeast of Baltimore. This species differs from any other American *Phlepsius* in the form of the male genitalia.

**Phlepsius pulchripennis** n. sp. ♀.—Length 5.5 mm. Small and slender, form more nearly of *irroratus*. Head slightly broader than thorax; vertex obtusely angulate, length half of the width between the eyes, or half the length of the pronotum; disc gently convex, anterior edge obtusely rounded onto the front; front rather long and narrow, a half longer than wide, two and three-fourths times the length of the clypeus, sides nearly straight; pronotum obscurely wrinkled on posterior three-fourths, nearly straight behind, width about two and one-sixth times the length. Elytra distinctly narrowed towards the tip. Color sordid cinereous. Head more or less irregularly smutted with blackish; pronotum with a few scattering irregular brown markings. Elytra milky white and veins brown, except a large portion of costal cell, which is transparent and without supernumerary veins or markings, the supernumerary veins moderately numerous elsewhere; three black spots on apical half of costa, one in middle basal cell, and one on clavus next the clavus next the claval suture; reticulations very unevenly distributed and confined mostly to median portion of elytra, being largely wanting along commissural margin and costa; fore and median femora biannulate with brown. Last ventral segment as long as broad; hind margin shallowly trisinate.

Described from two females, one collected at Opelousas, La., by Mr. G. R. Pilate, and one at Auburn, Ala., by myself. This is the only known northern representative of a group of Phlepsiids mostly confined to tropical and subtropical America. There are a number of undescribed species of this group in Mexico and Central and South America, all showing a strong resemblance.

**Phlepsius pusillus** n. sp. ♀.—Length 5 mm. Small, but robust. Head slightly broader than thorax; vertex obtusely angulate, width between eyes about two and one-third times its length, the length about one-half that of pronotum; disc slightly depressed, nearly flat, anterior edge somewhat obtuse, not at all thin and acute; front short, and very broad throughout, two-sevenths longer than wide, two and one-fourth times longer than clypeus, broadly slightly bulging at antennal cavities; pronotum finely, sparsely punctured and obtusely wrinkled on posterior half, hind margin nearly straight; width little more than two and one-fourth times the length. Elytra short and broad, but little exceeding abdomen, scarcely narrowed towards tips. Color pale fulvous. Face washed with heavier fulvous, leaving numerous lighter dots; vertex and pronotum irregularly irrorate. Elytra white, with very few distinct supernumerary veins; rather evenly, finely irrorate with brown, some darker dots along commissural margin and apex of costa; dorsum and vicinity of notch on last ventral segment blackish. Legs irregularly marked with dark fulvous. Last ventral segment large, twice length of preceding, nearly truncate behind, with a large median notch.

♂.—Like the female, except venter darker. Plate triangular, as long as preceding segment; valves once and a half the length of plate, sides gently curved to an obtuse point.

Described from two specimens in the Uhler collection, one collected September 25 at Caton's Bush, two miles southeast of Baltimore, Md.; the other, September 20 at Odenton, sixteen miles southeast of Baltimore. This is one of the smallest of the more typical Phlepsiids. *Ovatus* has the head narrower than the pronotum. *Uhleri* belongs to the group including *strobi* and *Eutettix seminuda*.

**Phlepsius occidentalis** n. sp. ♀.—Length 6 mm. Short and broad. Head slightly broader than thorax; vertex obtusely angulate, length at middle but little less than half width between eyes, or about two-thirds of the length of the pronotum; disc depressed, anterior edge somewhat compressed, but not thin and acute. Front broad above, narrowed rapidly to clypeus, about one-fourteenth longer than wide, two and one-fifth times as long as clypeus, sides slightly bent outward at antennal cavities; pronotum obscurely wrinkled and finely sparsely punctate posteriorly, hind margin nearly straight; width two and a half times the length. Elytra



rather short, scarcely narrowed towards tip. Color cinereous. Head and thorax irrorate with fulvous, the latter sparingly, the face with numerous light dots. Basal angles of scutellum fulvous. Elytra whitish, sparsely and subobsoletely irrorate with brown, most distinctly so at extreme apex; fore and middle femora indistinctly biannulate with fulvous. Last ventral segment twice the length of the preceding, very slightly broadly produced at the middle, with a median notch, the lateral angles prominent, obtuse; portions of hind margin blackened.

Described from a single female in the Uhler collection. It was collected in Washington Territory. It is nearer to *humidus* and *nebulosus* than to any other species, but differs widely from these as described above.

**Phlepsius mimus** n. sp. ♂.—Length 6.5 mm. Form and size nearly of *texanus*, somewhat more slender. Head slightly broader than thorax; vertex short, very bluntly angulate, disc convex, though slightly transversely depressed behind, broadly rounded onto the front; length at middle slightly less than a third of width between eyes; front broad, length once and a tenth its width, twice and four-fifths the length of clypeus; clypeus somewhat broader than usual at base; pronotum finely, sparsely punctured on posterior three-fourths, hind margin very shallowly, angularly emarginate; width little less than twice and one-third the length. Elytra somewhat narrowed towards the apex: excepting a few in costal cell, the supernumerary veins are wanting. Color pale cinereous. Face finely confluent dotted with fulvous; vertex and pronotum coarsely irrorate with fulvous. Elytra milky white, with the irrorations, except sparingly along costa and apex, broken up into fine dots, something as in *punctiscriptus*. Several small darker spots along claval commissure and costa towards apex. Wings infusate apically; fore and middle femora each with one distinct brown annulus near the apex, hind tibiae with dark tips. Abdomen somewhat darker above and below; some brown blotches on mesopleurae. Plate large, triangular, the valves extending its length beyond it; valves with numerous stout white bristles, the sides incurved beyond the narrow, strongly divergent tips.

Described from a single specimen from the Uhler collection, taken October 11 at Odenton, sixteen miles southeast of Baltimore. This species is nearest *texanus*, from which it differs in coloration and structure of genitalia. *Texanus* is more robust and darker. Its resemblance to *punctiscriptus* is but superficial, the structure of the head widely separating it from that species.

DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE.—I am delighted to notice that the magazine still continues to be of such high quality. I do not know what your arrangements are for paying for plates, but figures of new species similar to the exquisite work on Plate III of *Pyrameis carye* in the present volume would, I know, be acceptable to many entomologists besides me.—JAMES FLETCHER.

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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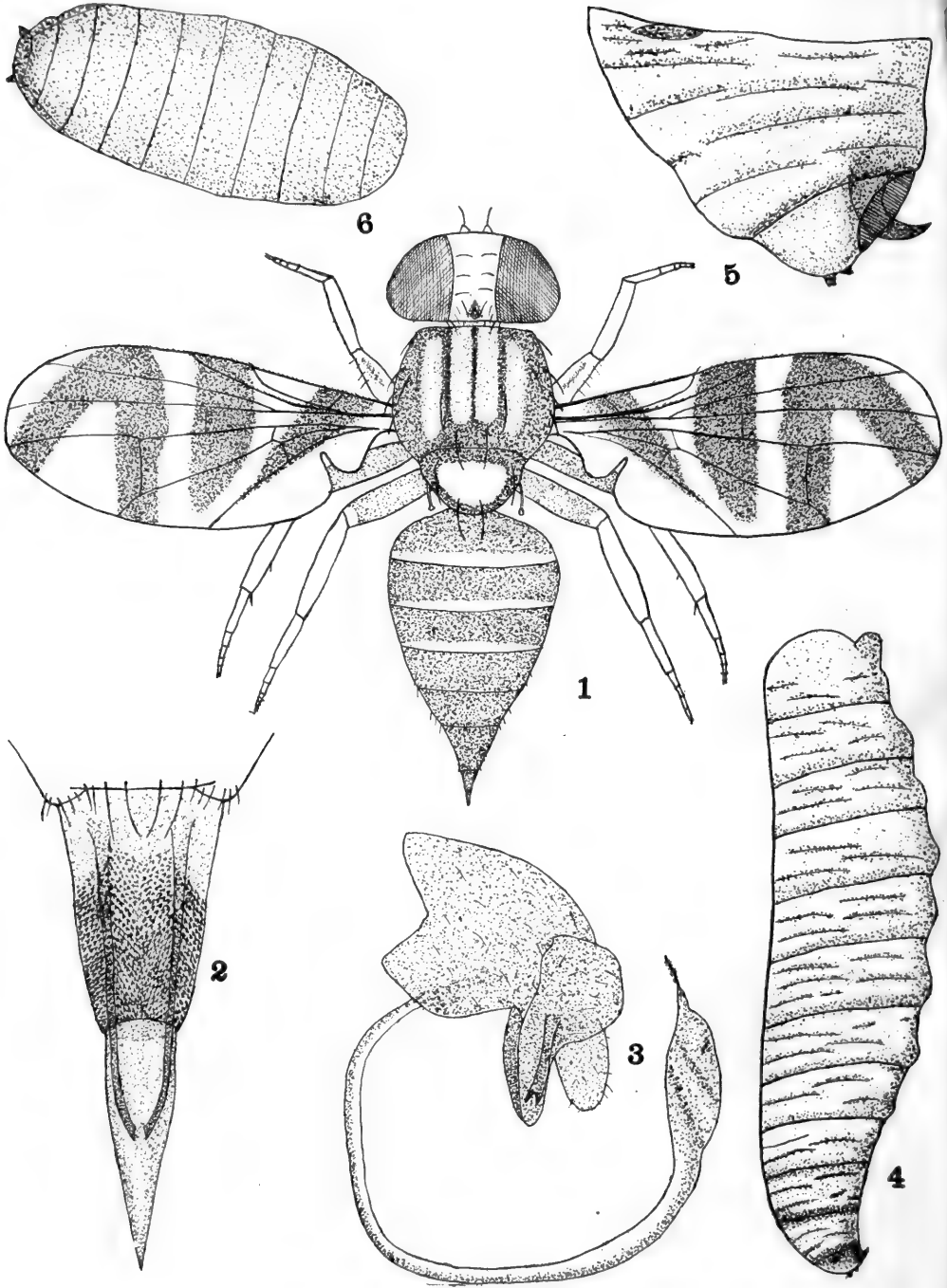
PHILADELPHIA, PA., MARCH, 1898.

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### THE DISTRIBUTION OF ENTOMOLOGISTS.

The subscription list of the NEWS suggests to us some interesting points for study in relation to entomologists in this country and Canada. It appears that entomology has grown from certain centres of interest, irrespective of population, although population is doubtless also a factor to a certain extent. As an illustration, the States that produced Say, Harris Walsh and Fitch show for Pennsylvania 83 subscribers, Massachusetts 63, Illinois 47 and New York 88. The South and far West, except California, show a lack of interest due to want of centres or starting points and not lack of population. Wherever one person begins the study others sooner or later follow in the good work. Indiana, a populous State, shows but 6 subscribers. Delaware, Maryland and the District of Columbia give but 26, and most of these are in the city of Washington. The New England States, excepting Massachusetts, show little interest in comparison; Maine having 9 subscribers, New Hampshire 6, Vermont 2, Rhode Island 6 and Connecticut 19. Some States in the West show a surprising lack of interest; Nebraska, for instance, furnishes 2 subscribers, Dakota 2, Idaho 2, Montana 4, Nevada 1. The States that do not believe in the NEWS, or who have no entomologists, are Wyoming and South Carolina. California shows the results of the work of some of its well-known entomologists of the earlier years as its subscribers amount to 41. Canada gives 27 and Europe but 31. Instead of having a subscription list of 550 it should be twice that many and we could then make the NEWS a journal of which to be proud.





A NEW TRYPETED.

(See page 69.)

EXPLANATION OF FIGURES.

- Fig. 1.—*Rhagoletis ribicola* n. sp. ♀.
- “ 2.—Ovipositor and sheath.
- “ 3.—External genitalia of male.

- Fig. 4.—Larva.
- “ 5.—First two segments of larvæ.
- “ 6.—Pupa.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

## A NEW TRYPETID OF ECONOMIC IMPORTANCE.

By R. W. DOANE.

(Washington Agricultural College and School of Science.)

Since the publication of Loew's Monograph, two new species belonging to the genus *Rhagoletis* have been described; one *R. zephyria* Snow, in Kan. Univ. Quar. ii, 164; the other *R. formosa* Coquillett, in Canadian Entomologist, xxvi, 71. These with the species described herewith make six species belonging to this genus, which may be separated by the following table based principally on the wing markings.

With three cross-bands and two spots; the first spot between apices of first and second veins, the second in apex of first posterior cell . . . . .	<b>formosa</b> Coq.
With four cross-bands.	
First and second cross-bands connected posteriorly.	
Second and third cross-bands not connected anteriorly.	<b>tabellaria</b> Fitch.
Second and third cross-bands connected anteriorly.	
Length 3.5 to 4.5 mm. . . . .	<b>pomonella</b> Walsh.
Length 2.5 to 3 mm. . . . .	<b>zephyria</b> * Snow.
First and second cross-bands converging, but not connected posteriorly.	
With a brownish spot at tip of vein three . . . . .	<b>cingulata</b> Loew.
With no such spot . . . . .	<b>ribicola</b> n. sp.

**Rhagoletis ribicola** n. sp. ♂ ♀.—Black, head and its appendages yellowish, a dark blotch on the vertical triangle. Last joint of the antennæ very slightly concave on dorsal side, anterior corner rather sharp; moder-

\* I have not seen this species, and can find nothing in the description of *zephyria* that is not true to a greater or less extent of *pomonella*. As the depth of coloration varies considerably in both species, little dependence can be placed on this character. I have one specimen of *pomonella* from Massachusetts in which the hyaline space between the second and third cross-bands reaches the fourth vein, and in which the fourth band fills out the tip to as great an extent as in Mr. Snow's figure of *zephyria*. The description of *zephyria* was drawn up from three males from Southern California. Two other specimens are mentioned from the same locality in which the cross-veins are more approximate, in fact just as they are in *pomonella*, so that the difference in size seems to be about the only thing that would separate the species, and as this is subject to considerable variation in both instances it would seem that *zephyria* is not a distinct species.

ately deep furrows for the reception of antennæ; proboscis and palpi short; bristles black, three facial pairs convergent, the ocellar pair strongly proclinate, the two fronto-orbital and the vertical pairs strictly reclinate.

Thorax shining black with four rather broad, longitudinal, whitish lines on dorsum, the outer pair longer and narrower than the inner pair; scutellum except the base and sides, halteres, and a line running from the humeri to the base of each wing, light yellow; the thoracic and four scutellar bristles black.

Abdomen shining black, posterior border of segments two, three and four with a rather broad band of white; sixth segment of male small, partially or wholly concealed beneath the fifth; seventh segment of female a little longer than sixth, flattened or slightly concave, ventrally; sheath of ovipositor and ovipositor reddish brown; the sheath cylindrical and covered with fine triangular scales; ovipositor dagger shaped; a few short black marginal bristles on last three segments.

Legs clay-yellow; posterior and middle coxæ and femora except tips, black; anterior femora with only a little black. Wings hyaline, marked with four brown cross-bands, the first is somewhat oblique and runs from the humeral vein to the sixth longitudinal vein, along which it gradually fades out beyond the posterior basal transverse vein; the second is much broader, nearly perpendicular, begins on the costa between the tips of the auxiliary and the first longitudinal vein and extends across the middle of the fifth longitudinal vein, fading out before reaching the posterior margin of the wing; the third is nearly parallel with the second, not quite as broad, runs over the posterior cross-vein, and reaches the posterior margin just behind the tip of the fifth longitudinal vein; the fourth band is oblique, completely united with the third on the costal border and reaches the posterior border at the tip of the fourth longitudinal vein; first longitudinal vein with very short black bristles; the anterior cross-vein is a little more oblique and very slightly curved; anal cell not drawn out to a point. Length ♂ 3.5-4. mm.; ♀ 4-4.5 mm.

Many males and females from eastern and western Washington and western Idaho. The marking on the wing closely resemble Figure 11, Plate X, Loew's Monographs, Part III, but the spot at the tip of vein three is wanting, the first cross-band reaches farther down on vein six, the second fades out gradually a little nearer the margin than is indicated in Loew's figures. The posterior basal transverse vein forms almost a right angle at its union with the fifth longitudinal vein, thus cutting the anal cell off squarely. In Loew's figure these veins form an obtuse angle at their junction and the anal cell is drawn out to a point. This species also differs from the description of *R. cingulata* in having the four light stripes on the thorax and in having more black on the femora.

It will be noted that in the description we have referred to the male as having six abdominal segments and the female as having seven. A careful examination of several species, together with Prof. Harvey's remarks on *Epochra canadensis* (Report Maine State College 1895, p. 123), has led us to adopt this view. Of course what Loew called the first segment is made up of the first and second, closely united; the third, fourth and fifth are always easily distinguishable and more or less similar in appearance throughout the different genera of this family; the fifth segment of the male is, however, in some species more elongated and conical; the sixth segment of the male is always small and partially or wholly concealed underneath the fifth; a careful examination, however, cannot fail to reveal it. In the female the sixth segment is similar to those preceding it, but the seventh is, in many species, more or less elongated, conical, or flattened, and often of a different color than the other segments. This is usually referred to as the ovipositor, or as the first segment of the ovipositor. Of course if we consider the ovipositor as being made up of modified abdominal segments and we certainly must in this group at least, it is not a matter of any great importance how many of these segments we call abdominal segments and how many of them shall be referred to as the ovipositor, but it seems as if the use to which the respective segments are put should decide this. As the seventh segment takes no part in making the puncture, and, as in some species (*R. ribicola*, *R. pomonella* and others), it differs very little in appearance, shape or structure from the segments which precede it, we see no reason why it should be any longer referred to as the ovipositor, or as a part of the ovipositor. Retracted within the seventh segment is the sheath of the ovipositor, and within this the ovipositor proper. When not in use these are telescoped within the seventh segment so that ordinarily little or none of the ovipositor is visible.

The female of *Rhagoletis ribicola* when depositing her eggs behaves in much the same manner as the female of *Epochra canadensis* as described by Prof. Harvey. It is interesting to note, however, that after the ovipositor is withdrawn from the berry she often turns round and sips up the small drop of juice that flows from the puncture.

This species is of considerable economic importance in this State (Washington) as each year the larvæ destroy much of the

fruit on the cultivated currant and gooseberry. The adults are most abundant late in June, when they may be found in considerable numbers around currant and gooseberry bushes. The eggs are deposited in the berries in which the larvæ feed until full grown, of course destroying the berries, and usually causing them to drop to the ground. There is but a single generation each year, the insect passing the Winter in the pupa state in the ground or underneath rubbish under the bushes. In a bulletin, soon to be issued by this Station, the life-history of this insect is given in detail under the popular name of the *Dark Currant Fly* to distinguish it from the other currant fly (*Epochra canadensis*) which also occurs quite abundantly throughout the State.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

PICTURES for the album of the American Entomological Society have been received from Charles F. Goodhue, Webster, N. H., and Charles C. Adams, Urbana, Ill.

YOUR journal is indispensable to working entomologists, either in applied or purely scientific fields, and I find the pages devoted to notes on Entomological Literature very convenient for reference.—MARY E. MURTFELDT.

THE volume of NEWS for 1897 was duly received. The eight volumes of the NEWS form the most valued portion of my entomological library. They are valuable for reference, entertaining to read, and pretty to look at.—A. W. PEARSON.

ODONATA. A SYNONYM AND THE BEARING OF ITS DISCOVERY ON THE CLASSIFICATION OF AGRION.—An examination of some material from Mexico, recently collected by Mr. Otis W. Barrett, has shown me that the species which I described as *Ischnura exstriata* (Proc. Calif. Acad. Sci. —2—iv, p. 493, 1895) is specifically identical with *Agrion denticolle* Burmeister, the type of which latter exists at Halle, Germany, where I have studied it. *Denticolle* is referred by Baron de Selys to the genus *Nehalennia*, a genus belonging to that section of the "grand genre Agrion" in which the females have no apical ventral spine on the eighth abdominal segment. *Ischnura* belongs to the section in which such a spine is present. There is no doubt that the female type of *I. exstriata* possesses this spine, nor is there any reason for disbelieving that the females of *denticolle* seen by de Selys lacked it. Burmeister's type, which de Selys did not see, has a suggestion of such a spine, while among Mr. Barrett's specimens are some females with, others without, this spine. I have no



hesitation in stating that *exstriata* Calvert is specifically identical with *denticolle* Burm., but it is evident that this discovery breaks down the only general distinction separating the two groups of genera represented by *Ischnura* and *Nehalennia* respectively. I find, moreover, that in *I. verticalis* Say, *I. perparva* Selys and *I. cervula* Selys female individuals of one and the same species exist which have this spine absent, extremely small or quite distinct.—PHILIP P. CALVERT.

ODONATA. THE FIRST FILLING OF THE TRACHEÆ WITH AIR.—Within half an hour after hatching from the egg, the young larva of *Sympetrum* (*Diplax*) *vicinum* Hagen—and the same is true for *Libellula quadrimaculata* L. and *Orthetrum cancellatum* L., as I observed at Jena, in June, 1896,—makes its first moult. Previously its tracheæ, though visible, contain no air. In watching some larvæ of *vicinum* execute this first moult recently (January, 1898), I observed that air first appears in the tracheal system, in the thoracic portion of the right, main, dorsal trachea and flows thence both forwards into the cephalic, and backwards into the abdominal tracheæ, consequently filling the tracheoles of the rectal tracheal gills at a measurably later period. I believe that this observation is new, at least for the Odonata. I regret that I could not determine precisely where the air enters, nor how, nor whether the air which early appears in the left, main, dorsal trachea enters independently, or from branches connecting it with the right dorsal trunk. I hope that detailed statements may appear later.—PHILIP P. CALVERT.

NEWS OF THE DEPARTMENT OF INSECTS, U. S. NATIONAL MUSEUM.—The collection of insects of the U. S. National Museum is rapidly increasing. A great donation, the details of which have just been completed, is the large Hubbard and Schwarz collection of Coleoptera. This is one of the first collections of Coleoptera in the United States. It comprises from 10,000 to 12,000 species brought together by Messrs. Hubbard and Schwarz during the last twenty-five years. It has especial value from its fine condition and accurate labelling, affording possibly the best source of information regarding geographical distribution. This collection adds about 3000 species to the collection of Coleoptera of the Museum. It contains a moderate number of types, but a large number of co-types of the species described by LeConte and Horn. It also contains some exotics, notably a good collection of West Indian micro-Coleoptera, and is practically unique in its large series of coleopterous larvæ and pupæ in alcohol.

The death of Mr. M. L. Linell, in the spring of 1897, was a severe blow to the Department, but a re-arrangement has been effected by which an excellent working force has been secured. The Department has been extremely fortunate in attaching to it Dr. Harrison G. Dyar. Since the departure of Dr. John B. Smith there has practically been no lepidopterist in Washington, and Dr. Dyar's advent is especially welcome. He has entirely re-arranged the collection of Lepidoptera and has deposited in

the Museum his own large collection of some 15,000 specimens. The force as at present constituted is L. O. Howard, Honorary Curator; Wm. H. Ashmead, Assistant Curator and Custodian of Hymenoptera; Harrison G. Dyar, Custodian of Lepidoptera; E. A. Schwarz, Custodian of Coleoptera; D. W. Coquillett, Custodian of Diptera; and R. P. Currie, Aid.

For a Department which has bought no large collections, the Department of Insects is rich in type material. The catalogue shows the existence of over 4000 types in the different orders.

Recent accessions of special value are a collection of European bees, representing all of the genera known except one; the Hubbard material in all orders recently collected in Arizona; the African material collected in Liberia by Cook and Currie; the African and Siamese material collected by Dr. W. L. Abbott; a collection of Coccinellidæ and Psyllidæ made by Albert Koebele in Japan, Australia, China and Mexico; a collection of parasitic Hymenoptera made by the same collector in the countries above indicated; a very large collection of Japanese insects in all orders presented by the Imperial University of Tokio through Professor Mitsukuri; the T. A. Williams collection of Aphididæ, comprising over 800 slides of forms collected in the Northwest. Smaller donations are constantly being received from collectors and specialists and the number of those received in the course of the year form very important additions to the collection.

The facilities for the preservation of specimens have been very considerably increased, several hundred of the permanent glass-covered drawers having been added.

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## Entomological Literature.

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Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms.

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**4.** The Canadian Entomologist, London, Ont., Feb., '98.—**5.** Psyche, Cambridge, Mass., Feb., '93.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; publications of, '97.—**9.** The Entomologist, London, Feb., '98.—**11.** The Annals and Magazine of Natural History, London, Jan., '98.—**15.** Biologia Centrali-Americana, London, part cxxxvii, Sept., part cxxxix, Dec., '97.—**19.** Horæ Societatis Entomologicæ Rossicæ, xxxi, 1-2, St. Petersburg, '97.—**22.** Zoologischer Anzeiger, Leipsic, '98.—**38.** Wiener Entomologische Zeitung, xvi, 10.

Dec. 25, '97; xvii, 1, Jan. 25, '98.—**40.** Societas Entomologica, Zurich-Hottingen, '98.—**41.** Entomologische Nachrichten, Berlin.—**45.** Deutsche Entomologische Zeitschrift, '97, ii, Dresden, Jan. 12, '98.—**47.** The Zoologist, London, Jan. 15, '98.—**59.** Sitzungsberichte, Gesellschaft der naturforschenden Freunde, Berlin, '97.—**60.** Anales del Museo Nacional de Buenos Aires, v, '96-'97.—**61.** Natural Science, London, Jan., '98.—**62.** Konglige Svenska Vetenskaps-Akademiens, Stockholm.—**63.** 'Fauna.' Verein Luxemburger Naturfreunde, vii, '97.—**64.** Annalen der k. k. Naturhistorischen Hofmuseums, xii, 1, Wien, '97.

**The General Subject.**—Insect World: A Monthly Magazine. Edited by Y. Nawa. Gifu, Japan. Appears on the 15th of each month, vol. i, No. 1, on Sept. 15, '97; No. 4, Dec. 15, '97. Wholly in Japanese.—Claypole, A. M. Some points on cleavage among Arthropods, 1 pl., Transactions American Microscopical Society, xix, Buffalo, Dec., '97.—Comstock, J. H. and Needham, J. G. The wings of insects, i, figs., American Naturalist, Boston, Jan., '98.—Daguillon, A. On a leaf Dipteroecidium of *Hypericum perforatum*, figs., Revue Generale de Botanique, x, 109. Paris, Jan. 15, '98.—Day, G. O. A new setting-board, figs., **9**.—Eimer, G. H. T. and Fickert, C. Orthogenesis der Schmetterlinge. Ein Beweis bestimmt gerichteter Entwicklung und Ohnmacht der natürlichen Zuchtwahl bei der Artbildung. Die Entstehung der Arten. II Theil. Zugleich eine Erwiderung an August Weismann. Leipzig, Verlag von Wilhelm Engelmann, 1897. Pp. xvi. 513; 235 figs., 2 pls. This volume is the second part of the author's "Entstehung der Arten auf Grund von Vererben erworbener Eigenschaften nach den Gesetzen organischen Wachstums." We cannot—at present at least—attempt to review this volume, but it is almost obligatory to indicate its contents: General Introduction, on definitely directed development (Orthogenesis) and on impotence of Darwinian selection in the formation of species; So-called germinal selection—criticism and reply; Origin of the similarity to leaves among butterflies; The most important directions of the development of butterflies, types of marking and pseudo-mimicry; Directions of the development in single families of butterflies and further [considerations] on mimicry; Directions of the development of the Heterocera and Microlepidoptera; Generalities on Mimicry in butterflies; Regular and varied stages of marking and color in the different wing-surfaces of day butterflies; Preponderance of one sex (male and female preponderance), Sexual Dimorphism, Sexual Selection, Origin of ornamentation; External, especially climatic influences as causes of the formation of species of butterflies; Experiments on the artificial action of heat and cold on development; Summary of the important results, Conclusion and Special Remarks, List of figures, author and subject indexes.—Emery, C. Instinct, intelligence and speech, Biologisches Centralblatt, Leipsic, Jan. 1, '98.—Finn, F. Contributions to the theory of warning colors and mimicry, No. iii. Experiments with a Tupaia and a Frog. Journal, Asiatic Society of Bengal, lxvi, ii, 2. Calcutta, Aug. 13, '97.—

Gahan, C. J. *Dipeltis*, a fossil insect? figs., **61**.—Heymons, R. Composition of the insectan head, **59**, No. 7.—Marlatt, C. L. A brief historical survey of the science of entomology with an estimate of what has been, and what remains to be accomplished. Annual address of the President for the year 1897. Proceedings, Entomological Society of Washington, iv, 2, '98.—Morse, A. P. Pacific coast collecting, ii, **5**.—Schlechtendal, D. H. R. The galls (Zooecidiæ) of German vascular plants, ii, Jahresbericht, Verein für Naturkunde, Zwickau '95, '96.—Smith, J. B. George H. Horn. Science, N. Y., Jan. 21, '98.—Trimen, R. Mimicry in insects, Nature, London, Jan. 27, '98.—Verhoeff, C. Still some words on segmental appendages of insects and myriopods, **22**, Jan. 10.—Wiskott, M. Lepidopterous hermaphrodites and abnormalities of my collection [two papers], 3 pls., **45**.

**Economic Entomology.**—Abstracts of some recent papers, **7**, Experiment Station Record, ix, 3-5.—[Bergholz, L.] Destruction of Locusts [in Natal], Consular Reports, lvi, 209, Washington, Feb., '98.—Card, F. W. Observations on the codling-moth, figs., Bulletin 51, U. S. Agricultural Experiment Station of Nebraska, Lincoln, Dec. 20, '97.—Decaux. *Carpocapsa pomonana*, **63**.—Howard, L. O. The gipsy moth in America: a summary account of the introduction and spread of *Porthetria dispar* in Massachusetts and of the efforts made by the State to repress and exterminate it, **7**, Bulletin No. 11, new series.—Jablonski, J. Directions for destroying the halmfly (*Chlorops tæniopus*), Rovartani Lapok, v, 1, Budapest, Jan., '98.—Lindau, G. On a caterpillar disease observed in the Berlin Botanical Garden. Verhandlungen, Botanischen Vereins der Provinz Brandenburg, '97, Berlin.—Smith, J. B. The San José scale and how it may be controlled, Bulletin 125, New Jersey Agric. Exper. Station, New Brunswick, N. J., Nov. 27, '97.

**Arachnida.**—Cambridge, F. O. P.—Arachnida Araneidea, vol. ii, pp. 9-40, pls. i-ii, **15**, pt. 137.—Cambridge, O. P. Arachnida-Araneidea, vol. i, 2 pls., pts. 137, 139, **15**.—Lönnerberg, E. A revision of the Linnean type specimens of scorpions and pedipalps in the zoological museum of the University at Upsala, **11**.—Marshall, G. A. K. Spider versus wasp, **47**.—Piersig, R. Hydrachnid forms from the heights of Tatra, **22**, Jan. 10.—Pocock, R. I. Stridulation in some African spiders, figs., **47**.—Simon, E. Arachnida collected in Terra del Fuego by M. Carlos Backhausen (2nd memoir), **60**—Trouessart, E. Mode of topographic distribution of the Entomostraca and marine Acarina on the coasts of France and description of *Acaromantis squilla* Trt. Memoires, Société Nationale des Sciences naturelles et mathématiques de Cherbourg xxx, '96-'97.

**Myriapoda.**—Silvestri, F. Chilopods and Diplopods from the voyage of Dr. E. Festa to Ecuador and neighboring regions, 1 pl., Bollettino dei Musei di Zoologia ed Anatomia comparata, R. Università di Torino, No. 305, Oct. 18, '97.

**Apterygota.**—Heymons, R. Formation and structure of the

alimentary canal of lower insects, **59**, No. 7.—Lie-Pettersen, O. J. Norwegian Collembola, 2 pls. Bergens Museums Aarborg for 1896, 1897.

**Orthoptera**.—Fordas, L. The digestive apparatus of the Orthoptera—morphological, histological and physiological studies of this organ, and its importance for the classification of the Orthoptera. Annales des Sciences Naturelles-Zoologie (8), v, 1-3. Paris, Oct., '97-Jan., '98.—Dominique, J. Orthopterological notes: On the development of the wings in the genus *Nemobius*, Parthenogenesis and parasitism in *Bacillus gallicus*. Bulletin, Société des Sciences Naturelles de l'Ouest de la France, vii, 3. Nantes, Sept. 30, '97.—Giardina, A. First embryonic stages of *Mantis religiosa*, Monitore Zoologico Italiano viii, 12. Florence, Dec., '97.—Hancock, J. L. The food-habits of the Tettigidæ, Entomologist's Record, London, Jan. 15, '98.—Kulwiec, C. v. The skin glands of Orthoptera and Hemiptera-Heteroptera, figs., **22**, Jan. 24.—Rodzianko, W. See Diptera.—de Saussure, H. and Pictet, A. Orthoptera,\* pp. 305-320 pt. 137; 329-345, pl. xvi, pt. 139, **15**.—Scudder, S. H. The Acridian subfamily Mastacinae in the United States, **5**.

**Neuroptera**.—L. H. East Prussian ant-lions, **40**, Feb. 1.

**Hemiptera**.—Baker, C. F. Four new species of *Phlepsius*,\* **4**.—Berg, C. Contribution to the study of the Hemiptera of Tierra del Fuego, **60**.—Bergroth, E. A new Tingid; New or little known American Aradidæ;\* On some American Capsidæ, **38**, xvii, 1.—Champion, G. C. Rhynchota Heteroptera vol. ii, pp. 1-32, pls. i, ii,\* **15**, pt. 139.—Cholodkovsky, N. On root-lice, figs. [In Russian], **19**.—Fowler, W. W. Rhynchota Homoptera, vol. ii, pl. xii, **15**, pt. 137.—Mordwilko, A. On the biology and morphology of the plant-lice [In Russian], **19**.—Osborn, H. and Ball, E. D. Studies of North American Jassoidea,\* 6 pls. Proceedings Davenport Academy of Natural Sciences, vii. Davenport, Iowa, Jan., '98.—Tinsley, J. D. An ants' nest Coccid from New Mexico,\* fig., **4**.

**Coleoptera**.—Blackburn, T. Revision of the genus *Paropsis*, ii. Proceedings, Linnean Society of New South Wales, '97, pt. i, Sydney, Sept. 17, '97.—Blandford, W. F. H. Coleoptera, vol. iv, pt. 6, pp. 153-168, pl. vi, pt. 137, pp. 177-184,\* pt. 139, **15**.—Faust, J. Revision of the genus *Episomus* Schönherr, **19**.—Grouvelle, A. Note on the *Pelonomus pubescens* Blanch. and *simplex* Berg. and description of some new Dryopidæ and Helmidæ, **60**.—Hopkins, A. D. On the history and habits of the "wood engraver" ambrosia beetle, *Xyleborus xylographus* (Say), *X. saxeseni* (Ratz.)—with brief descriptions of different stages, 2 pls., **4**.—Luja, E. *Cetonia aurata* in ants' nests, **63**.—Reitter, E. The species of the coleopterous genus *Notiophilus* Dumeril of European and neighboring lands, **41**, Dec., '97; Review of the known species of the coleopterous genus *Scleropatrum* Seidl. of the palæarctic fauna, **38**, xvii, 1.—Wickham, H. F. The Coleoptera of Canada: xxviii. The Cerambycidæ of Ontario and Quebec, figs., **4**.

**Diptera.**—Dahl, F. *Puliciphora*, a new flea-like genus of Diptera (transl. from Zool. Anz.), **11**.—Mik, J. On gall-flies, 1 pl., **38**, xvi, 10.—Rodzianko, W. On the parasitism of the larvæ of *Ræselia antigna* Meigen in the interior of the larvæ of *Forficula tomis* Kolenati. [In Russian] **19**.—van der Wulp, F. M. Diptera, vol. ii, pp. 345-360, pt. 137; pp. 369-376,\* pt. 139, **15**.

**Lepidoptera.**—Berg, C. Description of three new Lepidoptera in the collection of the Museo Nacional de Buenos Aires, 3 figs.; On the geographical distribution of *Ophioderes materna* L.; Lepidopterological communications on twenty-five South American Rhopalocera, **60**.—Butler, A. G. A revision of the Pierine butterflies of the genus *Terias* from the old world, **11**.—Davidson, et al. [Extract]. Butterfly life in the tropics of India, **5**.—Druce, H. Lepidoptera Heterocera, vol. ii, pp. 409-416, pls. lxxix, lxxx, pt. 137, pp. 425-440, pls. lxxxiii, lxxxiv,\* pt. 139, **15**.—Dyar, H. G. The larvæ of the Australian Eucleidæ (Annual address of the retiring president of the Cambridge Entomological Club, 14 Jan'y, '98), **5**.—Godman, F. D. and Salvin, O. Lepidoptera Rhopalocera,\* vol. ii, pp. 441-448, **15**, pt. 137.—Grote, A. R. The classification of the day butterflies—i, 1 pl., **61**.—Hanham, A. W. Notes on collecting "at light," **4**.—Hofmann, O. Three new Tinean genera, figs., **45**.—Holmgren, E. Studies on the morphology of the testes and of cortical male genital organs of the Skandinavian Macrolepidoptera, 9 pls. [In Swedish] **62**, Handlingar, xxvii, 4, '95.—Pauls. To produce summer broods [of Lepidoptera], **40**, Jan. 15.—de Rocquigny-Aanson, G. Retarded butterflies. Revue Scientifique, Paris, Jan. 15, '98.—Schultze, L. S. Experimental researches on native Macrolepidoptera, Naturwissenschaftliche Wochenschrift. Berlin, Jan. 30, '98.—Sommer, C. *Sciaphila osseana* Sc. var. *niveosana* Packard, **45**.—Staudinger, O. Some new species and varieties of butterflies, **45**.—Walsingham, Lord and Durrant, J. H. Revision of the nomenclature of Microlepidoptera, Entomologists' Monthly Magazine, London, Feb., '98.—Wiskott, M. See General Subject.

**Hymenoptera.**—Adlerz, G. Myrmecological studies, iii: *Tomognathus sublævis* Mayr. 1 pl. [In Swedish] **62**, Bihang, xxi, iv, 4, '96.—Cholodkovsky, N. Contributions to a monograph of the conifer-lice [*Chermes*], chaps. v-vii, 6 pls., **19**.—Cockerell, T. D. A. *Panurginus clypeatus*, **4**; Synopsis of the North American bees of the genus *Nomia*,\* **9**.—Kohl, F. F. *Eremiaspheciun*, a new genus of Hymenoptera, family Sphegidae, **64**.—Konow, F. W. Two new Siricidae and some palæarctic Tenthredinidae, **41**, Dec., '97; Systematic and critical revision of the Sawfly tribe Lydini, **64**; Further contribution to the synonymy of the Tenthredinidae, **38**, xvi, 10, xvii, 1.—Kriebaumer, Dr. The genus *Joppa*,\* **41**, Jan., '98.—Luja, E. See Coleoptera.—Marshall, G. A. K. See Arachnida.—Stadelmann, R. Anatomical study of a hermaphrodite of *Dendrolimus fasciatellus* (Mén.), **59**, No. 8.

## Doings of Societies.

A special meeting of the American Entomological Society was held Jan. 27, 1898, Dr. Calvert, vice-president, presiding. Mr. Stanley T. Kemp presented a specimen of *Euphanessa mediana* Slosson, new to the collection, from Anglesea, N. J. Dr. Calvert read a biography of the late Dr. Horn, which will shortly be published in the Transactions (American Entomological Society). Same speaker exhibited some larvæ of dragonflies hatched in the house and he thought the circulation of the blood, which could be well seen, might prove of interest to the members. The single blood vessel or aorta was described as well as the character of the blood and the corpuscles. Although the legs of the larvæ are long, the corpuscles do not go beyond the bases of the legs. The difficulty of observing the dorsal blood-vessel in imagos was mentioned. Mr. Johnson stated that in going over the literature of the Syrphidæ he had found a number of list names which were not now recognized in the literature. Among them was *Bacca keenii* Will. which is the *tarchetius* of Walker. This name *keenii* was given in the local list published by Keen, a Philadelphian, in the Canadian Entomologist in August, 1884. Dr. Skinner called attention to an illustrated journal of entomology published in Japan in the language of the country. Mr. Liebeck called attention to a curious mailing box for insects. It was pasteboard, and was supported from the inside by a double wooden gallows-like arrangement.

HENRY SKINNER, M.D., *Secretary.*

At the last meeting of the Feldman Collecting Social held on February 8, at the residence of Mr. H. W. Wenzel, 1523 S. 13th St., Phila., the address of the retiring President, Dr. H. G. Griffith, was read by the Secretary. It dwelt on the value of fraternity and good-fellowship among entomologists, and on the loss to science in general by the petty jealousies and unfriendliness of co-laborers in that field. Prof. Smith exhibited sketches illustrative of structural details of the peach-borer, *Sannina exitiosa*. The antennæ differ in the sexes, and possess at the base an ear-like sensory organ, the first and second joints being modified for its accommodation. Variation in the scaling of individuals was shown, and the presence of jointed mandibles

was dwelt on as an unusual character. In the female the maxillary palpi are 2-jointed, in the male 3-jointed; the presence of these palpi was apparently not before noted in the Sesiidæ. The difficulty of inducing the sexes of this species to mate was mentioned, and although eggs were laid within twenty-four hours after the insect emerged from the pupa, none were fertilized. The females possess eight ovarian tubes, each containing about sixty eggs. Mr. Wenzel remarked on the apparent seldomness of copulation in the peach-borer. Dr. Skinner spoke on the extensile structure of the club of antenna of butterflies, especially in regard to a species of *Argynnis*, in which a telescoping of that part was noticed. He presented to the Social on behalf of Mr. Geo. B. King, of Lawrence, Mass., a series of microscopical slides containing coccids from ant's nests. He also referred to the care of specimens from pests, etc. Naphthaline is fatal to pests if the boxes be perfectly tight; otherwise it is likely to be ineffective.

Mr. Aaron mentioned the efficacy of bisulphide of carbon in destroying pests. The fumes will kill all stages but the egg. He further spoke on the habits of *Neoclytus erythrocephalus* and *Elaphidion*. Discussed by Messrs. Smith, Johnson and Laurent.

Mr. H. Wenzel reported the capture of thirty specimens of *Casonia ludoviciana* at Camden, N. J., on January 29; also two larvæ of probably *Pyraetomena lucifer*.

Mr. S. Frank Aaron was nominated for membership.

WM. J. FOX, *Secretary*.

The following officers were elected at the meeting of the Newark Entomological Society held January 9th:

*President*, A. P. Schleckser.

*Vice-President*, H. H. Brehme.

*Treasurer*, Simon Seib.

*Secretary*, A. J. Weidt.

*Librarian*, John Engelman.

*Curator*, A. P. Schleckser.

A. J. WEIDT, *Secretary pro. tem.*

## OBITUARY.

ERNST LUDWIG TASCHENBERG, Professor of Entomology in the University at Halle, Germany, died Jan. 19, 1898. He was born in 1818, and published on Economic Entomology and on the Hymenoptera.



# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX.

APRIL, 1898.

No. 4.

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### RECOLLECTIONS OF OLD COLLECTING GROUNDS.

By H. F. WICKHAM, Iowa City, Iowa.

IV.—The Lower Rio Grande Valley (concluded).

Chrysomelidæ are quite numerous in these regions, but most of them rather inconspicuous. A few specimens of *Megascelis texana* Linell, an insect looking something like a small *Lema*, bright greenish above, testaceous or sometimes slightly greenish beneath, the elytral suture and margin brownish yellow, were found in the heavy thickets. With them dwelt *Lema lebioides* Linell, easily recognized by its reddish yellow color, and the elytral pattern, consisting of a large square scutellar spot and a longitudinal stripe which begins at the humerus and broadens obliquely towards the suture and apex, the latter of which it does not reach. The black color of the coxæ and side pieces of the meso- and metathorax mentioned in Mr. Linell's description is not constant. Some are almost unicolorous beneath. *Anomæa mutabilis* was commonly seen feeding on *mimosas*, but became much rarer toward the end of my stay. *Euryycopa lecontei* was rather seldom met with, chiefly on low bushes growing in sandy spots. *Chlamys memnonia* Lac. fed on *mesquite*, and was by no means uncommon both at Brownsville and Point Isabel. *Exema conspersa* was beaten from various weeds, where it might be seen

lodging in the axils of the leaves for all the world like the excrement of some caterpillar; indeed, so close is this resemblance that, when not wishing to spare time to examine the things closely nor to wait for them to move, I have often practiced the plan of slightly pinching the suspicious object between my thumb and forefinger. If it then crushes it is not an *Exema*, otherwise it may be one—and goes into the collecting bottle. *Griburius larvatus* feeds on *mesquite* in July, but I did not find it common. In the genus *Cryptocephalus* I got *trizonatus* Suffr. on *Cassia*, also numerous examples of *fulguratus*, *defectus* and *mutabilis* on vine-covered bushes, while a few *pumilus* were obtained on shrubs on the open prairie. *Diachus chlorizans*, a remarkable pretty little insect with yellow body and metallic-green wing covers was found among the vines. *Typophorus viridicyanea* was taken abundantly at Laredo under a morning-glory, while at Brownsville it seemed quite rare. Several specimens of *Chrysomela disrupta* came from a plant which I take to be an *Ambrosia*. *Plagioderma thymaloides* Stal was tolerably plentiful on quite a variety of plants throughout the whole length of my stay. It differs widely in facies from our other members of the genus being about the size and form of *Thymalus fulgidus*, testaceous, pronotum with a dark median stripe, elytra piceous, slightly metallic, with yellowish outer margin. The thoracic punctuation is fine and sparse, deeper and coarser at the sides, and there is a well-marked lateral fovea about equidistant from the side and hind margins. The elytra are distinctly subseriately punctured; legs testaceous, tarsi blackish toward the tip. *Diabrotica balteata* swarmed on flowers almost everywhere, in the fields and along the roadsides. Among the Halticini, *Homophæta interjectionis* was rather common; *Edionychis texana* occurred once. *Disonycha 5-vittata* fed in numbers on willows; *D. crenicollis* on *Aster spinosus*. *Disonycha varicornis* makes a departure from the usual food habits of this genus in feeding on a cactus—*Opuntia leptocaulis*—often swarming on these plants. *Haltica burgessi* was abundant at one spot out in the thorny chaparral, but I never met with it elsewhere. Of *Odontota gracilis* I took one specimen without any blue on the sides of the elytra. The Cassidini are well represented, six species having been thus far identified from the Brownsville material while others, unknown, still remain. *Cassida pallidula* was seen feeding on *Solanum*; *C. nigripes* was

beaten from vines in the government pasture, along with *Coptocyclus aurichalcea* and *C. extensa*. *C. bonvouloirii* was confined to the more tropical jungles and may be readily told from our other species by the small size and curious coloration. Cabinet specimens are yellowish, the antennal tip piceous, while on the upper surface of the body a broad black line describes a nearly circular figure extending forward onto the base of the thorax and backward somewhat less than two-thirds of the length of the elytra. Inside of this figure three black spots are usually seen; one common, anteriorly, and behind these a pair, one on each side of and close to the suture. In life the surface is golden; this is true also of another *Coptocyclus*, of large size, found in the same situations and referred by Dr. Horn to *C. leprosa* Boh. In this the color of cabinet specimens is yellowish except the antennal tips and the sides of the thoracic segments, which are dusky. The elytra are strongly elevated at base, forming a sutural and a humeral gibbosity, while from about the middle of the side margin a raised line runs diagonally up to meet the sutural elevation. The insect reaches a length of nine millimeters and is by no means rare.

The Tenebrionidæ were not numerous in species, though certain forms were very abundant—for example, *Eleodes seriata* and a *Paratenetus*, both of which were beaten from herbage. I never noticed this habit of climbing plants strongly developed in other *Eleodes*, though it is no uncommon thing to see *E. hispilabris* and *E. extricata* in bushes on the plains of New Mexico and Arinona. Of *E. tricostata* I met with a single dead specimen at Point Isabel and no other species of the genus occurred to me near Brownsville. Two *Anædus cribratus* Dej. and *longicornis* Champ., both new to our fauna, were found amongst rubbish in the government reservation. *Arrhenophilita ferruginea* was detected boring in polyporoid fungi with *Rhipidandrus*. *Talanus langurinus* was quite abundant in thickets and numbers might be obtained by beating. *Helops farctus* was shaken from mesquite trees. *Pyanisia tristis* Casteln. (new to our fauna) was found under logs near a resaca in the woods. It may be distinguished from *P. opaca* by the rather deeply bisinuate base of the prothorax.

The remaining Heteromera are mostly inconspicuous or well-known species, though a few are of interest. *Listronychus pili-*

*ferus* Champ., is a very abundant species, being found on herbage in the thickets and less frequently on the more open ground. It is active and takes flight very readily if disturbed. *Polypria crux-rufa* is new to our lists, and is provisionally referred to the family Melandryidæ by Mr. Champion in the "Biologia Centrali-Americana." I took one specimen at Brownsville, and I think Prof. Townsend got another. It is recorded from various points in Central America, ranging from Mexico to Nicaragua. The insect is about eight millimeters long, blackish, the abdomen, legs, antennæ and elytra yellowish, though not of equal depth of color. The elytral suture is marked with a dark stripe, somewhat dilated at base and apex and crossed by a transverse post-median band. The color of these markings seems to vary; Chevrolat describes them as being rufous in his specimen; Champion says they are piceous on the edges, while in my example they are entirely piceous. *Pyrota tenuicostatus* Duges (*dubitabilis* Horn) was noticed in great numbers by Prof. Townsend early in the season, but being late I only got one. *Epicauta tarsalis* fed in small swarms on *mesquite*.

The Rhynchophora abound in species, most of which are, for the present, indeterminate. *Coleocerus marmoratus* was observed on *mesquite* and *huisache*; *Anthonomus ligatus* on *Aster spinosus*. *Anthonomus grandis*, the destructive cotton weevil, was at work in the fields. *Cylas formicarius*, a sweet-potato pest, was seen but once. Several rare Scolytidæ and Anthribidæ were beaten from dead twigs, but as they are small, and no definite record of food-plant can be given, they need no further mention here.

Returning about the last of July—the trip to Alice was made without entomological results *en route*. However, a passing interest was aroused by the driver losing his way during the night, most of which was consequently spent in driving aimlessly over the wide prairies. Only daylight and the intervention of a Mexican cowboy sufficed to set him right after he had retraced much of the distance back towards Brownsville. From Alice the railroad was called into service, and a short stop at Laredo served to show that the fauna there was characteristic of the arid Sonoran zone.

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A PHOTOGRAPH for the album of the American Entomological Society has been received from Charles A. Blake.



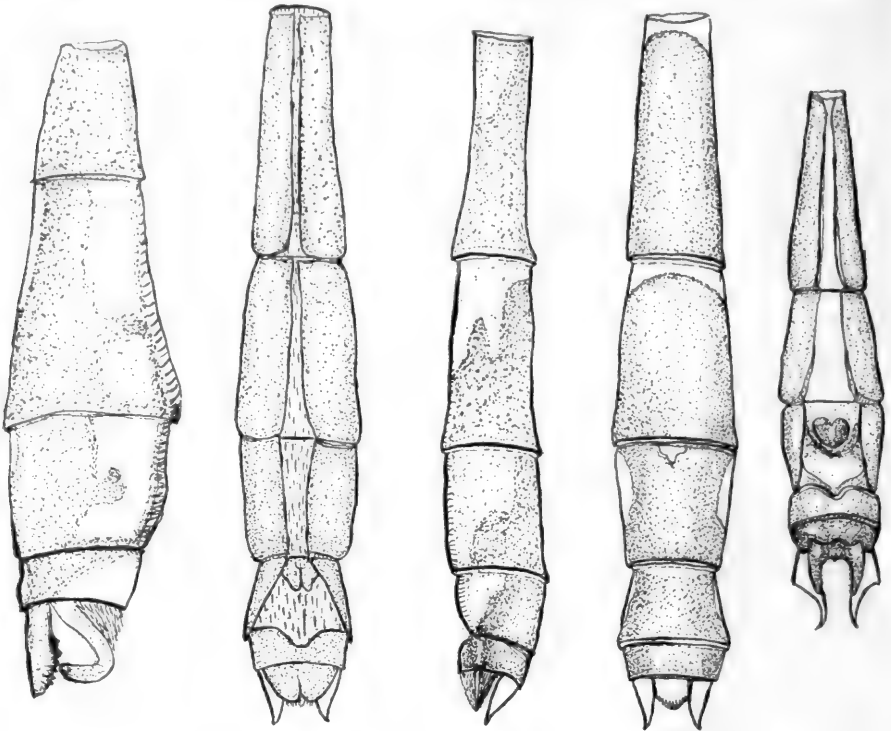


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

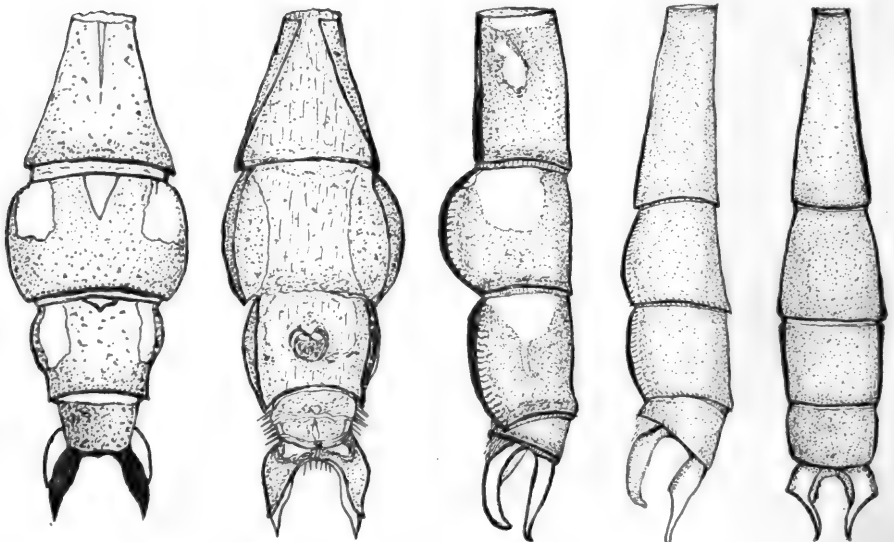


Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

THE ODONATA OF MAINE (Harvey).

(See page 85.)

EXPLANATION OF PLATE.

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|--|--|
| Fig. 1.—Right side view of <i>Ophiogomphus anomalus</i> n. sp. ♂ X 10. | Fig. 5.—Ventral view of <i>G. neriensis</i> Hagen ♂ X 8. |
| Fig. 2.—Ventral view of <i>Gomphus neriensis</i> Hagen ♀ X 8.          | " 6.—Dorsal view of <i>G. Scudderi</i> Selys ♂ X 4.      |
| Fig. 3.—Left side view of <i>G. neriensis</i> Hagen ♀ X 8.             | " 7.—Ventral view of <i>G. Scudderi</i> Selys ♂ X 4.     |
| " 4.—Dorsal view of <i>G. neriensis</i> Hagen ♀ X 8.                   | " 8.—Left side view of <i>G. Scudderi</i> Selys ♂ X 4.   |
|  | " 9.—Left side view of <i>G. neriensis</i> Hagen ♂ X 8.  |
|  | " 10.—Dorsal view of <i>G. neriensis</i> Hagen ♂ X 8.    |

All of these figures represent the apical abdominal segments of the respective insects.

**CONTRIBUTIONS TO THE ODONATA OF MAINE.—III.**

By F. L. HARVEY, Orono, Maine.

(Continued from p. 64, vol. ix.)

*Remarks.*—We have never seen the types of *G. nævius*, nor of *G. albistylus*. The single ♀ taken in 1890, and the three taken this season, came from the same locality, and have been referred to *G. nævius* Hagen by Mr. Calvert and myself. The males taken this season certainly belong to the females taken, as they were captured the same day at the same locality, and one in copula. Both the males and females are variable in size, depth of color and markings. We cannot escape the conviction that *G. nævius* and *G. albistylus* belong to the same variable species. Mr. Calvert, who shares this opinion, says: "I have gone over your specimens again and compared them with the descriptions and with the data of variability mentioned in your letter. I now incline strongly to the opinion you suggest, viz., that *G. nævius* and *albistylus* are specifically identical."

Selys says of *G. nævius*: "Tres semblable a l'*albistylus* mais beaucoup plus petit." As we have specimens that nearly agree in measurement with those mentioned and find the size quite variable in the males, the distinction of size would seem a trivial one. Again, *G. albistylus* was described from a single ♀ from Maine and *nævius* from a few females from Pennsylvania. The material was entirely inadequate to show variability. For the present we leave the species distinct, as our females agree more nearly with the description of *G. nævius*, but if the future shows that these forms should be merged then *G. nævius* Hagen would have to be dropped and the species will be known as *G. albistylus* Hagen, as this name has priority. Should the arrangement of Needham be adopted then the form would be *Gomphus* (*Lanthus* Needham) *albistylus* Hagen.

**63. *Gomphus spicatus* Selys.**

Taken July, 1896, in a pasture near Orono; also June 26, 1897, at S. Lagrange over a brook (Harvey). Both specimens were females. One specimen had the outer triangle of both of the hind wings crossed by a single vein.

**22. *G. exilis* Selys.**

Common in wood-roads at S. Lagrange, June 26, 1897 (Harvey).

42. **G. brevis** Selys.

Chemo Stream, Bradley. A scarce species, flying with *G. nævius* and *Hagenius brevistylus* over swift water. Two males July 8, 1897 (Harvey).

43. **G. abbreviatus** Hagen.

June 26, 1897, S. Lagrange. Along wood-roads. A single pair in copula. A scarce species (Harvey).

## Subfamily 4.—ÆSCHNINÆ.

16. **Anax junius** Drury.

Aug. 15, 1897, Orono (Bartle Harvey). This was reported in a previous article from a specimen in the University collection. Several specimens were seen during August and September over grass and grain fields.

17. **Basiaeschna Janata** Say.

Western Maine (Miss Furbish). S. Lagrange (Harvey), Westbrook (Ricker), 1897.

18. **Æschna constricta** Say.

W. Maine (Miss Furbish).

41. **Boyeria vinosa** Say.

Penobscot River at N. E. Carry, Birch Stream, Sunk Haze, Greenfield and Orono. This species is a night-flyer, at least it is on the wing in the late twilight. Several specimens were taken about the home and sheds in spider-webs. Along streams they show a preference for falls, dams and sluices. Rather common during August and September.

## Subfamily 5.—CORDULEGASTERINÆ.

45. **Cordulegaster diastatops** Selys.

A single ♀ taken at Sunk Haze Stream, Greenfield, in August, 1893. It is scarce in this part of Maine.

## Subfamily 6.—CORDULINÆ.

64. **Somatochlora elongata** Scud.

August, 1892, fifteen miles at sea off Scoodic Point. This specimen, a ♂, came aboard of our yacht and lit on the main sail. It seemed wearied, and was easily taken (Harvey).

65. **S. elongata** var. **minor** Calvert's MS.

Bradley, July 8, 1897, over a small brook in a meadow (Harvey). This form was referred to Mr. Calvert, who named it as



above, and said: "It is a MS. and collection name of my own as I have never been able to find any previous name for this form."\*

28. **Neurocordulia Uhleri** Hag.

. Western Maine (Miss Furbish).

29. **Tetragoneuria cynosura** Say.

Rangeley (Miss Furbish).

65. **Cordulia Shurtleffi** Scud.

A single ♂ taken July 6, 1897, over a small pond in Colburn's pasture near Orono (Bartle Harvey).

46. **Didymops transversa** Say.

Rangeley (Miss Furbish), Foxcroft July 7, and S. Lagrange June 26 (Harvey).

Subfamily 7.—LIBELLULINÆ.

34. **Lencorhinia proxima** Calvert.

This was reported in a previous paper from a single broken specimen in the University of Maine collection, but it proves to be an abundant species. Fully fifty specimens were taken over small ponds during June and July by the writer and his son, Bartle Harvey. The bloom on some males extended to the sixth abdominal segment. One male had, on the basal half of the dorsum of segments 4-7, a narrow yellow line. On two males these lines were wanting on even 6 and 7. On two males the bloom extended on to the fifth segment. The bloom is not continuous on the segments affected, but there are bare places that show as black spots.

35. **L. intacta** Hag.

Westbrook (Ricker), 1897.

36. **Diplax rubicundula**.

S. Lagrange, June; N. W. Carry, Aug. 26, 1897 (Harvey); Rangeley (Miss Furbish).

32. **Libellula exusta** Say.

Westbrook (Ricker), 1897.

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\* P. S.—The chief characteristics of "var. *minor*" compared with its nearest allies, *elongata* Scud. and *Walshii* Scud., are the absence of an inferior, transverse orange band on the frons connecting the pale spots of the genæ; vertex and nasus entirely metallic green; occiput black; yellow of the mesepimeron an oval spot; dorsum of 10 and the superior appendages black throughout; the latter similar to those of *elongata*, but having (in addition to the two external, lateral, subbasal teeth seen when the appendages are examined from above) a third, larger, subbasal, *inferior* tooth at a level *between* those of the two lateral teeth; inferior appendage two-thirds as long as the superiors. Abdomen 30.5, hind wing 33. Maine, as above; Franconia, N. H., by Mrs. A. T. Slosson. I have also a male and a female from Sherbrooke, Quebec, by l'Abbé Begin, which are intermediate, to some extent, between *Walshii* and *minor*.—P. P. CALVERT.

31. *L. 4-maculata* L.

Rangeley (Miss Furbish).

33. *L. pulchella* Drury.

Reported from a specimen found in the University of Maine collection, but since found in great abundance over ponds and rivers. About Orono (Harvey), Auburn (E. D. Merrill) and Westbrook (Ricker).

*Remarks.*—Species reported for the first time in this article are numbered from 54 to 66. The numbers lower than 54 refer to species reported in ENT. NEWS, vol. ii, Nos. 3 and 4, 1891, and in vol. iii, Nos. 4 and 5, 1892. This article includes thirteen species not before reported from Penobscot waters. Several of these have been collected by my son, Bartle Harvey, my daughter, Florence Harvey, and by Mr. E. D. Merrill, of the Junior Class in the University of Maine. We have included for locality specimens taken by Miss Kate Furbish, in Western Maine, and by Mr. P. L. Ricker at Westbrook, Me.

The remarkable finds are the males of *Gomphus nævius* and *Scudleri* previously unknown and a new species of *Ophiogomphus*.

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#### NOTES ON EDITORIAL.

By H. W. EUSTIS, Minneapolis, Minn.

The editorial in response to W. R. H. in the January, 1898, NEWS leaves the impression that perhaps I am one of your list of subscribers who ought to contribute some article in the hope of benefiting others of our "numerous class." Hoping the appreciation of my effort will be evidenced by the subsequent appearance of many valuable papers I herewith offer a few suggestions:

Use corrugated board instead of cork. It is cheaper and better. By using two thicknesses the pins are held at four points.

*How to get 95 per cent. results from subterranean pupæ.*—In a wooden box bore several holes the size of a broom-stick on each side about two inches from the bottom, taking pains to get them well opposite. Through these holes put broom-sticks and then gradually cover with wet earth, packing hard as you proceed. Four or five inches of earth is sufficient. Now withdraw the sticks and after placing your pupæ in the tunnels thus left cork up both ends and you have your insect in a cell just like the one he made, except that he has company. Keep in a warm room for early results, or a cold one if you intend to breed. Sprinkle once a week and occasionally allow to dry.

I should be pleased to describe to any collector a little collecting box which fits the pocket, enabling me to carry home one hundred butterflies in "the pink of perfection."

**FOOD OF EUDAMUS LYCIDAS.**

By G. M. DODGE, Louisiana, Mo.

On Aug. 5, 1897, I had been walking in the woods and seated myself upon the grass to rest with hands clasped around my knees. Soon a *Eudamus lycidas* alighted on my hand. It moved over the tip of my thumb with quick sidling motions and I soon noticed that its proboscis was thrust back under its body. I then saw that it was feeding upon a fluid which it ejected from the tip of the abdomen. It would deposit a small drop and immediately begin to take it up as rapidly as possible. When the drop had been absorbed the insect would change its place a little by stepping to one side, sometimes only moving the hind legs, and at once repeat the ejecting and feeding process. It evidently changed its place so that it might deposit the liquor on a dry spot where it would not spread out and be lost before it could be secured, as it would have done on a surface already moistened. After taking a number of drops of this peculiar form of nourishment it flew away. I followed and saw it alight on a leaf where it remained quietly at rest without attempting to feed, doubtless digesting its dinner.

I returned to my former place, and, assuming the same position, the butterfly soon returned and perched upon my sleeve. Here it remained for some time, constantly feeding as before, and as the little drops stood up in a half globular form upon the dry, white surface, I could see that they were quite clear, with a slightly yellow or amber tinge. Then it finally flew away and returned no more. I hardly think that this butterfly was an entomological Edison who had discovered this unique method of feeding. The selection of a dry place for each succeeding globule must have been from the dictation of instinct, and such instinct could only have come from a long line of ancestors who manipulated their food in a similar way.

Can it be that butterflies distil the crude nectar which they gather from various sources, finding suitable food only in the refined product?

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“Why did the fly fly?” “Because the spider spied her.”

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—Ed.

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PHILADELPHIA, PA., APRIL, 1898.

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### LOANING SPECIMENS FOR STUDY.

This is a subject with which societies, institutions and individuals frequently are obliged to contend. The object of our study should be to advance its interests, and from this standpoint the best use that can be made of specimens is to have them studied and put in scientific order. One man says: "The types in Philadelphia might as well be in Central Africa unless they are loaned for study." Space will not permit us to discuss this subject at any length. Now, what is our experience—the experience of thirty years. Some of the loaned material comes back in good order. Some comes back ruined, with such a mixture of heads, abdomens and legs that only on insect resurrection day might it be possible to make an allotment of these parts. Some never come back at all, as they are actually stolen. It seems that there are comparatively few entomologists in America who know how to pack insects for shipment and many others seem to know almost nothing about physics, as packing on two sides of a box seems to content them. Knowing these facts it is almost impossible to discriminate among systematic workers.

**TOO SMART FOR THE CITY FOLKS.**—"Me an' the boys was workin' 'roun' the bee-hives, when one of them there dressed-up city gals comes up to the fence an' she sez: 'You have a nice ape-e-ary, sir.' 'No, maam,' sez I. 'I haven't no ape-e-ary—all the apes there is 'roun' here comes from the city,' sez I."—*Harper's Weekly*.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

**Quarantine Against Injurious Insects.**—This question is perhaps the most interesting and important in economic entomology to-day. Not only have several States passed laws which require the inspection of all plants introduced within their borders before they can be delivered to the purchaser, or in lieu thereof a certificate which is supposed to show that they have been inspected where grown and found free from injurious insects or plant diseases; but there has been also introduced in both branches of Congress a bill which provides for the exclusion of foreign fruits and plants, unless accompanied by a similar certificate, or until they have been inspected at certain ports of entry to be designated by the Secretary of Agriculture. Of course all these acts are in restraint or regulation of commerce and only justifiable on the ground of necessity. It seems perfectly clear that, after fruits or plants enter the boundaries of a State, they become subject to its police regulations. It seems also clear that in so far as the laws of a State require extra territorial action they are void. It is for that reason that the power of Congress has been invoked to secure legislation that shall be uniform. The desirability of restricting the distribution of plant pests is unquestioned; but it is by no means so certain that the measures proposed will accomplish the result aimed at.

In the first place, the question of diseases. Any one who has any knowledge whatever of plant diseases knows that some of them may exist for a considerable time in a latent state awaiting only favorable conditions to develop. It is also known that some diseases can be only discovered in certain stages of the plant's growth, and that when the leaves are off, indications of peach yellows or peach rosette are practically undiscoverable, except in very bad cases. Different causes also produce similar results; thus starvation of a plant or an attack of root lice may produce an appearance similar to the yellows, and it may require microscopic examination to determine the question; hence an inspection that will enable a man to say that a block of trees is or is not free from disease is by no means a simple affair and not one that can be settled in the nursery in all cases.

Putting that aside for the present let us see how the insect question stands, and leaving aside also the question of interstate commerce, let us consider the question of the possibility of excluding injurious insects from foreign countries. In his exceedingly interesting address before Section F, at the Detroit meeting of the A. A. A. S., the vice-president, Dr. Leland O. Howard, handled the question of the spread of land species by the agency of man with special reference to insects. He showed, most

interestingly, that a very considerable number of insects are annually introduced which do not gain a foothold, and a moment's consideration makes it certain that this must be so. It is the experience of every one who has frequented docks where foreign ships unload that a considerable number of foreign insects are found there. Dr. Lugger, when at Baltimore, made a very interesting collection of such species; while in New York City and in Brooklyn I have seen a number of insects so taken. Practically, none of these species have gained a foothold here, and it is probable that many more than we have any record of have been introduced into this country and have died.

In California there is a very rigid quarantine, established with the intention of preventing the introduction of foreign injurious insects. The quarantine officer, Mr. Alexander Craw, is a gentleman thoroughly fitted for the duties of his position and as little likely to let an insect slip in as any person known to me. He has a very interesting series of insects found on plants intended for California, and it illustrates what has been excluded; but it does not furnish one particle of proof that any of these insects, if they had been allowed to land, would have established themselves and become troublesome.

There are in the United States at the present time a number of insect pests that were introduced from foreign countries: some of them troublesome in their native home, others not particularly so. Could they have been excluded by the inspection which is provided for in the act of Congress, to which reference has been made? One of them is the Hessian fly. It is an insect which passes a portion of its life in a "flax-seed" stage concealed in straw, and it might be introduced under present commercial conditions at almost any time from an infested district. Could it be kept out by the proposed inspection system? This provides only for the inspection of plants and fruits; but straw is neither a plant nor a fruit, and therefore not subject to inspection. Straw is used for packing in a great many cases; it is used in covering bottles, in protecting plants, and for a variety of different purposes. The inspector would have no right to open packages containing straw only, and straw would come in practically without any inspection. Therefore, any insects which could maintain life in the stems of such dried grasses as are used in packing would come into this country absolutely without hindrance. There is a wide open gate, therefore, for all creatures that may live or be concealed in or under plants of that character. The Hessian fly, it seems to me, could easily be introduced into this country in spite of the quarantine or inspection provided by this act.

The pear midge is an insect not so long a resident of this country, and which was introduced in nursery stock originally imported into Connecticut. It has done considerable injury in Connecticut, New York and New Jersey, and there has been a very heavy money loss on the part of many growers. We have learned to control it; but the question is, could it have been excluded and this money loss prevented by the inspection? The

pear midge winters underground in a little silken cocoon which is very inconspicuous. In order to make certain that every stick introduced from abroad does not contain the cocoons of midges it would be necessary to remove every particle of soil from the roots. The cocoon in its entirety is not over an eighth of an inch in length and may be concealed in any little pellet of earth. In fact, the cocoon is surrounded with particles of earth, which render it almost indistinguishable. Does any one claim that it is possible to safely inspect thousands of pear stocks that are introduced annually in such a way as to make certain that not a pellet of the earth adhering to the roots contains a cocoon? No sign of the appearance of the midge can be detected upon the plant itself. If present at all it will be in the soil. Now, of course, the imported stocks do not contain any great bundles of earth; but in the angles formed by the roots there always is more or less soil attached and more than enough to shelter the insect under consideration. I do not think that any inspection can be sufficiently thorough to exclude any insect of this kind.

Another species, recently introduced and still spreading, is the Wood Leopard Moth, *Zeuzera pyrina*, also called the Imported Elm Borer. It is an insect which is creating havoc with the shade trees in several Eastern cities around New York, and which, on Long Island, is causing serious injury to orchard trees as well. It requires the constant effort of the entomologist to the Department of Public Parks in New York City to keep the insect down in that city and wagon loads of wood are cut each winter, because they contain borers; nevertheless many trees are killed. In Jersey City and Newark the trees along entire avenues have been destroyed; not only elms, but maples and other varieties. Could this insect have been kept out by the system of inspection now proposed? The caterpillar of the Wood Leopard Moth has the habit of crawling from place to place when it gets tired of one situation. It does not, even in all cases, remain in the tree on which it has been feeding when it is ready for pupation. Mr. Southwick once upon a time brought in an infested stick and the larva disappeared from it. Later on, when the moth emerged, he discovered that it had bored into the wood work of a window casing and had pupated there. The insect may have been introduced into this country in the woodwork of almost any box, barrel or crate, and not necessarily on a living plant at all. In fact, the chances are all against its having been introduced on a living plant. The probabilities are that it came in with some sticks of wood used on the steamers for packing or other purposes. Every living plant and every fruit on that steamer could have been inspected and passed and yet hundreds of pupæ of the Wood Leopard Moth might have been in the sticks or planks that were used in the packing or for other purposes and that were thrown away as useless on the dock. I do not believe that any system of inspection would have excluded this borer. Certainly not that which is confined to living plants alone.

Also a comparatively recent introduction is the Sinuate Pear Borer.

This was introduced on pear stocks from France into Union County, N. J. It has killed hundreds of trees, and if we have succeeded in checking its progress, at present, the danger was for a time a real one. Could this insect have been excluded by inspection? In the first place it works only beneath the bark of the tree. It makes no opening outwardly and the young borer produces practically no effect upon the appearance of the bark. There was nothing on the outside of these trees to indicate the presence of a borer underneath the bark. How could it have been discovered unless the bark of each tree had been actually cut into, and how could one be sure that the portion actually cut would reveal the presence of a borer if one existed? I claim that it would be impossible to discover insects of this kind by any method of ordinary inspection. The Sinuate Borer could come in in spite of the inspection provided by the act of Congress. In fact, this illustrates a class of cases: Insects that work between the bark and wood of young trees in such a way as to cause no outward sign, simply, cannot be discovered by ordinary inspection.

According to an amendment adopted at the request of the florists—florist's plants are exempt from inspection and from the requirements of a certificate: but are florist's plants not likely to introduce injurious insects? Roses are florist's plants; the brown-tail moth, which recently appeared in destructive numbers in Massachusetts, is said to have been imported on rose plants. I do not know how true this is, but it is quite possible. Take a variety of lepidopterous insects that winter in the pupa state or in cocoons; some of them so closely resemble the bark of the trees that it requires the closest kind of examination to see them. Others conceal themselves under loose bits of bark. Can any inspection be sufficiently thorough to make it certain that some little angle among the roots or among the branches does not contain the cocoons of some Tortricid or Tineid? Moss and similar material is used in packing plants, and every one who has ever collected insects knows that moss shelters an enormous number during the hibernating period. Will it be possible to so examine the packing material around the plants as to make certain that no insects are there? I doubt whether any package of plants would be found entirely free from insects, and if not free are they to be excluded or treated? How can we tell whether a given insect will live in this country or will not?

Consider the horn-fly, which has caused great alarm throughout the United States and a considerable money loss as well. Could that have been excluded? It does not come within the purview of the act at all. Only plants and fruits are to be examined, and there is nothing that would act as a bar to the introduction of creatures like this horn-fly.

Root maggots would be almost indiscoverable in many instances, and in the winged stage could not always be destroyed, even if they were recognized, because flies have a habit of getting out of reach in a very exasperating way. In fact, the possibilities of importation under modern commercial circumstances are so great that I do not believe it possible to exclude injurious insects except, possibly, scales. It is always the spe-



cies that is least looked for that becomes domesticated here. And how easy it is to overlook things is illustrated in Massachusetts, where, in the very domain constantly covered by the Gypsy Moth workers, the brown-tail moth succeeded in establishing itself, and becoming a serious pest, was entirely unnoticed.

The Secretary of Agriculture is empowered under the act to accept a certificate from foreign authority in lieu of the inspection provided for, but here we have this point: How can a foreign entomologist, looking over nursery stock, tell what is under ground? How can he tell what root lice may be working at the roots? No nursery is free from all insects, and there are sure to be in every foreign plantation a number which are never harmful there. They are things the entomologists are used to and pay no attention to; yet those very insects may be the ones which become most harmful here if they were introduced. A certificate could be given by such an inspector that no dangerously injurious insects had been found, and it might be perfectly true; but insects introduced under such a certificate might become dangerously injurious in this country and the certificate would carry the plants in without any question at this port.

Another question arises, and that is, would those certificates be accepted in all States, and could their acceptance be compelled? I doubt whether a foreign certificate would land a plant or fruit in the purchaser's hand in California without inspection. In California the county inspectors do not always accept each other's certificates, and I am strongly inclined to believe that Mr. Craw would hesitate a long while before accepting a Japanese certificate that the plants contained in that case were free from injurious insects; yet if he did not he would be in direct conflict with the federal law. Is the game worth the cost?

The bill carries an appropriation of one hundred thousand dollars. Inspectors are to be appointed at ports of entry and to make examinations of nurseries. I believe that these examinations are to be made without cost to the nurserymen. Why? Why should the United States be compelled to pay for giving a nurseryman a commercial rating? I fully admit, as already stated, the desirability of checking the spread of diseases and insects, but I must confess that I am entirely skeptical as to the usefulness and effectiveness of the proposed national legislation. J. B. SMITH.

**The San Jose Scale.**—I have just read Dr. J. B. Smith's excellent dissertation on this subject in the Report of the New Jersey Station for 1897, and desire to make a few observations:

1. Since I wrote the bulletin on the San José scale and its allies, Mr. Craw has two or three times found *Aspidiotus perniciosus* on trees from Japan. For example, a plum tree which arrived Jan. 25, 1898, was infested by this and *Diaspis amygdali*.

2. I consider it probable that the scale is a native of the more or less elevated forest regions of Japan, not of the sea-coast. The scales found near sea-level in Japan seem to be oriental tropical types, with very little of the palæarctic element indeed. The enemies of scale insects found

at the lower levels might not be at all effective against the San José scale; and we do not know yet whether it is a fungus, a Chalcidid, a beetle, or what—that we have to look for. Hence I do not think it likely that any valuable enemy of the scale—supposing to exist—will be obtained unless a trained entomologist spends some months in the country.

3. As to the desirability of sending an entomologist to Japan, I think it admits of no dispute. Japanese Coccids, etc., are continually being sent to this country, and it is of the highest importance to obtain a knowledge of their habits and parasites, quite apart from the San José scale question. If any one goes I shall be glad to supply him with information about Japanese Coccids, and if he can stop here on his way he can see them for himself and go over the whole subject in detail.

4. In the United States the scale is by no means uniformly destructive, as has been known for some time. In the Mesilla Valley, N. M., the San José scale has existed for a number of years in several orchards, and while it will kill trees, if left alone, it spreads very slowly, and is quite readily controlled if one is on the lookout for it. Very few points in New Mexico have been found infested, and it is now practically only injurious at Las Cruces. Thus, with us it is a second-class pest; while, on the other hand, the Codling Moth is much more troublesome than in the North-eastern States.

5. Some *A. perniciosus* on plum from Canada, sent by Mr. Fletcher, were much infested by a red-brown, moniliform fungus, not observed in fruit. Thus, it appears that there may be a second, and more Northern, fungus which attacks the scale.

T. D. A. COCKERELL, N. M. Agric. Exp. Station.

## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

I COLLECTED during December at Miami, Florida, two species new to our lists of Rhopalocera. Of *Thecla telea* Hew. I caught two males; this small species, already known from Brazil, Central America and Mexico, is one of the most beautiful species, and I presume few are acquainted with it. Of *Anæa portia* Fab. I took about twenty specimens in no way differing from those in the British Museum here, and which are from the island of San Domingo. I found *Thecla acis* Dru. and *T. martialis* H. S. quite abundant, the former in the pine forests, the latter on the Cags and along the bay shore. Just after Christmas I took *Victorina steneles* and *Timetes eleucha*. Of the Heterocera I found a number of species known previously from tropical America only. The Hesperidæ are not yet identified, there being five or six species quite new to my collection.—W. SCHAUS, Twickenham, England.

EXTRACT FROM A LETTER TO THE EDITORS.—“Can't you find a few of those beginners there in the East who have the nerve to contribute to

the NEWS? Most of us chaps out here (the Western States) are beginners and would also like to hear a familiar voice now and then. Personally, however, I would object to cutting *anything* out of the NEWS to make room for "tyro" matter, with the possible exception of matter not relating to strictly United States insects. I do object very seriously to seeing the NEWS filled up with descriptions of African, European, Alaskan, and other insects we will possibly never see and which, it appears to me, should go into "Transactions." Such articles as those by Prof. A. J. Snyder are much appreciated by the tyro.

Purely artificial tables to assist the collector in placing his species would be very acceptable additions to articles treating of a limited group. Every time one of your great entomologists die I groan involuntarily because I regret to see heads go out of existence taking with them so much knowledge, much of which might have been given to us in little paragraphs of hints. It does seem that the more one knows the harder it is to get anything intelligible out of him. Everything must be technical in proportion to his reputation. Technicalities have done quite as much to mystify as to enlighten. I am not in favor of work so popular as to be inaccurate, but this endless terminology is quite discouraging. But I suppose these sentiments are not those of scientists, so we will say no more."—F. J. H.

Mr. EDITOR—"H. F. W." wonders what the "mere collectors" want. Well, I presume there are no two who want just the same things. Just at present there is one in my immediate vicinity who wants to know (1) the duration of the egg stage of *luna*, *cecropia*, *columbia*, *imperialis*, *polyphemus* and *S. bisecta*? (2) if larvæ which, in nature, feed on large trees will, in confinement, do as well on small trees four or six feet high of same species? (3) if pupæ which have been kept all winter packed in moss need to be taken from the moss and placed in dirt before they emerge? (4) if cases made from pine or resinous woods will cause specimens kept in them to turn greasy? and (5) what is the appearance of *S. bisecta*? He thinks he has the pupæ of some of that species which resulted from larvæ found feeding on *Pinus regida*, but is not sure.

For years I have been finding the larvæ of *luna* feeding on white birch, and not knowing to contrary supposed that to be a well-known food-plant of the species, but I am told recently that such has not been known to be the fact, so I give this information for what it may be worth.

Would not the mere collector be pleased to have a standard cash price authoritatively fixed for each species? As it is now, one man says *asterias*, for instance, is worth ten cents, while another rates it at twenty-five, with others setting it at fifteen and twenty. It seems to me that if uniformity in this matter could be brought about, it would greatly facilitate the making of exchanges.—W. R. HOWARD, Belfast, Me.

We would be pleased to have our readers send us answers to these questions for the benefit of all. Of course the answer to question 2 is yes. To questions 3 and 4, no.—EDS.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

**4.** The Canadian Entomologist, London, Ont., March, '98.—**5.** Psyche, Cambridge, Mass., March, '98.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; circulars, second series.—**10.** Nature, London, '98.—**11.** The Annals and Magazine of Natural History, London, Feb., '98.—**15.** Biologia Centrali-Americana, part cxl, London, Jan., '98.—**21.** The Entomologist's Record, London, Feb. 15, '98.—**22.** Zoologischer Anzeiger, Leipsic, '98.—**35.** Annales, Société Entomologique de Belgique, Brussels, '98.—**45.** Deutsche Entomologische Zeitschrift, '97, heft ii, Berlin, Dec., '97.—**61.** Natural Science, London, Feb., '98.—**65.** La Feuille des jeunes Naturalistes, Paris, March 1, '98.—**66.** Naturwissenschaftliche Rundschau, Braunschweig, Feb. 26, '98.—**67.** Entomologiske Tidsskrift, xviii, 1 Feb. 27, '97, 2 Sept. 25, '97, 3-4 Jan. 19, '98, Stockholm.

**The General Subject.**—Ackermann, K. Animal bastards: summary of the observations on bastardy in the animal kingdom with references to the literature thereon; xxxii Abhandlungen und Bericht des Vereins für Naturkunde zu Kassel, '97.—Capper, S. J. A short sketch of entomological serial literature in Britain, **21.**—Cockerell, T. D. A. The insect visitors of flowers in New Mexico-i, Zoologist, London, Feb. 15, '98.—Combes, P. The distribution of insects according to altitude, Le Naturaliste, Paris, Feb. 15, '98.—Comstock, J. H., and Needham, J. G. The wings of insects—ii. American Naturalist, Boston, March, '98.—Dixon, W. A. Insusceptibility of insects to poison, **10**, Feb. 17.—Hampson, G. F. Protective and Pseudo-mimicry, **10**, Feb. 17.—Heymons, R. Remarks on Verhoeff's 'Still some words on segmental appendages of insects and myriopods,' **22**, Feb. 21.—Moffat, J. A. Some insects, rare in Canada, taken at Hamilton by Mr. James Johnston, **4.**—Mortimer, C. H. Lively halves of a bisected insect, Entomologist's Monthly Magazine, London, March, '98.—Potter, H. B. Insusceptibility of insects to poisons, **10**, March 3.—Poulton, E. B. Protective mimicry and common warning colors, **10**, Feb. 24.—Reh. The influence of man on the distribution of terrestrial species, especially insects, Naturwissenschaftliche Wochenschrift, Berlin,

Feb. 27, '98.—v. Seiler, C. K. Escherich on the exuvial hairs of insects after their change of function, *Centralblatt für Physiologie*, Leipsic and Vienna, Feb. 5, '98.—Stevenson, C. The labeling of entomological specimens, **4**.—Trimen, R. The President's address: Obituary—Mimicry in Insects, *Transactions, Entomological Society of London*, '97, pt. v, Feb. 2, '98.—Verhoeff, C. Some words on the European cave fauna, **22**, Feb. 14.

**Economic Entomology.**—Chittenden, F. H. The two-lined chestnut borer (*Agilus bilineatus* Weber), figs., **7**, No. 24, July 14, '97.—Howard, L. O. The Mexican cotton-boll weevil in 1897, **7**, No. 27, Dec. 31, '97; The box-elder plant bug (*Leptocoris trivittatus* Say), figs., **7**, No. 28, Jan. 8, '98.—Johnson, W. G. Answers to queries and notes on insects injurious in mills, xviii [cockroaches], figs.. *American Miller*, xxvi, p. 201, March 1, '98; See Diptera.—Kerremans, C. Discourse on Economic Entomology, **35**, xli, 13, Feb. 15.—Koningsberger, J. C. First review of the injurious and useful insects of Java, *Mededeelingen uit 'sLands Plantentuin*, xxii, Batavia—s'Gravenhage, '98.—Lampa, S. [Report of the Entomologist for 1896] (in Swedish), **67**, 1.—Marlatt, C. L. The buffalo tree-hopper (*Ceresa bubalus* F.), **7**, No. 23, May 10, '97; The ox warble (*Hypoderma lineata* Vill.), **7**, No. 25, July 19, '97; The pear slug, figs., **7**, No. 26, Aug. 28, '97.—Slingerland, M. V. The Codling-moth, figs., *Bulletin 142, Cornell University Agric. Exper. Station*, Ithaca, N. Y., Jan., '98.—Smith, J. B. Report of the Entomological Department of the New Jersey Agricultural College Experiment Station for the year 1897. Trenton, N. J., 1898. Pp. 395-492, figs.

**Arachnida.**—Cambridge, O. P. *Arachnida Araneidea*,\* pp. 233-240, **15**.—Hansen, H. J., and Sørensen, W. The order Palpigradi Thor. (*Koenenia mirabilis* Grassi) and its relationship to the other Arachnida, 1 pl., **67**, 3-4.—Lönnerberg, E. Scorpions and Pedipalpi of the Zoological Museum, University of Upsala; On the geographical distribution of Scorpions and Pedipalpi (both in Swedish), **67**, 3-4.—Piersig, R. The Hydrachnidæ of Germany (cont.), 8 pls., *Zoologica*, heft 22, lieferung 3, Stuttgart, '97.—Simon, E. Descriptions of new Arachnids of the families Agelenidæ, Pisauridæ, Lycosidæ and Oxyopidæ,\* **35**, xlii, 1, Feb. 26.

**Myriopoda.**—Silvestri, F. Preliminary note on the morphology of the Diplopoda, *Atti della Reale Accademia dei Lincei*, anno ccxcv, Jan. 2, '98. Rome.

**Thysanura.**—Folsom, J. W. Descriptions of species of *Machilis* and *Seira* from Mexico,\* 1 pl., **5**.

**Orthoptera.**—Blatchley, W. S. Some Indiana Acrididæ—iv,\* **4**.—de Saussure, H., and Pictet, A. *Orthoptera*\* pp. 345-368, pls. xvii, xviii, **15**.

**Neuroptera.**—K. J. T. Porter on *Trichonympha* and other parasites of the Termites (*Termites flavipes*), **66**.—Wasmann, E. Termites of Madagascar and East Africa, 2 pls., *Abhandlungen, Senckenbergischen Naturforschenden Gesellschaft*, xxi, 1, Frankfurt, '97.

**Hemiptera.**—Baker, C. F. *Athysanella*, a new genus of Jassids,\* **5**.—Champion, G. C. Rhynchota Heteroptera\* vol. ii, pp. 33-48, pl. iii, **15**.—Cockerell, T. D. A. Notes on the Coccidæ, a family of Homoptera, with a table of the species hitherto observed in Brazil, figs.; Further notes on Coccidæ from Brazil, *Revista do Museu Paulista*, ii, S. Paulo, Brazil, '97; Two new scale-insects quarantined at San Francisco,\* **5**.—Marlatt, C. L. See Economic Entomology.—Schwarz, E. A. The periodical cicada in '1897, **7**, No. 22, May 1, '97.

**Coleoptera.**—Aurivillius, C. New or little-known Coleoptera Longicornia, 1 pl., **67**, 3-4.—Blandford, W. F. H. Coleoptera,\* vol. iv, pt. 6, pp. 185-216, **15**.—Chittenden, F. H. See Economic Entomology.—Davis, W. T. Notes on beetles preserved with Wickersheimer's solution, Proceedings of the Natural Science Association of Staten Island, Feb. 12, '98.—Gorham, H. S. Coleoptera\* vol. vii, pp. 241-248, **15**.—Jacob, M. Descriptions of some new species of *Doryphora*, *Entomologist*, London, March, '98.—Linell, M. L. A new species of *Aegialites*,\* **4**.—Pic, M. Synoptic study of the Longicorn Coleoptera of the genus *Cortodera* Muls., **65**.—Reitter, E. Analytic revision of the Coleopterous genus *Microdera* Esch., **45**.—Verhoeff, C. On the coloring of the Coleopterous nymphs and imagos, *Verhandlungen d. k. k. zoologisch botanischen Gesellschaft in Wien* xlvi, 10, Jan. 31, '98.—Wasmann, E. A new *Xenodusa* from Colorado with a table of the species of *Xenodusa*\* figs.; On the biology of the *Lomechusa* group; A new myrmecophilous Silphid genus from Costa Rica,\* **45**.

**Diptera.**—Becker, T. Contributions to the Dipterous fauna of Nova Zembla, *Annuaire, Musée Zoologique de l'Academie Imperiale des Sciences de St. Petersburg* '97, No. 4.—Bengtsson, S. Contribution to the knowledge of the larvæ of *Phalacrocer replicata* L., 4 pls. [In Swedish], *Acta Universitatis Lundensis*, xxxiii, 1897.—Coquillett, D. W. On the Dipterous genus *Eusiphona*, **4**.—Johnson, W. G. Notes on the Morelos orange fruit-worm, Proceedings, Entomological Society of Washington, iv, 2, Jan. 6, '98.—Trybom, F. Tracks of Tipulid-larvæ on sand beaches (in Swedish), **67**, 1.—Wandolleck, B. Is the phylogeny of the Aphaniptera discovered? **22**, Feb. 21.—Wheeler, W. M. A new genus of Dolichopodidæ,\* figs. *Zoological Bulletin* i, 5, Boston, Feb., '98.

**Lepidoptera.**—Aurivillius, C. Remarks on the Lepidoptera described by J. Chr. Fabricius from Danish collections, **67**, 3-4.—Butler, A. G. A revision of the butterflies of the genus *Ixias*, **11**.—Druce, H. Lepidoptera Heterocera\* vol. ii, pp. 441-448, pls. lxxxv-lxxxvii, **15**; Description of some new species of Heterocera, **11**.—Dyar, H. G. On the value of larval characters, **21**; Description of a new species of Arctiidæ with a table of the species of *Idalus*,\* **5**.—Grote, A. R. The classification of the day-butterflies (concl.), 1 pl. **61**.—Hanham, A. W. Notes on collecting "at light" (cont.), **4**.—Lyman, H. H. A rare aberration of *Vanessa antiopa*, 1 pl. **4**.—

Peyron, J. On the developmental stages of *Cheimatobia* species, 1 pl. (in Swedish), **67**, 2.—Reuter, E. On a new classification of the Rhopalocera, 1 pl., **21**.—Turner, A. J. The Xyloryctidae of Queensland, Annals of the Queensland Museum, No. 4, Brisbane, '97.

**Hymenoptera.**—André, E. Synopsis of the Mutillidae of France (cont.), **65**.—Aurvillius, C. A new Swedish egg parasite, 1 pl. (in Swedish), **67**, 3-4.—Bethé, A. Ought psychical qualities be ascribed to ants and bees?, figs., 2 pls., Pflüger's Archiv für Physiologie, lxx, 1 and 2, Bonn, Jan. 29, '98.—Cockerell, T. D. A. Some bees of the genus *Megachile* from New Mexico and Colorado,\* **11**; Cockerell, T. D. A. New and little-known bees,\* **4**.—Hanstein, R. v. C. Verhoeff on the life-history of the genus *Halictus*, **66**.—Janet, C. The habits of ants, Revue Scientifique, Paris, Feb. 19, '98.—Kieffer, Abbé. Cynipides in: Species des Hyménoptères d'Europe et d'Algérie fondé par Edmond André et continué sous Ernest André. 61e fascicule. Paris, Vve Dubosclard, Editeur. Jan. 1, '98, 2 pls.—Latter, O. H. Wasps [temperature and moisture], **61**.—Marlatt, C. L. See Economic Entomology.—Wasmann, E. A new *Eciton* guest from North Carolina, fig., **45**.

## Doings of Societies.

A meeting of the American Entomological Society was held February 24th, Dr. Henry C. McCook, president, in the chair. Dr. McCook acknowledged his election as president and thanked the Society for the honor conferred upon him which he highly appreciated. Mr. Wm. J. Fox read letters from the following persons acknowledging their election as Corresponding Members of the American Entomological Society: L. O. Howard, Washington, D. C.; Herbert Osborn, Ames, Iowa; Samuel Henshaw, Cambridge, Mass.; H. H. Behr, San Francisco, Cal.; John B. Smith, New Brunswick, N. J.; Osbert Salvin, Haslemere, England; W. J. Elwes, Colesborne, England; Ernest André, Gray, France. The death of Herr Heinrich Ribbe was also announced by the Corresponding Secretary. Mr. Herman Hornig presented some slides representing the histology of insects. Dr. Calvert stated that Mr. Henshaw's bibliography of Dr. Horn had been received. Dr. Horn had proposed 154 genera, of which 140 had been retained; 1582 species had been described, of which number 1497 had been retained; of the 85, 35 were varieties and 50 synonyms. The same gentleman read letters from Dr. David Sharp and Mr. G. C. Champion, giving a summary of the work of the late Dr. G. H. Horn. Dr. Calvert also read a letter from

Mr. Herman Hornig, stating that the caterpillars of the larger Bombycidae store up food for use in the chrysalis state, which they gradually use up as they near the imago or perfect condition. Dr. Calvert killed some chrysalids in hot alcohol and split them into halves—these showed the black substance to which Mr. Hornig alluded. It lies in the middle portion of the alimentary canal and is dark green, almost black and very hard. It consists of food in conjunction with some excretory substances, and is covered by a membrane, probably the remains of the larval alimentary canal. The speaker is studying the subject still further. Mr. Hornig said the substance was much less in bulk in the advanced stage of the chrysalis, which led him to think that the chrysalis actually lived on the substance. Dr. Calvert said that Lownes refers to a similar substance in the pupa of the blow-fly, as the yellow body. Dr. McCook mentioned that in the cocoon-spinning Formicidae there is found an excretory substance in the anal end of the cocoon. The same thing occurs in other Hymenoptera, such as bees and wasps. Mr. Fox exhibited three sheets of a work from the library of Dr. Horn, entitled *Monographia Amaroideum* by Zimmerman, which was probably the second copy known. Dr. D. M. Castle was elected a member of the Society. HENRY SKINNER, M.D., *Rec. Secretary.*

At the meeting of the Feldman Collecting Social held on March 8, 1898, at the residence of Mr. H. W. Wenzel, No. 1523 S. 13th Street, Philadelphia, Mr. Seiss reported the presentation of 108 specimens of local Orthoptera to the Academy of Natural Sciences of Philadelphia in the name of the Social.

Prof. Smith read a paper on "Quarantine against Injurious Insects." The same speaker also read a note on the San José scale by T. D. A. Cockerell. (Both articles are in this number under Economic Entomology.)

Dr. Skinner admitted the force of Prof. Smith's argument, but believed that inspection would exclude many injurious insects if not all. It is not certain that pests brought from abroad will not become acclimated.

Prof. Smith stated that among all the imported insects which have become pests in this country there is not one which could have been excluded by inspection. The history of the bill now before Congress was given by the same speaker.



Mr. Johnson exhibited a series of *Sargus elegans* Loew collected at Opelousas, La., and in New Jersey. The differences between the sexes were noted. *Sargus debilis* Walker is probably the same and has priority.

Mr. A. Hoyer showed a moth caught flying on March 7, 1897. Prof. Smith identified it as *Xylina antennata*, a hibernating species.

Mr. H. Wenzel recorded the capture of *Cychrus stenostomus* on Feb. 26, 1898. He also exhibited a Carabid allied to *Zoophium*, and which he had not been able to identify. It is not in Dr. Horn's collection, and was captured along the river front with numerous *Telephanus velox*.

Dr. Skinner referred to the appointment, by the city, of a forester, one of whose duties was purported to be the extermination of the tussock-moth, and spoke of the careless way in which the work has been carried on. He had seen city employees spraying trees while the moth is in the egg state.

Mr. Aaron reported the examination of meal made from insect eggs from Mexico and the clothes moth, *Tiniella biselliella* was found therein. An ear of corn infested by *Sitotroga cerealella* was shown, and a series of *Bruchus 4-maculatus*. He referred to Prof. Smith's communication, and asked if the *Gallerucella luteola* could not have been excluded by legislation.

In reply Prof. Smith said it could not have been introduced in the larval or pupal stage, but perhaps in the imago. This also applies to asparagus beetles. He also stated that many Tineids infest insect boxes and attack the antennæ of specimens eating off the hairs.

The question of legislation against insect pests was further discussed by Messrs. H. Wenzel, Aaron, Skinner and Smith.

The secretary exhibited a new species of *Mutilla* from New Jersey, Philadelphia and Florida. Also referred to the ♂ of *M. grandiceps*, which has abbreviated wings. The specimen exhibited at the January meeting, with the same characteristic, is perhaps the ♂ of *M. waco*.

Dr. Skinner made some remarks on variation caused by geographical distribution and altitude, and remarked on the absence of definite explanation of the subject.

Mr. S. Frank Aaron was unanimously elected a member.

WILLIAM J. FOX, *Secretary*.

A regular meeting of the Newark Entomological Society was held at the Turn Hall Feb. 13, 1898, with twelve members present and President, A. Schleckser presiding. As agreed upon at the last meeting each member brought a series of the genus *Hydræcia*, which was poorly represented, as some of the members had but from three to six species.

Prof. Smith explained the cause of the rarity of this genus, saying that the moth does not fly very much and is not attracted to light, with a few exceptions, also that the larvæ bore in the stems and roots of various plants, such as the sunflower, thistle, etc. He urged the members to collect the larvæ where possible.

Mr. Brehme read an article on the transplanting of the larva of *Sphinx luscitiosa*, a very local species. He said: The larva of *Sphinx luscitiosa*, a very local species, has of late years been found in but one place in the vicinity of Newark, N. J., and that spot is now being built up rapidly. I began to transplant the larva in other localities where its food-plant (willow) was plentiful early in June, 1887. In July I visited the places that I left the young larvæ and I found that they had made just as good headway as in the old place. I intend to do no collecting in the places where I transplanted the larvæ for three years in order to give them a chance to get a good start. To my knowledge the species is moving further north, as in the years 1887, '88 and '89. I found the larvæ plentiful about a mile south of the present locality, and since then more were found there, although the place has never been built up. Last season I found a few about a mile further north.

Mr. Doll remarked that the larva of *S. luscitiosa* was common, locally, in the vicinity of Brooklyn.

Mr. Geo. Kircher proposed Mr. Herman Erb as a candidate for membership.

The genus *Callimorpha* will be represented at the next meeting for study and comparison.

No further business on hand the Society adjourned to the annex.

A. J. WEIDT, *Secretary*.

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## OBITUARY.

Prof. JOHN P. PATTERSON, President of the Cleveland (Ohio) Natural History Society, died of apoplexy on Feb. 2, 1898. Mr. Patterson was the leading spirit of the society, and under his management it grew and prospered. He was an active and enthusiastic collector and will be greatly missed. The deceased was born in Virginia in 1835.

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# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX.

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No. 5.

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## TWO NEW AMERICAN SPECIES OF *CYNOMYIA*,—A STUDY IN CHÆTOTAXY.

By GARRY DE N. HOUGH, M.D.

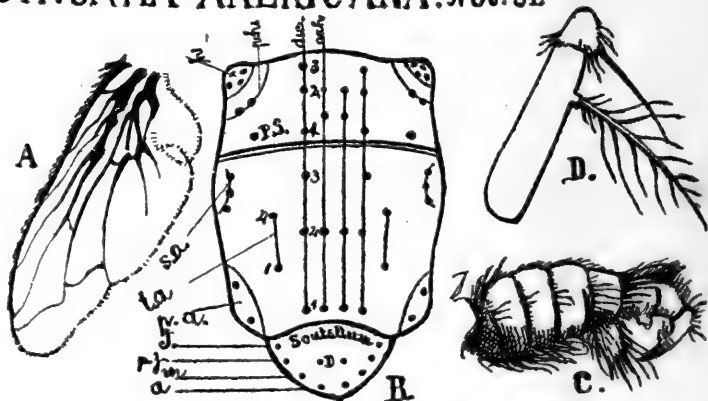
***Cynomyia americana*** nov. sp.—Length seven to thirteen millimeters. Thorax blackish blue, opaque, with six faint whitish pollinose cephalo-caudal stripes (two achrostical, two dorso-central and two humeral) best seen with very oblique illumination. Abdomen dark metallic-green to violet, often a brilliant metallic-violet, frontal vitta brown to black: genovetical plates (sides of the front) and genæ (that part of the side of the face which is dorsad the transverse impression of the face and ventrad the insertion of the antennæ) of silky lustre, their color varying, according to the incidence of the light, from a rich brown to a shining brownish yellow; buccæ (that part of the side of the face and head which is ventrad the transverse impression of the face and ventrad the eye) black, except the anterior half, which varies, according to the incidence of the light, from black to a ferruginous red; antennæ black to brown, with base of third joint and apex of second yellowish red to yellow; palpi reddish yellow. Abdomen of male hairy, as in the European *Cynomyia mortuorum* L., the prominent hypopygium very densely beset with soft black hair, the two terminal chitinous hooks often quite prominent. Wing, antenna and chætotaxy shown on plate; tegulæ white to pale brown. Legs black, anterior and posterior thighs have their lateral surfaces quite thickly clothed with long, fine, black hairs.

I have 244 specimens, male and female. This species has a very wide distribution, my specimens being from Canada, Massa-

chusetts, Pennsylvania, Georgia, Louisiana, Indiana, Colorado, S. Dakota and Illinois. It is found mostly in early Spring and late Fall. The larva feeds on putrefying animal matter.

I have four specimens of a *Cynomyia* from Greenland which I refer, with a doubt, to this species. They are imperfect, but seem, on the whole, a little more like *C. mortuorum* than *americana*; possibly they represent a new species. The following points clearly distinguish this species from *C. mortuorum*: The face of *americana* is brownish yellow, that of *mortuorum* golden-yellow, and in the latter the yellow color extends much further caudad on the bucca, viz., to or beyond the caudal border of the

### CYNOMYIA AMERICANA. NOV. SP.

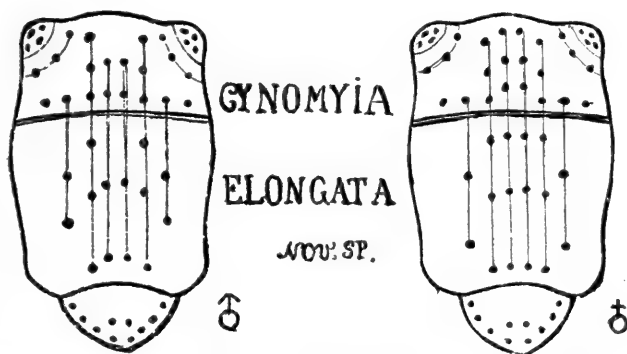


eye. The antennæ of *americana* are darker in color than those of *mortuorum*. The occipital hair (nearly the whole occiput of *Cynomyia* is beset thickly with soft hair and not with regularly arranged bristles) is white in *americana*, yellow in *mortuorum*. The hypopygium and its terminal hooks are of moderate size in *americana*, very large in *mortuorum*, and on this account the abdomen of *mortuorum* seems more elongate. The normal chætotaxy is identical, except that *americana* has two posterior achrostical macrochætæ, *mortuorum* but one.

***Cynomyia elongata* nov. sp.**—Length twelve to fourteen millimeters. Resembles *americana* so much that I shall limit my description mainly to pointing out the differences between the two. Front of male one-fourth the width of the head, in *americana* one-fifth. According to the incidence of the light the color of the frontal vitta varies from dark brown to

golden-yellow, that of the geno-vertical plates from light brown to golden-yellow, and that of the genæ from reddish brown to golden-yellow; buccæ black (anterior half golden-yellow in some lights), their beard black; the antenna has the second joint and the base of the third yellowish red, almost of an orange color, the rest of the third has a light brown ground color in the male (darker in the female) and the whole of the third is thickly white pollinose. In the male the third antennal joint is decidedly more slender than in *americana*. The thorax is rather longer in proportion to its width than in *americana*; its chætotaxy is alike in the two species, except that *elongata* has a small anterior intra-alar macrochæta and both my female specimens have three anterior and three posterior achrostical macrochætæ (each of my males has two anterior achrosticals; one has one, the other two posterior achrosticals). The abdomen in all my specimens is green and has a slight, but distinct white pollinose coating, much more than I have ever observed in *americana*; its hairs are coarser and less numerous, and the lateral macrochætæ more appressed than in *americana*; each abdominal segment is longer in proportion to its width than in *americana*. The hypopygium is less densely hairy than in *americana*, but its terminal hooks are of about the same size as in that species (far smaller than in *mortuorum*). The long hair on the outer surface of the fore and hind thighs is shorter and less dense than in *americana*.

Two males and two females. One of the males and one of the females are mounted on the same pin, whence I infer that they



were taken in copula; their locality label says So. Dakota, Sep. 19th; I received them from Prof. J. M. Aldrich. One female (also from Prof. Aldrich) bears label, Brookings, So. Dakota. One male, from Prof. W. M. Wheeler, is labeled Torrey's Lake, Wyoming.

While most dipterists are aware that individual variations in chætotaxy occur, I do not think that any observations have been

published showing the frequency and character of these variations. In my 244 specimens of *Cynomyia americana* 44, or 18 per cent, show some variation. The variation is of three kinds: 1, deficiency in size of a macrochæta; 2, absence of a macrochæta normally present; 3, presence of a macrochæta normally absent. Two individuals show both the second and third kinds of variations, no others had more than one abnormality. Leaving out these two we find that in the remaining 42 the abnormality was unilateral in 23, bilateral in 19. When bilateral the corresponding macrochætæ on the two sides of the body were always the ones concerned.

There were eleven specimens in which there seemed to me to be a deficiency in the size of a macrochæta. The third anterior dorso-central was always the one affected. In one male the abnormality was on the right side; in four males and one female on the left side; in one male and four females on both sides. Five of the specimens were unusually small: male 7 mm., male 7.5 mm., female 8 mm., male 9 mm. and male 9 mm. This macrochæta is always the smallest of the dorso-centrals. The amount of variation from the normal size differed much in the different individuals and in some cases seemed to be compensated for by the increased size of a macrochæta on the cephalic surface of the thorax which is nearly or quite in the line of the dorso-centrals. Similar variation in the size of the third anterior dorso-central occurs in the genera *Calliphora* and *Lucilia*.

Absence of a macrochæta normally present occurred in twelve individuals (4.9 per cent). Of course, it is possible that in some cases the macrochæta had been originally present and had been broken off, but I was unable, with a magnifying power of twenty diameters, to discover any indication that it had ever been present. Two specimens which showed the presence of macrochætæ normally absent as well as the absence of macrochætæ normally present will be separately considered. The other cases that fall under the present head were as follows:

- Third anterior dorso-central absent; one male and two females.
- First left anterior dorso-central absent; one female.
- Second right posterior achrostical absent; one male.
- Second left posterior achrostical absent; two males.
- Second pair posterior achrostical absent; three males.

The occasional absence of the third anterior dorso-central or, to put it in other words, its reduction to such a size as to make it indistinguishable from the other hairs of that region, would be expected by one who had studied the eleven specimens of the first group wherein there was a deficiency in the size of this macrochæta. In regard to the absence of one or both of the second posterior achrosticals I would say that throughout the Muscidæ (sens. strict.) I have found that the number of pairs of achrostical macrochætæ is usually a specific character, although sometimes variable, and that in *Cynomyia mortuorum* (as far as my limited amount of material enables me to determine) there is but one pair.

Presence of macrochætæ normally absent was observed in twenty-three cases (9.4 per cent), two of which showed also absence of macrochætæ normally present and will be separately considered. The abnormalities observed in this group were :

A third right anterior achrostical present; one male and one female.

A third left anterior achrostical present ; one female.

A third right posterior achrostical present; two males and one female.

A third left posterior achrostical present; one female.

A third pair of posterior achrostical present; one female.

A small pair of anterior intra-alar, right one half the size of the left; three females.

A third left posterior intra-alar, about a quarter as large as the second; two females.

A third pair of posterior intra-alars; two males and two females.

A second left marginal scutellar ; one male and one female.

A second left discal scutellar; two females.

The presence of a third anterior achrostical on one or both sides I have also observed in the typical *Calliphoræ*, and it is present in both my female specimens of *Cynomyia elongata*. The third pair of posterior achrosticals occurs in my females of *Cyn. elongata*, and is always present in the typical *Calliphoræ*. The anterior intra-alar is present in all my specimens of *Cyn. elongata* and in all the *Calliphoræ* and nearly related genera. The third posterior intra alar is normal in an undescribed species of *Calliphora*, of which I have numerous specimens, and is occasionally

present in *Calliphora vomitoria* and *erythrocephala*. Two marginal scutellar macrochætæ are normally present in *Calliphora* and some related genera. Two discal scutellar are occasionally seen (as an abnormality) in *Calliphora* and many other Muscidae (sens. strict.)

Two individuals, out of the 244, presented both absence of normal and presence of abnormal macrochætæ. These were :

A female with a third pair of anterior achrosticals whose second left posterior achrostical was absent. She had, however, a very small achrostical on the left side in the position occupied by the third posterior achrostical when that is present.

In one male the left apical scutellar was absent. The left marginal did not have its usual direction, but that of the absent apical. There were three left and two right discal scutellar instead of the normal one left and one right. One of the left was much the largest and seemed, like the marginal, to be trying by its direction to make up for the absent apical. This was the only specimen in which any macrochæta had other than its normal direction.

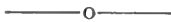
Omitting this monstrosity from further consideration I would submit the following conclusions :

1. In *Cynomyia americana* there is very little variation in the size or number of the macrochætæ of the thorax and scutellum.
2. Variations in size affect only the third anterior dorso-central.
3. It is very rare for any macrochæta normally present to be absent, except the third anterior dorso-central and the second posterior achrostical.
4. When a macrochæta, normally absent, is present we find that it is, in eleven individuals out of twenty-two, one that is normally present in all the typical species of *Calliphora*; that in six other individuals it is one which is normally present in one species of *Calliphora* and occurs occasionally in others; that in the other five individuals it is an abnormality, which is also found in various species of *Calliphora*.
5. The presence in three females of an anterior intra-alar is of especial interest, because it is present in all my specimens of *Cyn. elongata* (although in them rather a small macrochæta) and because it is always present, as far as my knowledge extends, in *Calliphora* and the genera closely related thereto.
6. The females of *Cyn. elongata* have, like all the typical Calliphoræ, three posterior achrosticals.



7. All the *Cynomyiæ* have the lateral post-humeral macrochæta laterad the presutural macrochæta, as do also *Calliphora* and all its near relatives. The American, like the European species of *Cynomyia*, agree with *Calliphora*, too, in having the lower tegulæ hairy.

8. From all the above I conclude, with Girschner, that from the standpoint of chætotaxy, *Cynomyia* belongs to the Muscidæ (sens. strict.) being more closely related to *Calliphora*, *Lucilia*, etc., than to *Sarcophaga*.



#### Fourth Addition to the list of Dragonflies (Odonata) of Manchester, Kennebec County, Maine.

By MISS MATTIE WADSWORTH.

(See ENT. NEWS, vol. i, pp. 36, 55; vol. ii, p. 11; vol. iii, p. 8; vol. v, p. 132.)

No. 10b. *Lestes vigilax* Hag.

1895. July 1, one ♂ on marsh.

No. 10c. *Lestes inequalis* Walsh.

1897, June 29, one ♂ on marsh.

No. 10d. *Lestes congener* Hag.

1891, July 20, one ♂ over Snake Pond.

No. 25. *Somatochlora walshii* Seud.

The ♀ of this species has not previously been recorded from this locality.

1897, June 24, one ♀ near woods. Four males also taken since my last report:—1895, June 20, two males over marsh; 1897, July 6, 12, one each day over marsh.

No. 25a. *Somatochlora linearis* Hag. (probably)

1897, July 27, one ♀ over marsh.

No. 30b. *Neurocordulia obsoleta* Say.

1897, July 5, one ♂ in pasture near woods.

All new species were identified by Mr. P. P. Calvert.

Sixty-two species and an undetermined *Enallagma* have now been taken in this locality, all within a radius of two miles, and all by myself. The season of 1897 brought an abundance of dragonflies and great obstacles to their capture, as all marshes were covered with water until August, and all other hunting grounds were very wet and muddy. Notwithstanding these difficulties fifty species were captured, the largest number recorded in one season.

## RARÆ AVES OF THE INSECT FAUNA OF ARIZONA.

By Dr. R. E. KUNZE, Phoenix, Ariz.

(Continued from p. 59, vol. ix.)

Nymphalidæ furnished a few fine species. Of *D. archippus*, var. *fumosus*, several were secured. *D. berenice*, var. *strigosa*, is not uncommon. *Agraulis vanillæ* I saw in isolated examples. *Argynnis nausicaa* is the only species seen, and took it in Yavapai County, upper Hassayampa, in several localities on flowers of *Monarda fitulosa*. *Melitæa minuta* found in small numbers on flowers of a species of Aster and Mountain Mint, in Coconino County, some on highest peaks of 12,860 feet altitude, in alpine zone. *Grapta zephyrus*, took two examples in central and northern Arizona. *Synchlæ lacinina*, saw only two or three. *Limenitis hulstii* with its mesial white spotted line of secondaries, flew in company with *D. berenice* in S. Arizona. *Limenitis ursula*, var. *arizonensis*, devoid of fulvous spots on upper surface, flew sparingly in canyons of central Arizona, sometimes in company with *Heterochroa californica*. It always had a weather eye on its pursuer and usually flew high. *Lim. eros*, var. *obsoleta*, should be stricken from the check list; Mr. Wm. H. Edwards does not recognize it any more. A want of sufficient and good material to describe from caused him to give two names to the same lepidopter, and he informed the writer that the name *hulstii* must stand for it. Took very few *Apatura leilia* on flowers of *Prosopis juliflora* or mesquite, in Pima County, and saw less here in Mariposa County, sipping on willows. *Lemonias palmerii* feeds on flowers of mesquite in S. Arizona. *Lem. nais*, in Yavapai County, is found on flowers of *Ceanothus fendleri* near watered mountain localities. *Lycænas* occur in valleys, and more so on mountains, always more abundant near a streamlet. *Thecla* in similar localities; *T. halesus* sparingly on desert buttes. *Pieris beckeri*, took a few poor examples of it on Mt. Humphrey, some near snow fields, others on the peak, from 11,500 to 12,860 feet altitude. *Anthocharis pima* on high altitudes of Pima and Maricopa Counties. Have also met isolated specimens flying across desert. It is hard work climbing peaks for such beauties. Of *Terias gundlachia*, came across two examples late in November or early in December this season, when I went without

net to the desert for Coleoptera. Believe it was the first time the net was not at hand.

Of other Papilionidæ noticed a few *Catopsilia* spec. of a lemon-yellow, like *eubule*, but without markings on reverse side. It had one ocellus, or rather discal spot on secondaries; devoid of any other color or marking. I failed at first to secure any, taking it for *eubule*, and after securing a couple failed to see more. It could not have been *agarithe*; saw only two *Meganostoma cæsonia*. *Papilio daunus* occurred on mountains of central and northern Arizona, flying high in the canyons. *Papilio asteroides*, I took two or three in S. Arizona on high peaks, although I saw one flying in the vicinity of Phoenix this Autumn within town limit. Noticed a single specimen of *Papilio bairdii* feeding on flowers of Wild Bergamot near Flagstaff, but could not capture the prize. In Yavapai County took two examples of the large, whitish *Pyrgus ericetorum* on flowers of *Alfalfa*. A few other Hesperidæ fell to my lot, which are at best local and rare: *Nisoniades afranius*, *Pholisora ceos*, *Nis. pacuvius*, one *Erycides* spec., and a number still undetermined. For naming I am under obligations to Messrs. Wm. H. Edwards, D. Bruce and Dr. H. Skinner.

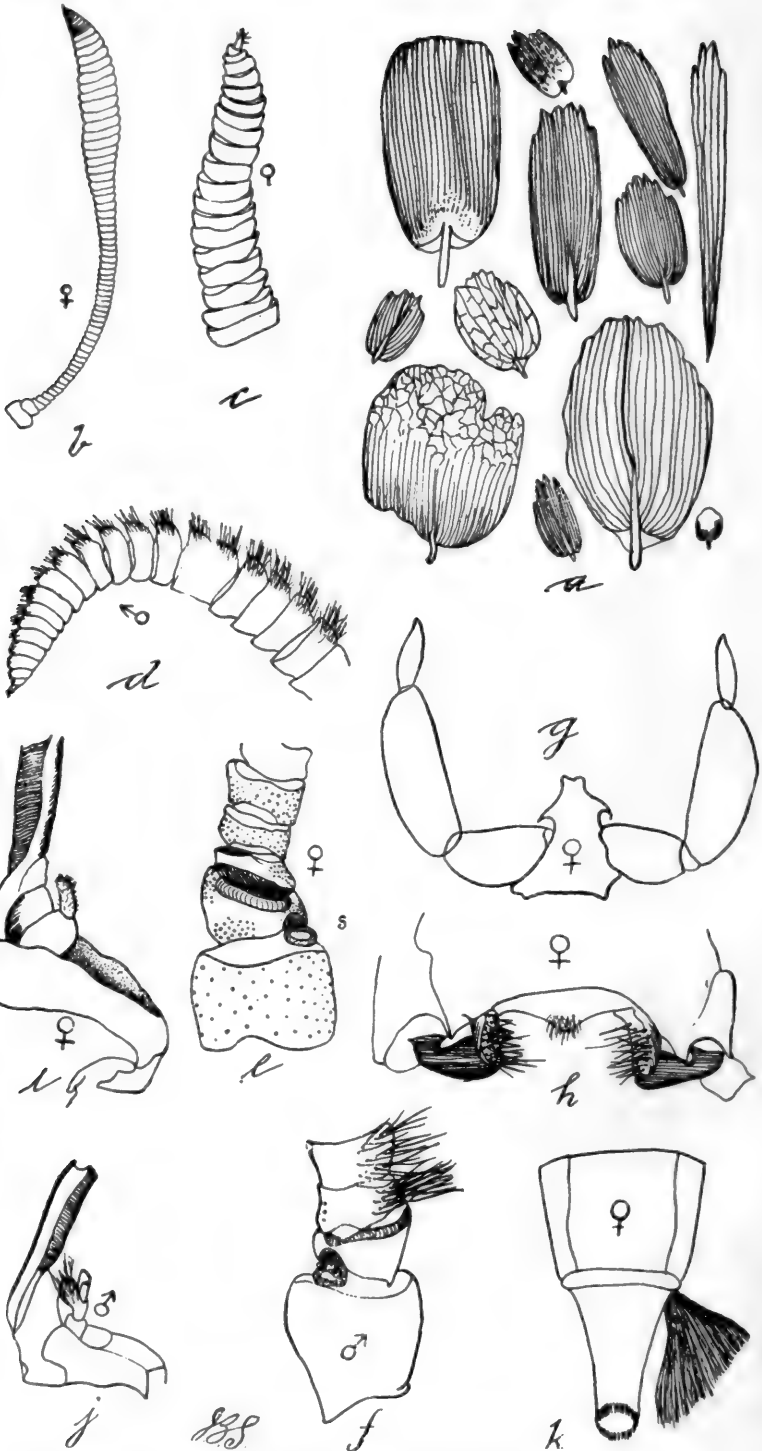
Little time left to mention many of the rarer Coleoptera, the bulk of which it will take years to fully determine, as my first year's collecting has taught me. In Yavapai County I secured that rare green-bronzed *Plusiotis tecontei* mostly in pine woods. Likewise the formidable looking *Dynastes grantii*, a hercules of Arizona, seeking mountain canyons for its habitat. In the pines of same localities of central Arizona occur the large Longicorn beetle, *Ergates spicula*. While here in S. Arizona we find *Dentrobachus geminatus*, which seems to affect old stumps of Cottonwood, and also taken at light. On sap of Willows one finds here the blue and white Elaterid, *Chalcolepidius webbii*, and in the soft rotted tissue of the giant of our desert, *Cereus giganteus* that rare, black *Hololepta cactii*. Tenebrionidæ are found in many species here, so are Meloidæ, Melolonthidæ, Carabidæ, Staphylinidæ, Cerambycidæ, Curculionidæ, and many other families. All of my Coleoptera are in the hands of Mr. Charles Palm, of New York. After one is affected with the collecting fever of Arizona, it is well-nigh impossible to give it up. As Pat would say: It is a "taking disease."

**NOTES ON SOME STRUCTURAL PECULIARITIES OF  
SANNINOIDEA EXITIOSA Say.**

By JOHN B. SMITH, Sc.D.

In the course of my economic studies on the peach borer I took occasion to examine a considerable series of specimens for structural peculiarities among the adults. While nothing of any very striking importance was discovered there were a number of interesting facts observed that I considered worthy of being figured, and these appear on Plate VI. First of all the differences in the size and character of the scaly vestiture of the wings and body attract attention. At *a*, is a series of scales drawn by means of the camera lucida to exactly the same scale, and this will give an idea of the enormous range in size as well as in shape. The differences in sculpture are also well marked and while in some cases the longitudinal striations only are noticeable, in others a truly reticulated surface seems to be present. The arrow-shaped tufts at the end of the male abdomen are prominent and well known. It is not so well known that at the base of the last segment in the female there is a brush of hair ordinarily lying close to the body like a pencil, but capable of being expanded at the will of the insect. This is shown at *k*, on the plate. Giving this the usual interpretation we may take it to be a scent organ, or "duftapparat." The virgin female soon after emergence from the pupa fixes herself at rest, elevates the abdomen, projects the ovipositor with the genital organs directed downward, the tufts expanded and awaits the male. Actual copulation was not observed, the males for some reason or other ignoring the females entirely, in captivity. The antennæ show considerable differences between the sexes. In the female the joints are not furnished with tufts of hair on the inner side as is the case in the male, but the joints seem to be thicker and toward the tip have somewhat the appearance of a series of bowls set one into the other. This is shown at *b* and *c* on the plate; the corresponding structure of the male being shown at *d*. At the base of the antenna the differences between the male and female are yet more marked, and yet here the greatest modification is found in the female. At *e* and *f* these points are brought out and special attention is called to the occurrence of a sensory fovea marked *s* in the female. This is on the basal segment of the





STRUCTURAL PECULIARITIES OF SANNINOIDEA EXITIOSA Say.

(See page 114.)

antenna and is in the form of a considerable opening covered by a tight, drum-like disc. A series of sensory punctures is found at the base of the second segment and just above the sensory fovea there is an excavation which leaves that structure entirely free. Joint 3 is peculiarly modified so that a considerable opening appears between joints 2 and 3, the upper edge of joint 2 being ridged. This ridging is overshadowed by an expansion of the third joint, and on the third, fourth and fifth segments there are numerous sensory pittings. In the male the large sensory fovea is present, but hardly as well developed as in the female. There are no sensory punctures on the second segment, and while the edge is ridged above, yet the third segment is not modified in the same way as in the female. These points can be brought out by comparing the figures already cited. It is probable that this fovea is auditory in function. In the mouth-parts there is little that is of especial interest. The labial palpi are well developed in both sexes, though the labium is confined, as usual, to a small triangular plate. The mandibles are well developed, and are moveable, as shown at *h* for the female. The maxillæ differ quite strongly in the sexes at the base, and particularly is this true of the maxillary palpi. The female at *i* and the male at *j* on plate illustrate these differences. In the female the maxillary palpus is 2-jointed, the basal joint very large and thick, the terminal joint of moderate size and much more slender. In the male the palpus is 3-jointed, the basal joint comparatively small, the second with a prominent lamellate expansion which is clothed with rather long hair; the terminal joint is plate-like and a little scoop-like in shape. Comparing the two, the maxilla in the female is larger than that in the male and better developed, which may be due perhaps to the fact that the female, as a whole, is the larger insect of the two. No trace of lacinia is present in the specimens, so far as I have examined them, but the well-developed maxillary palpi and the division of the basal parts of the maxilla assign a comparatively low place in the scale of development to this insect. Further descriptive details seem unnecessary and reference is made to the plate for a better understanding of the structures just referred to.

CRABRO SALACIS (Ckll.).

Syn. *Ammoplanus salicis* Ckll., Ann. Mag. Nat. Hist., April, 1897,  
p. 402, ♀.—T. D. A. COCKERELL.

## ENTOMOLOGICAL MEASUREMENTS.

By THOMAS L. CASEY.

The dimensional measures published by the writer up to the present time have been obtained by a simple scale and the unaided eye, fractional parts of the unit being estimated. The most convenient unit, even for division into tenths, has proved to be the single millimeter. Very lately, however, Prof. W. A. Rogers, of Waterville, Me., has ruled for me several scales in half millimeters on thin glass for use as a micrometer, being laid for this purpose upon the diaphragm within the eye-piece. The value of a division of this micrometer with the  $1\frac{1}{2}$ -inch objective I find to be .12 mm. It occurred to me to measure some types with this micrometer in order to practically compare the results with those given, for example, in my recent monograph of the Scydmaenidæ (Col. Not. vii). The only three types which happened to be at hand at the time were those mentioned below; they were separated from my cabinet for a special purpose and without reference at all to a revision of their estimated dimensions, and may therefore be regarded as a fair average of all the measures given in the monograph. The differences between the lengths and widths as observed by the unaided eye and scale, and the true dimensions as taken from the micrometer are as follows :

	LENGTH		DIFF. mm.	WIDTH.		DIFF. mm.
	Obs.	True.		Obs.	True.	
<i>Noctophus schmitti</i> . . .	2.1	2.16	— .06	0.78	0.84	— .06
<i>Eutheia americana</i> . . .	1.0	1.08	— .08	0.38	0.44	— .06
<i>Veraphis capitata</i> . . .	1.25	1.34	— .09	0.5	0.56	— .06

It seemed difficult at first to account for the virtually constant personal equation, which is evident at once from these results, until it occurred to me that in measuring with the scale and unaided eye, the scale could never be brought quite into the plane of the insect to be measured, but was always nearer to the eye by a very small but sensible distance, and therefore seen under a larger visual angle than the object; the dimension of the latter, as thus obtained, was therefore, of course, relatively too small by an amount corresponding to the difference in distance from the eye of the scale and insect. This amount is practically .06 mm., and it would be safe to increase all measurements hitherto given by the writer by this amount, but in future I shall use the micrometer for insects under 2 mm., or thereabout, in size. The



moral of it all is that sensible error may frequently arise from apparently trivial and wholly unsuspected causes, for in practice I have always been careful to place the scale as close as practicable to the object.

With the micrometer scale described above it is the easiest possible thing to measure accurately the minutest detail of an insect, the value of a division with the  $\frac{2}{3}$ -inch objective being .059 mm., a tenth of which can be readily estimated. I find, for example, the diameter of the minute reticulations of the elytra in a small *Discoderus* before me to be .012 mm., or .2 of a division. In a truly scientific description a correct procedure would demand a statement of the actual dimensions of all the parts, exactly as in describing the skull of a mammal. The descriptions which we give to-day will probably be considered absurd a few centuries hence.

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I READ with interest the article—vol. viii, p. 49—regarding the massing of Coccinelids on the summit of Moscow Mt. Idaho. Here in Los Angeles County, California, I have often seen two species of Lady-bird beetles: *Megilla vittigera* and *Hippodamia ambigua* so clustered that they could be gathered by the pint. I believe they cluster to protect each other from the cold. It is their wont to seek crevice or cranny and in betaking themselves to forked branches or space between sheathing blade and slim of palm, they have touched and learned of and enjoyed the warmth, and so the habit of piling up as we frequently see them here. The cold nights here, so in contrast to the warm sunny days, I think may have gendered this habit.

Since coming to California. I have witnessed one exceeding migration of our common thistle butterfly, *Vanessa (Pyrameis) cardui*. This cosmopolite was flying all day in great flocks and all in one direction. I saw one such migrating flight, if such it may be called, of the common milk weed butterfly, also a cosmopolitan species, *Danais archippus*, in Michigan. The numbers in that case were very great, but not comparable to the one of the other species seen here in Southern California.

There is another insect that fairly swarms here in this section each season. It may well be called the prune beetle, as it often entirely defoliates whole prune orchards. It is *Serica mixta*. Its handsome congener, *Serica fimbriata*, is larger, comes earlier, but in far less numbers. It is well that the latter comes late in August and September, else it would do serious harm. In habits and appearance it reminds one of the May beetle, *Lachnosterna fusca*, of the East in miniature.—A. J. COOK.

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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PHILADELPHIA, PA., MAY, 1898.

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I am in constant receipt of letters telling how much interest in caterpillars, pupæ and imagos is felt by the boys and girls of some of the poorest schools in large cities and asking for information about rearing and collecting for these poor children. I have done what I could to supply cocoons, pupæ and chrysalids, but of course have not been able to send half enough to "go around." Would it be amiss to ask readers of ENTOMOLOGICAL NEWS to save common kinds—in the pupal state—and send them to me for distribution in the Autumn? It seems as if any collector would be willing to spare a few specimens for the benefit and pleasure of these children who have very few opportunities of collecting for themselves. I will gladly distribute any sent me in suchwise that they will be of much use and give great pleasure.—CAROLINE G. SOULE, 187 Walnut St., Brookline, Mass.

An excellent work could be done in this way, as we are informed that in some large cities school children never see a patch of green or any natural history objects. In New York there are many children who have never been to Central Park. In one school a dead mouse created great interest among the children. Large museums frequently have duplicate mammals, birds and plants that are useless, and we know no better way to utilize them than to send them to the public schools. An interest in entomology could be readily created among children in the way suggested by our correspondent, and we hope she will receive many specimens for distribution.—Eds.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

**Quarantine Against Injurious Insects.**—Prof. Smith's article in the April News contains much that is true and appropriate, but if I rightly understand the spirit of it, I think it is partly mistaken. Without attempting a general discussion of the intricate problems involved I wish to present a few facts and arguments:

1. As to the plant diseases, due to fungi or bacteria, it is quite true that they could not usually be detected at the port of entry. The proper procedure would be to ascertain which districts in foreign countries from which we receive plants are infested by troublesome fungi, etc., and then to prohibit the importation of all plants from thence which could bear the diseases in question. For example, the grape vines in Jamaica are much affected by a rust-fungus (*Uredo vitis*), which is not now found in the United States vineyards. In my opinion Jamaica vines should not be brought to the United States at all.

2. Similarly with various insects. The oranges from the districts in Mexico where the Trypetid orange worm prevails should be altogether prohibited, for example.

3. It is, therefore, clear that, in order to effectually exclude many kinds of pests, it is of the utmost importance to have a full knowledge of their habits and distribution in foreign countries. This knowledge is not only needed for this purpose, but also to help us to deal with them should they become established here. Too little attention has hitherto been given to this phase of the subject, and we are still extremely ignorant of the insect pests of many regions from whence plants are continually imported. There ought to be a trained entomologist working on these lines on behalf of the United States in Mexico and the West Indies, and another in China and Japan.

4. Prof. Smith evidently does not appreciate the Californian quarantine work at its proper value. There is excellent evidence to show that without it the State of California would become much more badly infested by Coccidæ than at present. That several of the species, at least, would become established is shown by the fact that they have here and there passed the boundary lines and formed good colonies, which have been duly exterminated by the county authorities. To take only one species, *Diaspis amygdali* is continually being found on plants from Japan, and would unquestionably have overrun Southern California had not suitable measures been taken. Eastern experience has shown that this would almost certainly have been a very serious matter for the State.

5. It is, of course, quite true that many pests infest florists' plants, and to exclude these from the action of the law would be a serious blunder,

rendering the quarantine operations nearly useless. The worst scale-insects are nearly all feeders on a number of different plants, including ornamental ones. Sometimes, also, scales supposed to be confined to ornamental plants will unexpectedly attack fruits and other crops. Thus, *Apidiotus dictyospermi* Morgan, is common on green-house palms, but Dr. Howard has just sent me quantities of it on fruit and leaves of orange and twigs of peach, found by Mr. Koebele at Oaxaca, Mexico, Aug. 20, 1897, and Cuautla, Mexico, 1897,—at the latter place only on orange.

6. I entirely disapprove of the clause in the bill referred to—leaving the inspection to foreigners. It ought, unquestionably, to be done at the United States ports; or when abroad, by agents of the United States government.

The various interstate regulations are still, I think, in a more or less experimental stage, but I am very strongly of the opinion that the utility of inspection and quarantine at the ports of entry has been amply demonstrated by the Californian officers.—T. D. A. COCKERELL.

#### COMMENT BY THE EDITOR.

Mr. Cockerell and myself are in practical accord. The only difference is, that I talked to what was proposed; he is talking to what should be. His first three points hinge on the appointment of an expert in foreign countries and that is good policy. It is the policy pursued by Germany, which led to the exclusion of American fruits, etc., to prevent the importation of the San José scale. Under 4 Mr. Cockerell is unquestionably right when he confines himself to scale insects. Scale insects are peculiarly easy of discovery, because of the fact that they are confined to the plants, and, as a rule, not capable of being transported, except on the plants that they infest. Aside from scale insects there is no telling how many foreign insects were imported into California and have died out naturally. On 5 and 6 there is no difference of opinion.

It may be well to note that Mr. Craw has taken a very strong stand in the same direction in a recent issue of the "Los Angeles Times."

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## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

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A PICTURE for album of the American Entomological Society has been received from C. Few Seiss.

I HAVE found feeding on beach, pea and smart-weed, what I take to be the larva of *Mamestra picta*. This larva has been called the zebra caterpillar by Dr. Melsheimer on account of its stripes. The larva of *Papilio philenor* I have found on cultivated Aristolochia, and have reared eighteen very pretty chrysalids, some of them being bright sulphur-yellow. The peculiar case-bearing larvæ of *Perophora melsheimerii* were taken on oak last Fall and the larvæ are now hibernating in their cases.—I. FOSTER MOORE, Jr., Bridgeport, Conn.

**ANDRENA MARIÆ.**—Mr. C. Robertson, Trans. Acad. Sci. St. Louis, 1898, p. 47, says that *A. sphecodina* is probably a synonym of *mariæ*. This is certainly not the case, as apart from the constant difference in the color of the ♂ abdomen, the ♀ is also different. Mr. Dunning sent me a ♀ *mariæ* from Ames, Iowa, on Gooseberry (*E. D. Ball*), and I noted that it came near to *sphecodina*, but was a little larger and stouter, with a more closely punctured abdomen, and the hind tibiæ and basal joint of tarsi wholly dark. The abdomen is punctured much as in *genevensis*.—T. D. A. COCKERELL.

As an enthusiastic entomologist it gives me great pleasure to announce the opening of the season here in Massachusetts. To-day (March 13) I captured a very fair specimen of *Vanessa antiopa* which was disporting itself by the roadside near my home in Dorchester. I was, of course, delighted to see this harbinger of Spring which gives such promise of the better days to come when I can be out with my net pursuing my hobby (Lepidoptera) to my heart's content. This is the earliest capture in this vicinity that has come to my knowledge and thinking the fact worth recording I have written to you. Until I hear to the contrary I shall claim the distinction of having taken the first butterfly in the vicinity of Boston this year.—HARRY H. NEWCOMB.

**IN REPLY:**—A note in a recent bulletin by Prof. Gillette necessitates notice from me for the reason that it questions my honor as a conscientious scientific worker. Those who know me personally will understand that there must be too good sides to the question. I shall open up no public discussion of the matter, as this almost invariably results in a bandying of personalities which is burdensome alike to reader and journal, and in no way adds to the sum of scientific knowledge. Any one enough interested in the matter to address me will be given a view from a distinctly different standpoint than that taken by Prof. Gillette, and one which, in simple justice, is entitled to equal consideration.—C. F. BAKER, Auburn, Ala.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

1. Proceedings of the Academy of Natural Sciences of Philadelphia, 1898.—
2. Transactions of the American Entomological Society, Philadelphia.—
4. The Canadian Entomologist, London, Ont., April, '98.—
5. Psyche, Cambridge, Mass., April, '98.—
6. Journal of the New York

Entomological Society, March, '98.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; publications of, '98.—**8.** The Entomologist's Monthly Magazine, London, April, '98.—**9.** The Entomologist, London, April, '98.—**11.** The Annals and Magazine of Natural History, London, April, '98.—**12.** Comptes Rendus. L'Académie des Sciences, Paris, '98.—**17.** Sitzungsberichte der königlich preussischen Akademie der Wissenschaften zu Berlin, '97.—**35.** Annales, Société Entomologique de Belgique, xlii, 2, Brussels, Mar. 19, '98.—**38.** Wiener Entomologische Zeitung, xvii, '98.—**41.** Entomologische Nachrichten, xxiv, Berlin, Feb., '98.—**44.** Verhandlungen, k. k. zool.-bot. Gesellschaft in Wien.—**65.** Feuille des jeunes Naturalistes, Paris, April-May, '98.—**68.** Science, New York, '98.—**69.** Bolletino d. Società Italiana Entomologica, xxix, 1-3, Florence, Sept. 10, '97.—**70.** Journal, Institute of Jamaica, ii, 5, Kingston, Dec., '97.—**71.** Procès-Verbaux des seances, Société des Sciences Physiques et Naturelles de Bordeaux, '97.

**The General Subject.**—A bafi-Aigner, L. On the causes of butterfly pigmies, figs. [In Magyar], Rovartani Lapok, vi, 3. Budapest, March, '98.—Balbiani, E. G. On the conditions of sexuality in the plant lice [Aphidæ], observations and reflections, L'Intermédiaire des Biologistes. Paris, Feb. 20, '98.—Bethune, C. J. S. Professor J. Hoyes Panton, obituary, **4.**—Cockerell, T. D. A. The insect fauna of Cinchona, **70.**—Fletcher, J., Harrington, W. H., and Simpson, W. Report of the Entomological Branch 1897, Ottawa Naturalist, April, '98.—Hutchinson, H. Collecting at night, **4.**—Masse, G. Revision of the genus *Cordyceps* (transl. by R. Ferry), 3 pls. Revue Mycologique, Toulouse, April, '98.—Perez, J. Some effects of mechanical actions on the development of non-fertilized eggs of the silk-worm, **71.**—Roule, L. L'Anatomie Comparée des Animaux basée sur l'Embryologie. . . . Avec 1202 figures dont la plupart originales. Paris, Masson et Cie, 1898. 1971 pp., 8vo., 2 vols. Arthropods in vol. ii.—Ruhmer, G. W. The transitions from *Araschnia levana* L. to var. *prorsa* L. and the amount of cold employed in the experiment, **41**, 3.—Stoll, O. Zur Zoogeographie der landbewohnenden Wirbellosen. Mit 2 Tafeln. Berlin. R. Friedländer & Sohn 1897; 8vo., pp. 114.—Willey, A. On *Peripatus novæ-britanniæ* n. sp., **11.**

**Economic Entomology.**—Abstracts of recent articles in Experiment Station Record ix, 7, **7.**—Boyer, J. Struggle against injurious insects in California, figs., La Nature, Paris, March 12, '98.—[Chastrey, H.] The tsetse fly, Revue Scientifique, Paris, Mar. 26, '98.—Chittenden, F. H. The fruit-tree bark beetle (*Scolytus rugulosus* Ratz.) figs., **7**, Circular 29, Second Series; The tobacco flea-beetle (*Epitrix parvula* Fab.), figs.; On insects that affect asparagus, figs.; Notes on cucumber beetles, figs.; Notes on the strawberry weevil, its injuries and bibliography, **7**, Bull. 10, n. s.—Craig, C. F. The transmission of disease by the mosquito, figs., New York Medical Journal, Mar. 19, April 2, '98.—DelGuercio, G. On the larvæ mining in young pears and on the

times and means best adapted to limit their diffusion, 1 pl., **69**.—Gould, H. P. Notes on spraying and on the San José scale, Bulletin 144, Cornell University Agric. Exper. Station, Ithaca, N. Y., Jan., '98.—Howard, L. O. The fig-eater, or green June-beetle (*Allorhina nitida* L.), figs.; Further notes on the house-fly, **7**, Bull. 10, n. s.; The San José scale in 1896-1897 (map), **7**, Bull. 12, n. s.; Recent laws against injurious insects in North America, together with the laws relative to foul brood, **7**, Bull. No. 13, new series.—Hunter, W. D. Destructive locusts in 1897, **7**, Bull. 10, n. s.—Krüger, F. Further on the San José [scale] question, Gartenflora, Berlin, March 15, '98.—Marlatt, C. L. The peach twig-borer (*Anarsia lineatella* Zell.), figs., **7**, Bull. 10, n. s.—Matsumura, M. Two Japanese insects injurious to fruit, figs., **7**, Bull. 10, n. s.—Quaintance, A. L. Some strawberry insects, figs.; Three injurious insects: bean leaf-roller [*Eudamus proteus* L.], corn delphax [*Delphax maidis* Ashm.], canna leaf-roller [*Hydrocampa cannalis* Fernald ms.],\* 3 pls. Bulls. 42, 45, Florida Agric. Exper. Station, Deland, Fla., March, '98.—Smith, J. B. The peach-borer (*Sanninoidea exitiosa* Say). Experiments with hydraulic cement, figs., Bulletin 128, New Jersey Agric. Exper. Station, New Brunswick, N. J., Feb. 2, '98.—Stedman, J. M. See Lepidoptera.—Wachtl, F. A. *Cephalia lariciphila* n. sp., a new enemy of the larch (*Larix europæa* DC.), **38**, 3, Mar. 31.—Weed, C. M. Dept. of Entomology, figs., in Ninth Annual Report, Bulletin 48, New Hampshire Agric. Exper. Station, Durham, N. H. Nov., '97.—Zehnter, L. The sugar-cane borers of Java, figs., **7**, Bull. 10, n. s.—See many short notes by various writers, **7**, Bull. 10, n. s.

**Arachnida**.—Duerden, J. E. Identification of the ticks of Jamaica, **70**.—Holland, W. J. Concerning ticks, **4**.—Wasmann, E. Capture of ants by *Theridium triste* Hahn, Zoologischer Anzeiger, Leipsic, Mar. 21, '98.

**Myriopoda**.—Cook, O. F. A revision of tropical African Diplopoda of the family Strongylosomatidæ, Proceedings, U. S. National Museum, No. 1137, Washington, '98.—Heymons, R. Communications on the segmentation and structure of the Myriopoda, figs., **17**, Oct. 21.—Kenyon, F. C. A peculiar glandular structure found in a Mexican Diplopod, **68**, Feb., 18.

**Orthoptera**.—Blatchley, W. S. Two new Melanopli from Les Cheneaux Islands, Michigan,\* **5**.—Heymons, R. On the organization and development of *Bacillus rossii* Fabr., figs., **17**, Mar. 18.—v. Kima-kowicz, M. Abdominal fangs of the Forficulidæ, Verhandlungen und Mittheilungen des Siebenbürgischen Vereins für Naturwissenschaften zu Hermannstadt, xlvi, 1897.—Scudder, S. H. The Alpine Orthoptera of North America, 4 pls., Appalachia viii, 4, Boston, March, '98.—Walker, E. M. A new grasshopper from Ontario,\* **4**.

**Neuroptera**.—Calvert, P. P. Odonata (Dragonflies) from the Indian Ocean, and from Kashmir, collected by Dr. W. L. Abbott, figs., **1**.—Cockerell, T. D. A. *Chrysopa punctinervis* McL., **9**.—Currie,

R. P. New species of N. American Myrmeleonidæ, i.\* **4**.—Kempny, P. Contribution to knowledge of the Plecoptera, figs., **44**, 1898, 1, Mar. 5.

**Hemiptera**.—Baker, C. F.—Some new Bythoscopinae with notes on others,\* **5**.—Balbiani, E. G. See the General Subject.—Carpenter, G. H. A new marine Hydrometrid, 1 pl.,\* **8**.—Cockerell, T. D. A. Three new Coccidæ of the subfamily Diaspinæ,\* **5**.—Cockerell, T. D. A., and Tinsley, J. D. On a new wax-producing insect found in Jamaica,\* **70**.—Cooley, R. A. New species of *Chionaspis* and notes on previously known species,\* **4**.—Gillette, C. P. A few new species of *Deltocephalus* and *Athysanus* from Colorado, figs.; List of original types of species in the superfamily Jassoidea now in the collections of the Colorado Agricultural College and Agricultural Experiment Station, Bull. No. 43 of same, Fort Collins, Col., Mar., '98.—Hopkins, A. D. The periodical cicada in West Virginia, figs., map, 4 pls.; Bulletin 50 West Virginia Agric. Exper. Station, Morgantown, W. Va., Jan., '98.—Johnson, W. G. Notes on the external characters of the San José scale, cherry scale, and Putnam's scale, **4**.—Montandon, A. L. Hemiptera cryptocerata,\* **44**, xlvii, 7, Oct. 7, '97.—Newstead, R. Observations on Coccidæ (No. 17), figs., **8**.—Quaintance, R. See Economic Entomology (strawberry insects).—Smith, J. B. The mouth-parts of the Rhyngota, **68**, Mar. 18.—Webster, F. M. Some recent additions to the insect fauna of Ohio, figs., **4**.

**Coleoptera**.—du Buysson, H. Boxes for raising larvæ of Coleoptera, figs., **65**.—Champion, G. C. A list of the Lagriidæ, Othniidæ, Nilionidæ, Petriidæ, Melandryidæ, Pedilidæ (part), Pyrochroidæ and Mordellidæ supplementary to the 'Munich' Catalogue, **35**.—Chittenden, F. H. See Economic Entomology.—Escherich, K. Contribution to the morphology and classification of the Coleopterous family Rhysodidæ, 1 pl., **38**, 2, Feb. 28.—Howard, L. O. See Economic Entomology.—de Lapouge, G. Rearing larvæ of Carabids, **65**.—Pic, M. General list of the Coleoptera Heteromera of the genus *Macratrria* Newm. or *Macrarthrius* Laferté, **35**; Synoptic study of the Longicorn Coleoptera of the genus *Cortodera* Muls., **65**.—Rengel, C. On the periodic casting off and regeneration of the entire mid-gut epithelium of *Hydrophilus*, *Hydrous* and *Hydrobius*, 1 pl., Zeitschrift für wissenschaftliche Zoologie, lxiii, 3, Leipsic, Mar. 29, '98.—Rosenberg, W. F. Some new species of Coleoptera in the Tring Museum,\* *Novitates Zoologicae*, v, 1, Tring, Mar. 15, '98.

**Diptera**.—Baker, C. F. Notes on Siphonaptera, with descriptions of four new species,\* **6**.—Cholodkovsky, N. On some rare parasites [*Gasterophilus*] in man [in Russian], Travaux, Société Imperiale des Naturalistes de St. Petersburg, Comptes Rendus, xxviii, 1 Sept. '98.—Coquillett, D. W. Notes and descriptions of Oscinidæ,\* **6**; On the habits of the Oscinidæ and Agromyzidæ reared at the U. S. Dept. of Agriculture; The buffalo gnats, or black flies, of the United States,\* figs., **7**, Bull. 10, n. s.—Frauscher. The Tief Collection of Diptera, Carin-



thia, lxxxviii, 1, 1898.—Mik, J. Dipterological notes (2), x, **38**, 2, Feb. 28.—Snyder, Mrs. A. J. *Trypeta solidaginis*, **4**.—Townsend, C. H. T. Diptera from the lower Rio Grande Tamaulipan fauna of Texas, ii,\* **6**.

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## Doings of Societies.

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A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held March 24th, Mr. C. S. Welles, Director, presiding. Twelve members were present and Dr. John B. Smith, of New Brunswick, N. J., visitor. Dr. Calvert stated that a student at the University of Pennsylvania had been interested in chestnut growing, and was under the impression that isolated trees were less likely to be troubled by *Balaninus* larvæ. Dr. Calvert said he would take advantage of the presence of Dr. Smith to ask his opinion on the subject. The latter said a single tree standing alone would be likely to escape, but it would be of no advantage to plant a grove with the trees wide apart. The speaker further said the best way to prevent *Balaninus* injury is to gather the chestnuts as soon as they fall to the ground and send them to market, or else put them in a tight receptacle and kill all larvæ that come from the nuts. Mr. Wenzel said his experience had taught him that isolated trees always produce an abundance of all kinds of insects. Dr. Calvert also asked if *Adalia bipunctata* ever injured vegetation. Dr. Smith replied that he did not believe the species in question ever injured plants. Mr. Johnson exhibited specimens of *Tabanus abdominalis* and *exul*. The principal character distinguishing the species is that the posterior cell is covered in *abdominalis* and open in *exul*. In two specimens the posterior cell was open in one wing and closed on the other, thus showing apparent running together of the species. Prof. Smith said variation was always to be expected in venation. Dr. Calvert said differences in vena-

tion on the two sides of the body in the Odonata were not uncommon, and the characters of the majority of specimens would decide the value of the characters. The same speaker called attention to a paper on the Odonata of Maine by Prof. F. L. Harvey, in the current number of ENTOMOLOGICAL NEWS, stating that the male sex of *Gomphus nævius*, previously unknown, was described therein, and exhibited both sexes of this species, as also the types of *Somatochlora elongata* Scud., var. *minor*, described in a foot-note to the same. Dr. Calvert also reported the capture of *Nehalennia posita* (March 24th) in the greenhouse of the University of Pennsylvania. Dr. Smith asked if variation of moment occurred in the male genitalia of dragonflies. Dr. Calvert said in the American species he had not noticed variation of consequence, but in some European species considerable variation had been found. Dr. Smith said that in the Noctuidæ the genitalia were unvariable, while in the genus *Lachnosterna* the special value of studying the genitalia had been well illustrated. A number of good species had been confused before a study of the genitalia had been made. A vote of thanks was tendered Mr. Geo. B. King for his gift of slides showing various insects. Dr. D. M. Castle was elected a member of the Section.

Dr. HENRY SKINNER, *Recorder*.

At the meeting of the Feldman Collecting Social held on April 12th, Mr. H. Wenzel, on behalf of Prof. Smith, extended an invitation to the members to attend the April meet of the Newark Entomological Society to be held in New Brunswick April 24, 1898.

Mr. Bland exhibited specimens of *Opatrinus, notus* taken at Manayunk, on March 16th, and showing variation in marking and punctuation.

Dr. Skinner, on behalf of Mr. Hornig, recorded the capture of *Anthocarid genutia* on April 3d, quite an early date for this species.

Mr. Aaron exhibited a nest of common mud dauber, *Sceliphron cementarius*. His attention had been called to this nest in the field, because it had apparently been perforated in several places and the perforations then filled with a clay of a different color from that composing the body of nest. He had reared a *Trypoxylon albitarse* from it and found, further, the larva of an *Osmia*, evidently parasitic on *Trypoxylon*-larvæ. The same speaker exhibited a drawing of *Antheræa yamamai*, which produces the wild silk of Japan. It is not subject to many diseases, as is the case with the silk worm of the United States, *Bombyx mori*, and the speaker believed the introduction of *Antheræa* into the United States would be successful, inasmuch as the climatic conditions of the southern United States and Japan are known to be quite similar. *Antheræa* feeds on oak.

Dr. Skinner referred to the record in April number of ENT. NEWS by Mr. Schaus of the occurrence of the tropical *Thecla telca* at Miami, Florida, and spoke of the beauty of the species.

The secretary recorded the capture of a specimen of *Megacilissa yarrowi* in Florida by Mrs. Slosson. It had only been recorded from the southwestern United States.

Dr. Skinner described the method of emergence of *Actias luna* from the cocoon. The cocoon is softened by an acid liquid excreted by the moth and is then perforated by a serrated spear-shaped attachment on the costa. In reply to Mr. Aaron he said these attachments are covered by dense hair in the emerged insect, but are easily observed on removing the hairs.

WILLIAM J. FOX, *Secretary.*

Newark Entomological Society, March 13, 1898, Mr. Herman Erb and Mr. O. Buchholz were elected members. The order for the meeting was an exhibit of the species of *Callimorpha*, all the members bringing their entire collections of this genus. The largest collection, showing the finest series, was shown by Mr. J. Doll. Prof. Smith showed a series illustrating typical forms of all the species and made blackboard sketches illustrating typical wing-forms and markings and showing how the variations were derived in each typical form. In comparing the collections it was found that Mr. Angleman had a species which differed from all that had been previously described and which was declared by Professor Smith to be new. Examples of this species were found in several collections, but in such a way as to make them appear parts of other series. The series in Mr. Angleman's collection showed that the type of maculation was different from that of any other species. Mr. Angleman stated in this connection that the form was the common one in the region in which he had been in the habit of collecting and was what he had taken most abundantly. He further stated that in 1894 he took at light, in Newark, specimens of *Euphanessa meridiana* Slosson, and the species had been in his collection ever since. The special topic assigned for the April meeting was the genus *Arctia*.

## OBITUARY.

JAMES BEHRENS, who was one of California's early collectors in Lepidoptera, died on March 6th at San José at the age of 74. He was born in Lübeck, Germany, on June 30, 1824. Although he did not collect in late years he took a great interest in the progress of entomology. His fine collection he sent to Lübeck a few years ago and it is now in the Museum of Lübeck.—EDW. M. EHRHORN.

Dr. D. S. KELLICOTT, Professor of Zoology and Entomology in the Ohio State University, at Columbus, Ohio, died April 13th, at his home in that city.





JOSEPH ALBERT LINTNER.

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# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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### JOSEPH ALBERT LINTNER.

It is with sorrow and regret that we announce the death of Prof. Lintner on May 5th at Rome, Italy.

“JOSEPH ALBERT LINTNER, Ph.D., of German descent, was a son of Rev. George Ames Lintner, D.D., who was born in Minden, Montgomery County, N. Y., in 1796, was graduated from Union College in 1817, and was pastor of the Lutheran churches of Schoharie, Middleburg and Cobleskill for many years. Prof. Lintner was born in Schoharie, February 8, 1822, attended the Jefferson Academy; was graduated from the Schoharie Academy in 1837 and spent ten years in mercantile pursuits in New York city, where he also prosecuted his studies under the Mercantile Library Association. He contributed scientific articles to the Tribune and other newspapers, and returning to Schoharie in 1848, engaged in mercantile business. In 1853 he began a collection of insects, and in 1860 removed to Utica, where, for seven years, he manufactured woolen goods. Meanwhile, he had steadily pursued his scientific studies, for which he had a natural taste and unusual capacity. In 1868 he became zoological assistant in the State Museum of Natural History at Albany; in 1880 he was appointed, by Governor Cornell, State entomologist;

in 1883 he was placed on the scientific staff of the Museum, a position he held until his death. He has written about one thousand papers on scientific subjects, published twelve Annual Reports on the Injurious and other Insects of the State of New York, and was widely recognized as one of the foremost entomologists of the world. His services in the interests of agriculture and allied pursuits have been of great value to both the State and Nation. He was a forceful speaker, an accomplished writer, and a man of not only high scientific, but of rare personal attainments. In 1884 the Regents of the University of the State of New York conferred upon him the honorary degree of Ph.D. He was president of the Entomological Club of the American Association for the Advancement of Science, and the Association of Economic Entomologists, two years each, has been president of the department of natural science in the Albany Institute since 1879, and was a member of the American Entomological Society, the Entomological Society of Washington, D. C., the Entomological Society of Ontario, Canada, the New York Academy of Science, the Buffalo Society of Natural Sciences, the Cambridge Entomological Club, the Academy of Natural Sciences of Davenport, Iowa, the Oneida Historical Society, the Kansas State Horticultural Society, the New York State Agricultural Society, the Musée Royal d'Histoire Naturelle de Belge, Société Imperiale des Naturalistes de Moscou, and Société Entomologique de France, and since August 21, 1873, fellow of the American Association for the Advancement of Science. For twenty-five years he was editor of the entomological department of the "Country Gentleman." October 2, 1856, he married Frances C., daughter of Hon. Holmes Hutchinson, of Utica, N. Y. Their children are George A., of Minneapolis, and Charles H. (deceased), of St. Paul, Minn., and Mary C. and Laura B., of Albany, N. Y."

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YEARS ago when I collected Lepidoptera in this locality I never saw a specimen of *Pyrgus tessellata* anywhere. On coming back here this Fall the first thing that attracted my attention were specimens of *tessellata* flying along the sidewalks and in our back yard; they seemed to be quite common.—G. R. PILATE, Dayton, O.



**Some Observations on the Hunting Spider, *Lycosa vulpina*.\***

By MISS ANNIE B. SARGENT.

(Communicated to the Naturalists' Field Club, University of Pa., Nov. 12, 1897.)

Among the hunting spiders found in the mountains of the central part of Pennsylvania, *Lycosa vulpina* is one of the largest. It excavates burrows or trenches under rocks and stones and sometimes under fallen trees. In the Spring this spider is especially conspicuous because of the large yellowish-white egg-ball which it carries suspended from its spinnerets.

The specimen about to be described was captured early in May, bearing its egg-ball. In captivity it was provided with a box resembling, as nearly as possible, the mountain home it had just left. For several days the spider roamed restlessly about trying to find a way of escape. If flies were put into the box they were devoured, but abundance of food and apparently comfortable quarters did not suffice to make her contented. After several days I was dismayed to find the spider tearing the egg-ball open. The eggs were scattered, and the restless searching for an opening continued. Whether the eggs were unfertilized and the spider's instinct impelled her to destroy the ball, or whether it was the time when she would ordinarily have freed the young spiders is difficult to say. A sense of her captivity may have come into play here in some degree. However, she continued to pry into the cracks of the lid, ever looking for a way out, for ten days more, and then something far more important began to occupy the spider's time. She dug a burrow right down through the dry grass and earth, slanting it slightly toward the sun. Whether the object was to admit the sun or not is a question, for in the wild state all the burrows I have seen are entirely away from access of sunlight. Another noticeable feature about this burrow was that it had no protection whatever above it, although there were plenty of large stones in the box. The box was covered with glass, but it seems curious that the spider should realize sufficient protection in this.

After the burrow was finished the spider went through a most interesting performance in one corner of the box. She turned

\* A brief bibliography for the Lycosidæ, including some titles on habits, is given by Mr. J. H. Emerton in Proceedings of the Connecticut Academy of Arts and Sciences vol. vi, p. 482.

around in a circle as if her body was fastened to the ground by a pivot touching her spinneret down to the ground at intervals. It became evident after a few circles that she was drawing out a strand of silk and fastening it down with every touch. This process was continued until quite a mat was made, when the whole thing was taken up and carried down the burrow. What went on in the burrow I do not know, but the next morning the mouth was sealed with a film of web. About three days later, in the morning, I found the spider standing in the mouth of the burrow twirling, with the hind legs, a brand new egg-ball in the sun. After some time she went down again and before the day was done a new film was made. From this time on I saw the spider at irregular intervals. She would stay sealed up in the burrow for two days or more, then in the morning—always in the morning—the film would be rudely torn away and the spider would stand motionless holding the ball in the sun or twirling it with her hind legs. Again, she walked about the box, took a drink of water, or ate a fly before returning to the burrow. She frequently detached the ball and, holding it in her jaws, made a sort of “shirred” ridge around it. What this process was for I could not make out. She may have been making the fastenings firmer, or she may have been testing the eggs in some peculiar fashion. After about a week of these proceedings the spider went into the burrow and remained sealed up for three or four days. One morning after this she issued forth to take a drink of water with her back literally crowded with tiny white spiders. After a short time she went into the burrow with her family and, as usual, was seen no more that day; but the burrow was not sealed. She came out every day after this and caught flies in spite of her family burdens. The little spiders had no share in these meals, but seemed to thrive notwithstanding. At this stage the glass was accidentally pushed off and the spider escaped. Several days later she was recaptured, but the little ones were gone except six. These I put into pill-boxes. Each spider had a box to itself. The boxes were partly filled with earth, and all were covered with a sheet of glass. They were fed on the tiniest flies to be found, at first, and grew rapidly, casting their skins at intervals. Before each moult they stopped eating for a day or two, built a little shelter of web and earth against the side of the box, and under this the skin was cast. At no other time did they

attempt to make a nest of any kind. They never ate their skins, as many insects, and even some of the vertebrates do. Meanwhile, the mother spider made a new burrow and hatched a second brood. These were not quite so numerous, and as the Summer was nearly spent I did not save any of them. The mother began one more egg-ball after this, but when it was only partly done she gave it up and spun no more.

Of the six I had saved, three died and one escaped before they had outgrown the pill-boxes. One survivor was kept through the Winter and the next succeeding Summer, when I gave it its freedom. Having been raised in a box this spider never tried to get out, and did not seem to be aware of when the lid was off. When finally I let it go I had to poke it out of the box, and then it acted as if it were in a new country, feeling its way along through the grass then stopping to rest. Spiders that were captured in the adult state always ran very briskly when they regained their freedom.

In the matter of catching flies this spider was an acrobat, and I am sure could detect motion at a distance of at least two inches. There was one particular corner in which I always put the flies and if the spider was hungry it could see those flies coming through the hole and came up to seize them, as they came in, almost out of my fingers. I have seen it clinging to the top of the box and the instant a fly passed beneath, it dropped down right side up and caught its victim. Never once did I see this spider miss its mark. It did not spring until it was sure, but it never miscalculated. If the spider had eaten nothing for several days it would catch flies at long distances and in the most awkward positions. It would catch them in succession, too, until it held three in its jaws at the same time. If it was not very hungry it did not catch flies until they came within easy range. Sometimes, when the spider was fasting, a fly might walk over its legs and cause it to twitch them out of the way, but it would not catch the fly. One time I placed a large ichneumon-fly in the box. The spider stole up to it and barely touched it with the tip of its foot, as a cricket would feel with its antennæ, then waited; the ichneumon moved and the spider touched it again. But the spider went no nearer and would not seize the ichneumon, although it flew right against the spider. The spider evidently appreciated something not to its taste in the ichneumon and this

would go to show that the spider is guided by something more than the mere motion of a smaller creature in selecting its food. I noticed also that the older spider did not like metallic-green flies. She would not eat them unless very hungry indeed. On several occasions she dropped them uneaten, although usually they flew about the box unnoticed. That mere motion plays a large part in recognizing food, however, is evident from the fact that often when I moved my finger back and forth over the glass the spider came up to that place evidently expecting flies. That the spider followed the motion of the flies at times was also evident, for I have seen it elevate or lower its head in the direction of the fly, turn its entire body around as the fly moved, and in some cases follow it. On one occasion no flies were to be had, and finally I decided to try raw meat. As long as the meat merely lay in the box the spider would not touch it, but when I put a thread through it and swung it back and forth the spider rushed out and seized its supposed prey. The meat once in its jaws the spider deigned to eat it. After a few days, however, it refused to eat meat. I then offered it cooked meat and even bits of hash which satisfied it for a few days more, when I succeeded in obtaining some flies.

Meanwhile the mother spider was unmistakably growing old. She could not catch flies unless they were very close, and even then she frequently lost her hold of them. Her jaws seemed to have lost all their power and gradually stiffened, until finally she made no attempt to catch flies. Her legs and body came to have a shriveled, dried appearance, and she walked unsteadily, rolling from side to side. Her faculties were failing just as surely as they do in higher animals, and one morning I found her stiff to the last degree and dead.



### NOTES ON AMERICAN SPHINGIDÆ.—II.

By WILLIAM SCHAUS.

The following notes are in continuation of a paper published in ENT. NEWS vol. vi, p. 141.

***Theretra epaphus*.**

*Chær. epaphus* Bdv., Sp. Gen. Het. i, p. 267, 1875.

[1881.

*Chær. cyrene* Druce, Biol. Cent.-Am., Lep. Het. i, p. 11, T. 1, f. 5.

*Theretra drucei* Kirby, Cat. Lep. Het. p. 658.

My attention was drawn to the above synonymy by Mons. C. Oberthür, who compared Boisduval's type with the excellent figure in the *Biologia*.

***Theretra neoptolemus*.**

*Sphinx neoptolemus* Cr., Pap. Exot. iv, t. 301, fig. F, 1780.

*Chær. trilineata* Walk., Cat. Lep. Het. B. M. xxxi, p. 30, 1864.

I can see no reason for separating Walker's species from *T. neoptolemus*.

***Theretra isaon*.**

*Chær isaon* Bdv., Sp. Gen. Het. i, p. 272, 1875.

*Theretra olivacea* Roths., Nov. Zool. i, p. 77, 1894.

My specimens of *T. isaon*, compared with type of Boisduval, agree with the description of *T. olivacea*.

***Theretra pistacina*.**

*Philampelus pistacina* Bdv., Sp. Gen. Het. i, p. 199, 1875.

*Chær. jocasta* Druce, Ann. Nat. Hist. (6), ii, p. 237, 1888.

Of the above species I have a specimen compared with both types.

***Theretra aglaor*.**

*C. aglaor* Bdv., Sp. Gen. Het. i, p. 275, 1875.

*C. libya* Druce, Ent. Month. Mag. xiv, p. 249, 1878.

*C. lælia* Druce, Ent. Month. Mag. xiv, p. 249, 1878.

*C. libya* is certainly the same as *C. aglaor*, and in the B. M. collection the specimen labeled as *C. lælia* by Mr. Druce is inseparable from the specimen which he has labeled as *C. libya*.

***Theretra arpi* sp. nov.**

Head and thorax olive-brown; a white line in front of the antennæ; patagiæ laterally streaked with white; a reddish brown spot on collar, a similar spot on patagiæ and some reddish brown shades posteriorly on thorax. Abdomen olive-green above, grayish below. Primaries light gray, heavily shaded with olive-green in the disc, and otherwise covered with greenish striæ; an antemedial, geminate, dark green curved line not reaching the inner margin; a minute black point in the cell; three post-medial dark lunulate lines, followed by a row of points on the veins; an olive-green apical spot and a subterminal cluster of dark scales between 5 and 6. Secondaries dark brown; the costal margin, the apical portion of the fringe, the inner margin narrowly, and a broad subterminal shade at the anal angle, yellowish; the subterminal shade somewhat suffused with olive-green. Exp. 66 mm.

*Hab.*—Rio Janeiro.

**Dilophonota ænotrus.**

*Sphinx ænotrus* Cr., Pap. Ex. iv, T. 301, C. 1780. [f. 4, 1865.

♂ *Erinnyis melancholica* Grote, Proc. Ent. Soc. Phil. v, p. 77, T. ii,

♂ *Anceryx janiphæ* Bdv., Sp. Gen. Het. i, p. 131, 1875.

♀ *Erinnyis cinerosa* Grote, Ann. Lyc. N. Y. viii, p. 201, 1867.

♀ *Anceryx piperis* Bdv., Sp. Gen. Het. i, p. 132, 1875.

Much confusion has arisen from the careless identification of Cramer's figure, but the description accompanying the plate leaves no doubt as to the species represented, for attention is drawn to the color of the abdomen below, which is white with four black points on either side. In the species heretofore considered as *ænotrus*, the abdomen below is brownish gray without any spots. For this latter form I propose the name of *Dilophonota cramerii*; it is well described by Boisduval in his Sphingidæ, p. 129, under the name of *Anceryx ænotrus*. *D. cramerii* is found throughout tropical America and also occurs in southern Florida.

**Dilophonota domingonis.**

*D. domingonis* Butl., Proc. Zool. Soc. London, p. 258, 1875.

*D. festa* H. Edw., Papilio ii, p. 11, 1882.

The above names refer to the same species; it is abundant in Mexico and the sexes are more similar than is usually the case in this genus. This species has been considered a dark form of *D. obscura* = *rhæbus* Bdv., but I have examined over a hundred specimens of each species without finding any intermediate forms; moreover, in *D. obscura* the sexes are quite different. I find the species of *Dilophonota* very constant in their markings, *D. cramerii* alone showing some variability in the color of the marginal areas of the primaries, the lines, however, remaining unaltered.

**Isognathus scyron.**

*Sphinx scyron* Cramer, Pap. Ex. iv, iv, t. 301, E, 1780.

*Anceryx pedilanthi* Boisd., Spec. Gen. Het. i, p. 124, 1875.

On examination of the type I find Boisduval's species the ♂ of *I. scyron*.

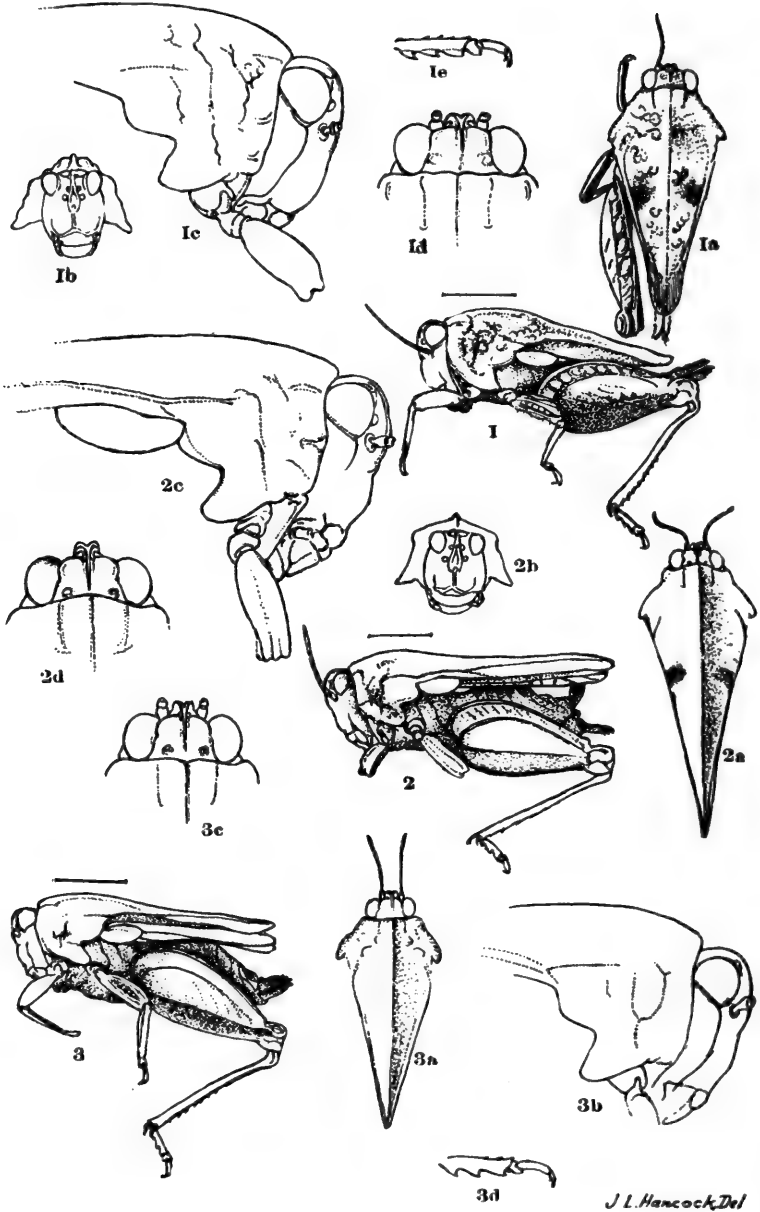
**Isognathus papayæ.**

*Anceryx papayæ* Bdv., Sp. Gen. Het. i, p. 126, 1875.

*Isognathus laura* Btl., Trans. Zool. Soc. London, ix, p. 601.

*Papayæ* type is the ♀, *laura* type, the ♂ of the same species, and both will no doubt prove to be a slight variety of *I. leachii* Swains.





TETTIGIANS OF THE GENUS NEOTETTIX (Hancock).



## THE SPECIES OF THE NEW GENUS *NEOTETTIX* WITH A KEY TO THE GENERA OF NORTH AMERICAN *TETTIGIÆ*.

By J. L. HANCOCK.

(See Plate VIII.)

In the present notes are described several species of Tettigians of a hitherto unrecognized genus from the southern United States. I have, furthermore, outlined a table of the genera of Tettigiæ, including therein the new genus *Neotettix*, together with the three already known to occur within our borders. These are namely: *Nomotettix* Morse, *Neotettix* gen nov., *Paratettix* Bolivar, and *Tettix* Charpentier. The species of *Neotettix* are small in stature, in which particular they resemble *Nomotettix*. The wings are frequently abbreviated, and macropterous as well as brachypterous forms are represented among them without the apical process of the pronotum being much of it at all extended further backwards than the knee of the hind femora. These dimorphic phases of structure are not considered separately. It will be observed that Bolivar, in 1887, described a species in his *Essai sur les Acridiens de la tribu des Tettigidæ* p. 246, as *Tettix femoratus* Scudder. That there is a discrepancy regarding the identity of the species seems fairly certain. A specimen which was identified by Prof. Bolivar as strictly this species was previously kindly examined by Mr. Scudder, the author of the species, who informed me of a difference existing in the width of the vertex between the eyes as compared to the original *femoratus*. Partly on the strength of Mr. Scudder's assertion: "It is quite certain that the specimen you send cannot be that species from the width of the vertex between the eyes" and the knowledge gleaned from an examination of a considerable series, I have proposed the appellation *Neotettix bolivari* in deference to my distinguished colleague. The generosity of Mr. A. Bolter, of Chicago, who placed his collection of this group freely at my disposal made it possible to include two of the three species here described. One of these I take pleasure in naming in his honor. It is quite probable that the species described by Scudder as *Tettix femoratus* in "Transactions American Entomological Society" ii, p. 305, will, in the course of time, be restored, or as soon as sufficient material from Maryland, where the type came from, has been carefully studied. This species, of which the

type is lost, undoubtedly belongs to *Neotettix*, but being in doubt about its specific position in my table of species it is simply appended at the end.

*Genera of Tettigæ of North America.*

Anterior femora more or less compressed, carinate above; antennæ 12-14 articles . . . . . **Tettigæ.**

1. (4) Pronotum with the front border anteriorly angulate produced, median carina strongly cristiform, arched longitudinally, median lobule of posterior lateral lobe small; vertex in profile angulate produced . . . . . Gen. 1. **Nomotettix** Morse.
2. (3) Vertex in profile rounded anteriorly, a little advanced in front of the eyes; frontal costa strongly forked; median carina of pronotum distinctly elevated, more or less convexly curved longitudinally, not cristiform . . . . . Gen. 2. **Neotettix** gen. nov.
3. (2) Vertex equal to or narrower than one of the eyes, not produced in front of them, truncate anteriorly . . . . . Gen. 3. **Paratettix** Bol.
4. (1) Pronotum generally not advanced upon the head to the eyes, median lobule of posterior lateral lobe usually well developed; vertex in profile anteriorly angulate, projecting beyond the eyes. . . . . Gen. 4. **Tettix** Charp.

**Neotettix** gen. nov.

Frontal costa strongly forked, median lobule of posterior lateral lobe of pronotum but slightly developed; vertex in profile rounded anteriorly, from dorsal view wider than one of the eyes. Pronotum advanced upon the head to the eyes, median carina elevated, more or less arched longitudinally, dorsal front margin truncate, or scarcely angulate, dorsum transversely tectiform or convexed; hind femora broad, rather stout. Species small, with antennæ consisting of 12-13 articles. Type, *Tettix femoratus* Bolivar (not *Tettix femoratus* Scudder).

Members of this genus recall brachypterous forms of *Paratettix*, to which they seem to have a closer affinity than to either the *Nomotettix* or *Tettix* series. The crown of the head is posteriorly mammillate. Representatives can be distinguished from *Paratettix* by the character of the vertex, which is wider than one of the eyes and is not truncate anteriorly. The *Tettix* group has one or two additional antennal joints, the pronotum is not advanced upon the head to the eyes, while the species comprising the *Nomotettix* group have the pronotum distinctly cristiform, besides the vertex in profile appears angulate anteriorly. Not the least important distinction is the sudden widening of the

frontal costa in *Neotettix*, which, with the other characters we have shown, will separate, with little difficulty, its members from any of the others named.

*Key to Species of Neotettix.*

1. (2) Vertex in dorsal view with front border rounded, a little wider than one of the eyes . . . . . Sp. 1. **N. rotundafrons** sp. n.
2. (1) Vertex in dorsal view with the front border slightly convexed, much wider than one of the eyes.
3. (4) Pronotum strongly rugose, scabrous; frontal costa scarcely protuberant . . . . . Sp. 2. **N. bolteri** sp. n.
4. (3) Pronotum granulate or arenose; frontal costa rather strongly protuberant . . . . . Sp. 3. **N. bolivari** nov. nom.  
Position? Sp. 4. **N. femoratus** Scud.

1. **N. rotundafrons** sp. nov. (Figs. 3, 3a, 3b, 3c, 3d, Pl. VIII).—Slightly smaller than *bolivari*. Body granulate, or to a certain extent very little rugose; vertex not as broad as in *bolivari*, barely wider than one of the eyes, the front border rounded, crown inconspicuously mammillate posteriorly; frontal costa not so roundly protuberant, branches of fork about as widely separated; pronotum truncate in front, posterior process terminating acutely, reaching to or slightly overreaching apex of femora when considering dimorphic forms together; median carina toward the front slightly arched longitudinally, distinctly elevated; dorsulum transversely tectiform, not broad between the shoulders, humeral angles obtuse or sub-straight, lateral carina slightly present. Wings shortened, not quite reaching to, or passing a little beyond the apex of process. Elytra oval, rounded apically; second femur with margins somewhat undate, posterior femora broad, rather stout. Length entire 9 mm.; pronotum 7.5-8 mm.; post-femora 5.5 mm.

Described from two females. Locality Jacksonville, Florida (Bolter). In one specimen the body is reticulated with fuscous, contrasting with yellowish white; dimorphism occurs in the wing-lengths. This species probably nearest resembles *T. femoratus* Scud.

2. **N. bolivari** nov. nom. (Figs. 2, 2a, 2b, 2c, 2d, Pl. VIII).—Body granulate; vertex much broader than one of the eyes, crown mammillate on each side posteriorly, front border slightly convex, rounding abruptly into sides, mid-carina disappearing posteriorly on the crown a little beyond the middle, in profile rounded, advanced but little in front of the eyes, continued unbroken with the frontal costa; frontal costa produced, seen in front strongly forked; pronotum truncate or scarcely angulate anteriorly, advanced upon the head to the eyes, apical process acute, extended backwards to posterior knee, dorsum rather sharply tectiform, median carina distinctly raised, slightly arched longitudinally, humeral angles

obtuse. Elytra elongate. Wings slightly overreaching apex of process in macropterous examples, or sometimes but slightly developed in brachypterous forms. Length entire: ♀ 9-10 mm.; pronotum 7.5-8.5 mm.; post-femora 5.5-6 mm. ♂ 8 mm.; pronotum 7 mm.; post-femora 5 mm.

Locality Opelousas, La., Tifton, Ga., North Carolina (Bolivar). *T. femoratus* Scud., Bolivar Annales de la Soc. Entom. de Belgique, tome xxxi, p. 264, where an excellent description can be found.

Described from seventeen specimens in author's collection (procured by G. R. Pilate).

3. *N. bolteri* sp. nov. (Figs. 1, 1a, 1b, 1c, 1d, 1e, Pl. VIII).—Body small, rather stout, strongly rugose, scabrous; vertex much broader than one of the eyes, front broader, very slightly convex, mid-carina becoming obsolete posteriorly opposite middle of eyes, in profile very little produced in front of the eyes, sub-rotundate, occiput rather protuberant above, mammillate, frontal costa not sinuate, considerably forked; pronotum truncate anteriorly, process not reaching backwards as far as apex of posterior femora, obtuse at end, median carina of pronotum elevated, arched longitudinally, higher between the shoulders, dorsum transversely convex between the shoulders, strongly rugose, with conspicuous excrescences showing in transverse section or viewed in front, antehumeral carinae appearing very slightly, anterior lateral carinae in front short, slightly compressed. Elytra elongate, apex sub-acutely rounded. Wings undeveloped; middle femora with a row of minute swellings between the middle carinae, margins not undate, posterior femora broad cristate, rather short, with external pagina provided with strong diagonal rugose ridges between the middle carinae, between the superior margin and carinae with a curved row of sub-rounded rugose excrescences. Length entire: ♀ 9 mm.; pronotum 7.8 mm.; post-femora 5.5 mm.

Locality Jacksonville, Fla. (Bolter). Described from one specimen.

4. *N. femoratus* Scud.—Vertex but little broader than one of the eyes, barely projecting in advance of them; the front scarcely rounded; pronotum reaching to the tip of the abdomen not including the ovipositor; median carina very prominent, slightly arched; surface arenose. Elytra small, well rounded, with shallow punctures. Wings not longer than the elytra; hind femora very broad and stout. Length 9.5 mm.; pronotum 8 mm.; post-femora 5.2 mm.; elytra 1.6 mm.

Locality Maryland.

*T. femoratus* Scud.—Trans. Am. Ent. Soc. ii, p. 305.

*T. femorata* Scud.—Thomas, Synopsis Acrid. of N. Am. 1873, in Rep't U. S. Geol. Survey, p. 185.

The type was formerly in the collection of the American Entomological Society but was lost, and the species has not since been recovered, so I am told by Mr. Scudder.

#### EXPLANATION OF PLATE VIII.

- |   |                                    |
|---|------------------------------------|
| Fig. 1. <i>Neotettix bolteri</i> Hanc.    | Fig. 2b. Same, front view.         |
| " 1a. Same, dorsal view.                  | " 2c. Enlarged greatly.            |
| " 1b. Same, front view head and pronotum. | " 2d. Head, dorsal view. [Hanc.]   |
| Fig. 1c. Enlarged greatly.                | " 3. <i>Neotettix rotundafrons</i> |
| " 1d. Head, dorsal view.                  | " 3a. Same, dorsal view.           |
| " 1e. Posterior tarsus.                   | " 3b. Greatly enlarged.            |
| " 2. <i>Neotettix bolivari</i> Hanc.      | " 3c. Head, dorsal view.           |
| " 2a. Same, dorsal view.                  | " 3d. Posterior tarsus.            |

#### CONCERNING THE NAMES OF SOME COMMON SPIDERS.

By NATHAN BANKS.

The replacement of modern and familiar specific names by those of an earlier period is one result of the application of the law of priority. Naturalists will doubtless always differ as to how closely this law shall be followed; whether in letter or in spirit. But the few cases to which I shall call attention do not, I think, require any defense. The works of De Geer and the papers of Lucas have always been accepted as of proper authority.

Lucas, in a paper entitled "Description d'une espece nouvelle d'arachnide appartenent au genre *Argyope* de M. Savigny," published in the *Ann. Soc. Entom. France*, 1833, pp. 86-88, describes *Argyope aurantia* from the vicinity of Philadelphia. The description is sufficient to recognize our common species described by Hentz as *Epeira riparia*; and the excellent figure on plate v fully confirms this determination. Walckenaer and Koch have both described this species subsequent to Lucas, so that the synonymy of this species will be:

***Argyope aurantia* Lucas.**

*Epeira cophinaria* Walck.

*Epeira ambitoria* Walck.

*Nephila vestita* Koch.

*Epeira riparia* Hentz.

Lucas, again in 1833, in a paper entitled "Sur plusieurs Arachnides nouvelles appartenent au genre *Atte* de M. de Walckenaer,"

also published in the Ann. Soc. Entom. France, 1833, pp. 476-482, described a *Salticus variegatus* from New Orleans. The description and figure evidently apply to *Phidippus otiosus* Htz., well known from the Southern States. Koch, in Die Arachniden, placed the species in *Phidippus*, and gave a better figure. This species will then be:

**Phidippus variegatus** [Lucas].

*Salticus variegatus* Lucas.

*Phidippus variegatus* Koch.

*Attus otiosus* Hentz.

De Geer, in the seventh volume of his "Memoires pour servir a l'Histoire des Insectes," published in 1778, described several spiders from Pennsylvania.

*Aranea mammeata* De Geer, p. 318, pl. 39, fig. 5, is very plainly *Argiope argentata* Fab., which latter name has the priority. It could hardly have come from Pennsylvania, but is known from the extreme southern parts of our country.

*Aranea rufa* De Geer, p. 319, pl. 39, fig. 6, is evidently a *Dolomedes*, and I think, without doubt, *D. albineus* of Hentz. Koch described it as *Ocyale rufæ* from Pennsylvania and Georgia. So this spider will stand as:

**Dolomedes rufa** [De Geer].

*Aranea rufa* Koch.

*Ocyale rufa* Koch.

*Dolomedes albineus* Hentz.

*Aranea undata* De Geer, p. 320, pl. 39, fig. 8, is our common *Marpitusa familiaris* Hentz. It was described three times by Koch under the genus *Marpissa*; by Blackwall as a *Salticus*, and probably by Walckenaer. This species must now be:

**Marpitusa undata** [De Geer].

*Aranea undata* De Geer.

*Marpissa undata* Koch.

*Marpissa conspersa* Koch.

*Marpissa varia* Koch.

*Attus familiaris* Hentz.

*Salticus sundevalli* Blackwall.

Koch, in vol. xiv, p. 78, of Die Arachniden, published in 1848, described *Mævia tibialis* from Pennsylvania. This is plainly the *Admestina wheeleri* of Peckham, and should be known as:

**Admestina tibialis** [Koch].

*Mævia tibialis* Koch.

*Admestina wheeleri* Peck.

### Some Rare Butterflies for Northwest Missouri.

By FRANK J. HALL, Kansas City, Mo.

The student of geographical distribution as well as the mere collector is always interested to hear of the rare species of a given locality. To know that it is always possible to run down a new species for one's own locality gives an increased interest in careful collecting. I don't believe that this city has been noted for careful naturalists, but we have a wonderfully rich insect fauna here and a handful of eager boys trying to land it in their cabinets. We consider the following species of butterflies among the rarities and invite any body to add to the number.

*Callidryas argante*.—During September, 1895, the orange-colored male of this species was taken from thistle blossom in company with *eubule*, which was exceedingly common that year; the condition of the specimen was excellent. The next year, on September 20th, I took a female specimen of the same species and at the same place; the specimen was a dirty white with darker shades along the middle of both wings, and was not in so good condition as the male. During this season (1897) no specimens of *eubule* were seen.

*Terias mexicana*.—On the 3d of September, 1894, a single male specimen was taken on a street in this city. The specimen was somewhat frayed. No more examples were seen until this year (1897), when a specimen was taken on the blossom of the golden-rod. It was a female, and was in poor condition. The species may be instantly recognized by the sharp anal angle, which gives to the species a tailed appearance; unique among our yellow butterflies.

*Eresia texana*.—On Oct. 24, 1897, I took from the blossom of *Aster* a perfect female specimen of this species. Not a blemish exists, so far as can be seen, hence I am persuaded that the specimen emerged in this locality. For the benefit of the tyro I may say that the species looks very much like *Phyciodes* at first sight, but is darker and has a curved excavation on the outer margin of the fore-wings, and is ornamented with pure white, rectangular spots; on the hind wings occurring in a row of six, quite square and close together, forming a band across the center of the wing.

*Phyciodes carlota*.—Three specimens of the species have been taken here. The first specimen taken May 10, 1896, in a meadow and was alone; the last two were taken in company with *nycteis* from the blossom of cone-flower in September, 1897. Condition of the September specimens very good.

### A SPECIES OF ORTHOPTERA.

[Plate IX represents a species of Orthoptera captured in Philadelphia. We have received the following information in regard to it:]

To the NEWS:—At your request I furnish you with all the information that I possess concerning the capture of the large mantis figured in this number of the NEWS. The specimen was captured on the 16th of last October at Mt. Airy, Philadelphia, by my neighbor, Mr. Joseph Hindermyer, who found the insect resting on the upper part of one of his tomato vines. Mr. H., not being familiar with the insect's harmless nature, was afraid to touch it, but at last managed to secure it in a paste-board box, in which condition it was brought to me. I found on dissecting the abdomen of the insect that it was a female. The eggs, which were oblong and of a whitish color, were contained in a glutinous mass, from which it was hard to separate them.

Although a careful search was made in the vicinity in which the specimen was found, no others were discovered.

Learning later that the native habitat of the insect was China and Japan, I made inquiry among those having nurseries and conservatories in the neighborhood where the specimen was captured, regarding the importation of plants from the above-named countries. At the nursery of Thomas Meehan & Sons—the largest nursery in the vicinity of where the insect was captured—I was informed that they were constantly receiving plants from all parts of the world, so that it is more than likely that the insect was introduced through this channel.

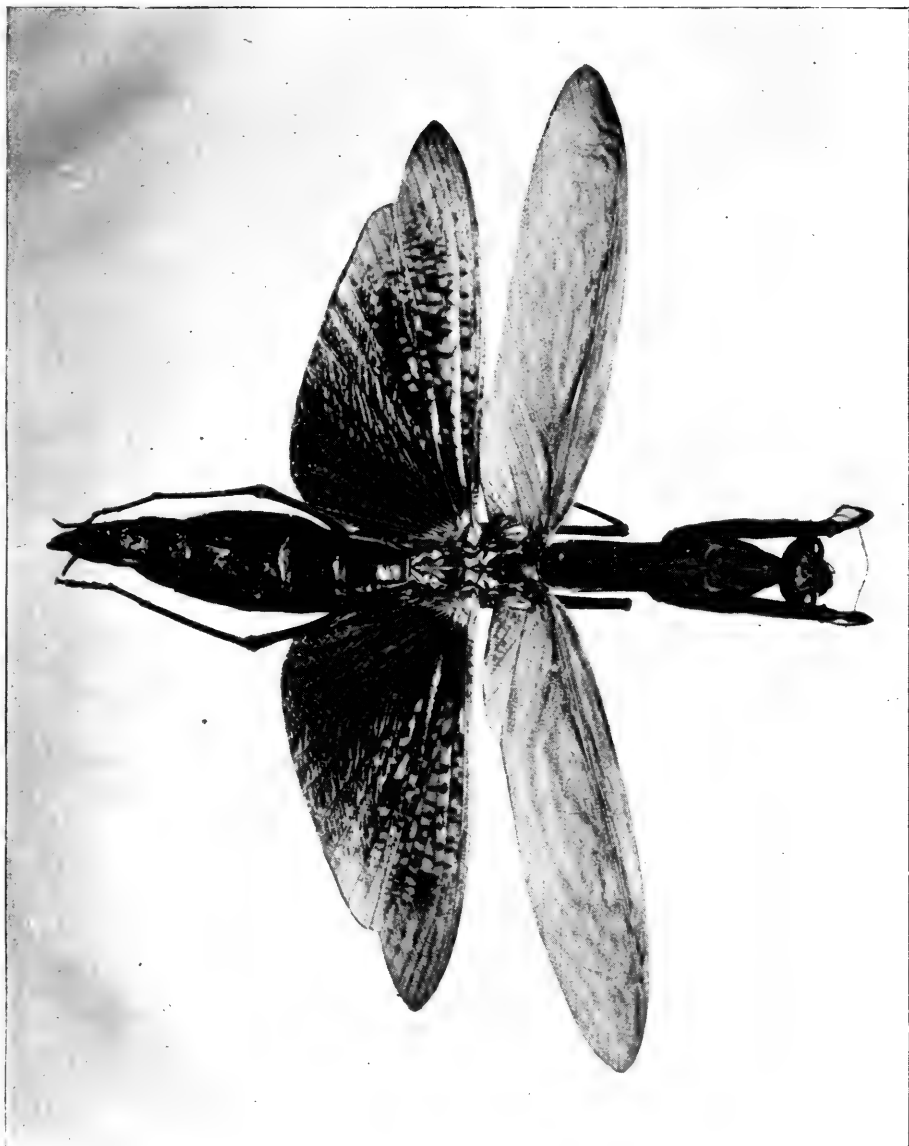
PHILIP LAURENT.

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“I have examined your fine photographs of *Hierodulida*. There is no doubt that it is the *Tenodera sinensis* Saussure, from China and Japan.

“It is certainly very interesting that this large species has been transported to the United States. I suppose the bag of eggs has come over pasted on the leaves or on the branches of a Japanese plant. It is curious that it has supported the change of climate, for the *Tenodera* are only from the hot countries. It is, though, a question if the species will stand your winters. I suppose there must be many other specimens living in the neighborhood of the





TENODERA SINENSIS (Saunders)



place where your specimen has been captured. One ought to let them live, to see if they will multiply. It is a useful insect, destroying the bed plant-insects and not at all noxious to vegetation.

"The same sort of transport was effected from North Australia to the hot-houses of Kew, England. The *Cylindrodes*, sort of *Gryllotalpa*, was found in those hot-houses making great ravages in the large herbaceous plants in which it makes canals and holes.

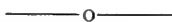
"I received also from Java our *Gryllotalpa vulgaris*, certainly transported to Java in the earth of some pots of plants.

"In the Hymenoptera those transports are frequent only by the ships, *e. g.*, in 1854 our large *Vespa crabro* was caught for the first time in North America, and now several of our wasps have invaded the United States; they were not known at the time of Say who first gave a good account of the United States Hymenoptera.

"I shall have your photographs placed in our museum with a notice explaining what they are.

"If you occupy yourself with Orthoptera I should be indebted to you if you could send me a numerous set of the small Gryllidæ called *Tridactylus* or *Xya*, of which I could not well make out the American species."

Dr. H. de SAUSSURE.



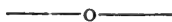
## A NEW SCALE-INSECT OF THE GENUS LECANIUM.

By T. D. A. COCKERELL, Mesilla, N. Mex.

*Lecanium magnollarum* n. sp. ♀.—Scale, 8 mm. long,  $4\frac{1}{2}$  wide,  $2\frac{1}{2}$  high, elongate-oval, dark brown, the subdorsal area irregularly marked with black or blackish; dorsum bluntly keeled; surface granular, little shiny, with low wart-like protuberances at intervals, reminding one of the skin of certain slugs of the genus *Veronicella*; marginal area obscurely radiate by darker lines, but not plicate. Removed from the twig the scale leaves a white oval mark, the secretion abundant in the middle, and forming a very distinct outline where the margin of the scale was, but not indicating the place of the stigmatal incisions; ♀ antennæ 8-jointed, long and slender. Formula 3 (451) (28) 67; 4 about  $\frac{3}{4}$  length of 3, 2 hardly over half as long as 3, 6 very much shorter than 5, 2 with a pair of long bristles near the end, 5 with a long bristle not far from the end, 8 with several bristles; another example has 4 not over  $\frac{2}{3}$  length of 3, 8 short, decidedly shorter than 2, 5 not quite so long as 4; formula 3 (41) 52 (86) 7. Legs long and unusually slender, coxæ and trochanter each with a bristle

near the end, coxæ a little longer than trochanter; tibia at least as long as femur, tarsus about three-fifths length of tibia; claw small; tarsal digitules short, not extending as far as those of claw; claw digitules filiform, but with tolerably large knobs. Dermis chitinous, with scattered round gland-spots, which are most numerous and largest near the margin; anal plates of the same color as the dermis, not darkened; marginal spines small and entire; a short distance from the margin are numerous small tubular glands; newly hatched larva very pale yellowish, with a slightly translucent dorsal line, appearing dark when the insect is on a dark ground; no true markings.

*Hab.*—Numerous on bark of twigs of deciduous *magnolia* in Japanese nursery at San José, Cal., June 12, 1897 (E. M. Ehrhorn). Presumably introduced from Japan. It is a species of *Eulecanium*; from *armeniicum* it differs in the young as well as the adult; the scale is something like *berberidis*, but the antennæ, and especially the legs, are quite different; it is also rather like *genistæ*, but differs in the antennæ. The species has been alluded to in "California Fruit Grower," July 3, 1897, p. 5.



## COLLECTING IN THE TIERRA CALIENTE.

By O. W. BARRETT.

All Mexico is divided into two parts: open barren upland, hot and damp lowland. An imaginary line may be drawn along the Atlantic slope of Central America from north to south and 500 feet above that line is temperate, while 500 feet below is tropical climate. The mesa is not a desert, neither is the tierra caliente a jungle in toto, but they are vastly different regions.

The aspect is more varied in the low country—reedy, swampy areas alternating with primeval forest and chaparral wastes. From May to October the rivers rise and transform the broad grassy plains along their banks into shallow lakes; and the forests become dark, steaming hot-houses. During the Winter months, or dry season, a part of the flora dries up and Nature rests as much as she can.

Can the collector work during the rainy season? By spreading his specimens in the sun every day or two and wrapping the boxes in oil-cloth at night with plenty of naphthaline he can save a good per cent. of the collected material; yet mildew and the accursed ants will get in somehow. Where storage is such a

momentous question in remote regions the tendency is to pack too closely, which favors decay among the larger specimens.

What of the "hosts of insects?" I have traveled for hours up and down the rivers and walked for miles through the forests without seeing more than a very few insects (except the ubiquitous mosquitoes, of course). Along the larger rivers there is a small (?) insect fauna. In the depths of the forest where it is so dark that bats may often be seen flying at noon—collecting is naturally dull. But let the insect-hunter find some dark dell with a deep malarious pool and plenty of flowering shrubs about and he feels more enthusiastic, especially if there is twenty grains of quinine in him; there he may find game. Also, there game may find *him*; numerous species of ants give him samples of various solutions of formic acid; vipers and tree-snakes may give him an opportunity to test his latest snake-poison antidote; seven beautiful species of mosquitoes keep him busy; the tabano [*Tabanus* sp. ?] bites hard; the various chaquistas bore deep; the rotodor makes an itching blood-blister; ticks stick to the death; the garapato begins to dig her den (under the nails): and the moya-cuil (human Oestrid) lays the larvæ which at once proceed to establish themselves in his flesh for at least two weeks as "howling reminders" that "There's a purpose in pain, else it were hellish."

The collector cannot begin work to good advantage before ten o'clock A. M. In the forest the atmosphere is usually very sultry during the middle and latter part of the day. About two o'clock in the morning the air gets cooler; then the stridulation of the Orthoptera becomes less violently obstreperous and, toward sunrise, ceases altogether. Exposure to direct sunlight is said to be very dangerous during the Summer months; not sunstroke, but various forms of malarial fever being the result. The temperature rarely gets above 100° F.; but it is the humidity that tells on the active collector. Rainy days are rare. Two or three inches of rain may fall in as many hours. In the densest forest where the sun never shines (because of the numerous leafy "behucos" which interlace the tree-tops) the collector may continue his search for Hemiptera or Formicidæ while the rain roars harmlessly above him. The air retains a marked hydrogenous odor for several hours after a heavy rain; the humidity penetrates

all boxes and un-paraffined corks, and thus mold is sure to grow wherever there is "dead" air. Indeed, I doubt whether tin-cases could be used with any success for the storage of specimens. Leather leggings give protection from palm-thorns and snake-teeth, but when a few ants crawl beneath them—well, they must come off at once. It is almost impossible to cross a moving army of ants without suffering thereby.

Water is usually all right if it runs. Fruits are dangerous unless well cooked. An intolerable itching beginning at the ankles and spreading over the body lasts for a few weeks after entering "la tierra caliente;" unless the condition of the blood is very good it amounts to much more than a "heat rash." Bilious, intestinal, and malarial diseases are the most common. The dangers from poisonous plants and insects, "tigres" and "Indios" may be overestimated, but the collector would be foolhardy to go about without his revolver.

Although the country has many faults there are many things about it to gladden the heart of the would-be entomologist. There the brilliant *Morpho peleides* flits about the tree-tops, the *Ithomias* hover on gaudy wings in the sunshiny vistas, and perchance a royal *Caligo* floats across the forest path and folds its purple vesture upon the trunk of some rough-barked tree before the very eyes of the collector—safe in its mimicry. Huge flies, mighty Cerambycidae; beautiful Odonata, like the lazy *Megaloprepus caerulescens*, and ferocious Hymenoptera; they are there, and it is a wonderful thing to live there with them and get acquainted with them all. It is truly a great thing to live in the tierra caliente, in the "rich faunal region" where one can see the species actually alive and in their proper environment, fresh and [occasionally] entire and "at their best." However, it is a great thing to see the same specimens (*i. e.*, the perfect ones) arranged over the white paper of a cabinet; to have a bed to sleep upon and something to eat; to live without fever and within reach of a physician.

Idealization is an excellent thing in its place—in magazine articles, for example; but it wilts in the desert places and cannot thrive in a tropical forest.

## 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.]

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PHILADELPHIA, PA., JUNE, 1898.

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### PACKING OF INSECTS.

We think that it will be necessary to publish in the NEWS an article on packing insects for shipment by mail or express for the benefit of professors of entomology, experiment station entomologists, beginners and others. We receive many packages of insects here and have a good opportunity of finding out how little some of our good friends know about the subject. Occasionally a box arrives by mail without any covering or packing whatever, and then we fasten a handle to it and give it to the baby for a rattle. The sender in this case certainly has faith. Next comes a box with packing on two sides. The fellow that sends this kind reminds us of the ostrich who sticks his head in the sand and thinks he can't be seen. Another variety is the kind with sufficient space between the outer and inner box, but the packing has evidently been hammered in with mallet and chisel. The fellow that sends this kind is evidently not a physicist. The commonest mistake of all is to have much waste space in the inner box. Don't send a few specimens in a box that will hold fifty, as the smaller the box, as a rule, the greater its safety. There are really few people in America that understand the fine art of properly packing insects for shipment. We will publish an article on this subject in a subsequent issue.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

A REPLY to Mr. W. R. Howard's query.—The length of the egg-stage of *T. luna* and other moths. In looking over my notes of life-histories I find the following, which may interest some of your readers :

	Length of egg-stage.		
<i>promethea</i> . . . . .	12	days.	
<i>luna</i> . . . . .	12	"	
<i>polyphemus</i> . . . . .	12	"	
<i>cecropia</i> . . . . .	13	"	
<i>imperialis</i> . . . . .	13	"	
<i>regalis</i> . . . . .	16	"	
<i>rubicunda</i> . . . . .	13	"	
<i>stigma</i> . . . . .	15	"	
<i>A. torrefacta</i> . . . . .	13	"	
<i>A. biguttata</i> . . . . .	6	"	
<i>A. drexellii</i> . . . . .	8	"	
<i>N. gibbosa</i> . . . . .	6	"	
<i>A. virgo</i> . . . . .	12	"	
<i>A. nais</i> . . . . .	11	"	
	1st brood	2d brood	
<i>S. excæcatus</i> . . . . .	8	10	days.
<i>S. astylus</i> . . . . .	11	8	"
<i>S. myops</i> . . . . .	15		"
<i>D. hylæus</i> . . . . .	8		"
	1st brood	2d brood	3d brood
<i>E. myron</i> . . . . .	7	9	6 days.
<i>T. abbottii</i> . . . . .	6		"
<i>H. affinis</i> . . . . .	7		"
<i>E. harrisii</i> . . . . .	11		"
<i>D. lineata</i> . . . . .	6		"
<i>S. kalmiæ</i> . . . . .	36		"
<i>D. undulosa</i> . . . . .	8		"
<i>C. amyntor</i> . . . . .	6		"
<i>C. juglandis</i> . . . . .	8	7	"

Different broods have varied. I also find that Miss Eliot and I have found *luna* on white birch more than on any other tree.

Mr. Howard will find that larvæ need no "trees" at all. If he will keep them in tightly closed tin boxes, with twigs and leaves, they will thrive well. I have described this process fully in an article written for teachers and published in "Primary Education" for March, 1898. In Massachusetts I think *asterias* chrysalids would be dear at five cents. In New Hampshire and Vermont I am sure they would.—CAROLINE G. SOULE, Brookline, Mass.



FOURTH INTERNATIONAL CONGRESS OF ZOOLOGY.—The Reception Committee has issued a circular containing particulars with regard to lodgings and other accommodation at Cambridge during the meeting in August next, and giving other information as to the railway fares from various parts of the Continent, and other arrangements for the Congress.

The circular is accompanied by a reply-form, to be filled up and returned to the Secretaries by any member of the Congress who wishes rooms to be taken for him.

These circulars have been sent to all who have already informed the Reception Committee that they hope to be present at the meeting, and will be sent to other Zoologists who apply to the Secretaries of the Reception Committee, The Museums, Cambridge, England.

A BEETLE REMOVED FROM A LADY'S EAR.—May 19, 1897, Dr. A. S. Daggett, of Pittsburg, Pa., removed from the external ear of a German lady a beetle nearly one-half an inch long; it was in the auditory canal, close to the drum, and it was enclosed in a dense plug of wax. The drum was ulcerated, with considerable surrounding congestion. The lady did not know that she had an insect in her ear. The specimen, which was referred to me, was a mere shell, the soft parts having been dissolved; it was, however, perfectly recognizable, and it agreed with the European species *Phyllopertha horticola* Linn. (Scarabæidæ). The determination was made by direct comparison of specimens from Switzerland. The species, so far as I know, does not occur in this country. The lady has not been in Europe since August, 1893, consequently this large beetle must have been in her ear at least three years and nine months; perhaps much longer.—HERBERT H. SMITH.

INTERESTING CAPTURES.—The morning of Feb. 10, 1898, I found here, near the bed of a small mountain stream, in a grassy, damp situation on the lower surface of a stone a specimen of the curious blind Tenebrionid *Alaudes singularis* Horn. The beetle was in the society of a small black ant with black abdomen and reddish brown thorax and head. The ants and the *Alaudes* were absolutely motionless, benumbed by the rather cold morning air, and it was only after some minutes of scrupulous searching that I discovered the minute beetle adhering to the lower surface of the stone. It feigned death even in the cyanide bottle quite a long time for his small size. Under the same stone was a specimen of *Anchomma costatum* Lec.

During the month of January I have taken on the banks of the above-described streamlet on meat hidden by me under stones, chips and leaves about two dozens of *Cychnus mimus* Horn. More than the half of the specimens were females.—A. FENYES, M.D., Pasadena, Cal.

NOTES ON NEOMINOIS RIDINGSII AND DIONYSIUS.—*Dionysius* exists at just the same altitude as *ridingsii*, so the differences are not the effect of altitude. *Ridingsii* is very abundant everywhere around the city of Denver; even in the city in grassy places. This elevation is from five to six thousand feet; it also occurs up to eight thousand feet, and probably higher.

Glenwood Springs, Garfield County, Colorado, where *dionysius* is abundant is just the same elevation as Denver with this difference: Denver is a gradual elevation of the plains, while Glenwood is a depression in the mountains worn by the rapid rivers. *Ridingsii* is found in the short grass, *dionysius* on sandy and stony desert tracts, always sitting on the hot sand of the trails, and, when started, flying on the bare rocks either down to the riverside or the side of the cliffs above for a few minutes, then back to the hot dusty tracts. Both species occur at Salida, their habits and habitat still keeping distinct. This place is over seven thousand feet in altitude. Here I have taken *dionysius* in a volcanic patch, barren and desolate, and *ridingsii* on the grassy meadow watered by the little Arkansas River.—DAVID BRUCE.

"INSECT GRAFTING.—A discovery which may lead to important results has been made by Mr. Henry E. Crampton, Instructor in Biology in Columbia University. Mr. Crampton has been studying the works of a German scientist named Born, and has made a practical test of some of his theories, with extraordinary results. He has experimented on the embryo of the butterfly at the period of its existence when it lies inactive in its cocoon, after its life as a caterpillar. Every one has seen the grub spinning its delicate nest on a leaf or twig, and entering it, as into a grave, remaining there eating nothing and apparently dead for a few weeks, and then emerging from it a beautiful creature with wings. Mr. Crampton collected a number of these cocoons and operated on their insensible occupants. He found that he could cut the comatose creatures in half and join the half of one to the half of another without affecting the life of either. The chrysalids so joined accomplished the usual period of their retirement and emerged from it as two butterflies, with wonderful combinations of colors and organisms, apparently none the worse for the operation which had been performed. Prof. Smith, of the New Jersey Experiment Station, who has made the facts of Mr. Crampton's work known, believes that the discovery will constitute an era in biological science. The principle has an endless variety in possible forms of application and may eventually reach to higher orders of life. The possibility of continuing two natures in a single living organism being once demonstrated, scientists will perceive how far-reaching may be the effects of such experiments."—*Christian Herald*.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, or containing descriptions of new genera, will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

4. The Canadian Entomologist, London, Ont., May, '98.—5. Psyche, Cambridge, Mass., May, '98.—8. The Entomologist's Monthly Magazine, London, May, '98.—9. The Entomologist, London, May, '98.—14. Pro-

ceedings of the Zoological Society of London, '97, part iv, April 1. '98.—**21.** The Entomologist's Record, London, April 15, '98.—**22.** Zoologischer Anzeiger, Leipsic, April 4, '98.—**36.** Transactions, Entomological Society of London, '98, pt. i, April 20.—**41.** Entomologische Nachrichten, xxiv, 5, Berlin, March, '98.—**64.** Annalen d. K. K. Naturhistorischen Hofmuseums, xii, Vienna, '97.—**72.** Transactions, Kansas Academy of Science xv, Topeka, '98.—**73.** Archives de Zoologie Experimentale et Generale (3), v, 3, Paris, '97.—**74.** Naturwissenschaftliche Wochenschrift, Berlin, April 24, '98.—**75.** Twenty-eighth Annual Report, Entomological Society of Ontario, Toronto, '98.

**The General Subject.**—A TEXT-BOOK OF ENTOMOLOGY including the Anatomy, Physiology, Embryology and Metamorphoses of Insects for use in Agricultural and Technical Schools and Colleges as well as by the working Entomologist. By Alpheus S. Packard, M.D., Ph.D, Professor of Zoölogy and Geology, Brown University, Author of "Guide to Study of Insects," "Entomology for Beginners," etc. New York. The Macmillan Company, 1898. 8vo, pp. xvii, 729; 654 figs. Received from the publishers through John Wanamaker. Price \$4.50.

For some years past we have been expecting a new edition of Prof. Packard's "Guide," but the present work is something entirely different. Nothing like it, in its scope, has appeared in English since Newport's article on Insecta in 1839, while in other languages the only comparable works, during the same period, have been Graber's "Insecten," 1877, and Kolbe's "Einführung," 1893. No one or two men could, out of their own experience, produce such a work, so that we are here given a summary of the labors of several generations of anatomists, physiologists and embryologists upon insects, and treated from the standpoint of morphology, of comparative anatomy and physiology. The first part, entitled "Morphology and Physiology," deals with the position of Insects in the Animal Kingdom (pp. 1-26), the External (pp. 27-210) and the Internal (pp. 211-514) Anatomy. The Second Part, on Embryology (pp. 515-592), is stated to be based on Korschelt and Heider's Lehrbuch. The Third Part (pp. 593-708) treats of the Metamorphoses. At the end of each section dealing with some special structure or function, following the model set by the German text-books, a bibliography is given with this improvement—that the entries are arranged chronologically. Needless to say these add immensely to the value of the book. The illustrations, whose wealth is indicated above, show signs of the improvement gradually appearing in English text-books, relieving them of the charge of inferiority compared with those in German. Being, from the nature of the case, chiefly a summary and a compilation, the value of the work must depend on the thoroughness with which this has been done. Few are in a position to judge of the degree of this thoroughness in the various groups, and we cannot therefore express an opinion on this point. Specialists will perhaps detect some omissions as, for example, any reference *in the text* to Ris' researches on the proventriculus of Odonata, or the statement, re-

produced from Wheeler (p. 355), that the embryonic number of Malpighian tubules in Ephemera and Odonata has not been ascertained. In the latter group the number is three, as first stated in the News for June, 1895, p. 181, and subsequently expressly confirmed by Heymons, who also gives two as the number in embryonic may-flies. Yet these may be hypercriticisms, and the Text-Book is indispensable to scientific entomologists, forming a welcome complement to Dr. Sharps' "Insects" in the Cambridge Natural History.—P. P. CALVERT.

Bethune, C. J. S. Sketch of James Fletcher, portrait, 75.—Howard, L. O. On the entomological results of the exploration of the British West India islands by the British Association for the Advancement of Science, 75.—Knutth, P. How do flowers attract insects? Botanisches Centralblatt 1898, No. 15, Cassel.—Moffat, J. A. Protective resemblances, 75.—Obituary, Johnson Pettit, 4.—Poulton, E. B. Theories of mimicry as illustrated by African butterflies; Protective mimicry as evidence for the validity of the theory of natural selection, Report of the British Association for the Advancement of Science, Toronto meeting of 1897, London, '98, and 21.—Robertson, C. Flowers and insects, xviii. Botanical Gazette, Chicago, April, '98.—Strickland, T. A. G. Further notes on the direct photographic enlargement of entomological specimens, with description of a new apparatus, 8.

**Economic Entomology.**—Anon. The pernicious *Aspidiotus*, Revue Scientifique, Paris, April 23, '98.—Barrows. The present status of the San José scale in Michigan, 75.—Bethune, C. J. S. Some household insects, figs.; Notes on the season of 1897, figs., 75.—Britton, W. E. Insect notes of the season, Twenty-first Annual Report, Connecticut Agric. Exper. Station for 1897. Part iv. New Haven, '98.—Chretien, P. Natural history of *Ennychia fascialis* Hb., Naturaliste, Paris, April 15, '98.—Dearness, J. Annual address of the President: The insects of the year, figs., 75.—Discussion on temperature experiments as affecting received ideas on the hibernation of injurious insects, 75.—Fletcher, J. The San José scale, figs., 75.—Harrington, W. H. Notes on the insects of the year 1897, figs., 75.—Hopkins, A. D. The periodical Cicada in West Virginia, figs., map, 4 pls. Bulletin 50, W. Va. Agric. Exper. Station, Morgantown, W. Va., Jan., '98.—Huard, V. A. The Hemiptera in the Canadian Parliament; The plague of caterpillars on the Saguenay, Naturaliste Canadien, Chicoutimi (Quebec), April, '98.—Hunter, S. J. Notes on injurious insects, 72.—Kenyon, F. C. Abstract of recent publications, Experiment Station Record ix, 9, Washington, 1898.—Kirkland, A. H. The work against the gypsy moth, 1897, 75.—Krüger, F. The San José scale question. figs., 74.—Lintner, J. A. Twelfth Report on the injurious and other insects of the State of New York for the year 1896, 9 text figs., 15 pls., Fiftieth Report on the New York State Museum, Albany, '97. Rec'd May 7, '98.—Lowe, V. H. Inspection of nurseries and treatment of infested nursery stock, Bulletin 136, New York Agricultural Experiment Station, Ge-

neva, N. Y., Dec., '97; Plant lice: descriptions, enemies and treatment, 3 pls., Bulletin 139 of the same.—Marlatt, C. L. Notes on insecticides, **75**.—Matzdorff, C. The San José scale, 1 pl., Zeitschrift für Pflanzenkrankheiten, viii, 1. Stuttgart, April 2, '98.—[Description of a patented insect-catching tree girdle in the same journal.]—Moffat, J. A. The value of systematic entomological observations, **75**.—Nuttall, G. H. F. In explanation of the rôle which piercing insects play in the distribution of infectious diseases, Centralblatt für Bakteriologie, Jena, April 16, '98.—Stedman, J. M. A new orchard pest, the fringed-wing apple-bud moth (*Nothris? maligemmella*), figs.\* **4**.

**Myriopoda**.—Dubosq, O. On the sensory nervous system of Tracheates (Orthoptera, Chilopoda), 1 pl., **73**.

**Arachnida**.—Pocock, R. I. The nature and habits of Pliny's *Solpuga*, figs., Nature, London, April 28, '98.—Simon, E. On the spiders of the island of St. Vincent, part iii,\* **14**.

**Orthoptera**.—Bordas, L. The salivary glands of Pseudo-neuroptera and Orthoptera (concl.), 3 pls., **73**.—Brancsik, C. Series of new Orthoptera, 3 pls., Jahreshft des naturwissenschaftlichen Vereines des Trencsiner Comitates, Trencsen, '98.—Brindley, H. H. On the regeneration of the legs in the Blattidæ, **14**.—Duboscq, O. See Myriopoda.—Fyles, T. W. The locusts of the Bible, **75**.—Lochard, W. A study of the Gryllidæ (Crickets), figs., **75**.—Lugger, O. Third Annual Report of the Entomologist of the State Experiment Station of the University of Minnesota to the Governor for the year 1897. St. Paul, '98. 297 pp., 187 figs. This is a monograph of the Orthoptera of Minnesota.—Scudder, S. H. The Orthopteran group Scudderidæ,\* 1 pl., Proceedings of the American Academy of Arts and Sciences, xxxiii, 15, April, '98.—Walker, E. M. Notes on some Ontario Acrididæ, **4**.

**Neuroptera**.—Bordas, L. See Orthoptera.—Currie, R. P. New species of North American Myrmelionidæ, ii,\* **4**.—Schenkling-Prévôt. The life of Termites (cont.) Insekten-Börse, xv, 17, etc. Leipzig, April, '98.

**Hemiptera**.—Bergroth, E. Diagnoses of some new Aradidæ, **8**.—Carpenter, G. H. *Trochopus* and *Rhagovelia*, **8**.—Champion, G. C. Notes on American and other Tingitidæ, with descriptions of two new genera and four species,\* 2 pls., **36**.—Cockerell, T. D. A. The Cottonwood snow-scale of Nebraska,\* **4**; A Mexican wax-scale in England, **9**.—Gerstaecker, A. On some noteworthy Fulgorinæ of the Greifswald zoological collection, Mittheilungen, naturwissenschaftlichen Verein für Neu-Vorpommern und Rügen in Greifswald, 1896.—Gillette, C. P. American leaf-hoppers of the subfamily Typhlocybinae,\* figs., Proceedings, United States National Museum, xx, No. 1138, Washington, '98.—Handlirsch, A. Monograph of the Phymatidæ,\* 6 pls., 35 text-figs., **64**.—Hopkins, A. D. See Economic Entomology.—Kirkaldy, G. W. Notes on aquatic Rhynchota—No. 2, **9**.

**Coleoptera**.—Georgevitsch, J. The segmental glands of *Ocypus*,

figs., **22**.—Knaus, W. Additions to the list of Kansas Coleoptera, **72**.—Reitter, E. Key to the European species of *Pissodes*, **41**.

**Diptera**.—Eaton, E. A. Supplement to "A Synopsis of British Psychodidæ," **8**.—Harris, W. H. Note on the teeth of Diptera, figs., 1 pl., Report and Transactions Cardiff Naturalists' Society, xxix, '97.—Hough, G. de N. The Muscidæ collected by Dr. A. Donaldson Smith in Somaliland, Eastern Africa, figs., Proceedings, Academy of Natural Sciences, Philadelphia, '98, pt. i, May.—Johnson, C. W. Diptera collected by Dr. A. Donaldson Smith in Somaliland, Eastern Africa, figs., in the same.—v. Linden, M. On the discovery of *Puliciphora lucifera*, **74**.—Townsend, C. H. T. Diptera from the Mesilla Valley of the Rio Grande in New Mexico, ii, **5**.—Williston, S. W. Notes and descriptions of Mydaidæ,\* **72**.

**Lepidoptera**.—Bacot, A. The British Liparid moths (cont.), **21**.—Bird, H. Notes on the Noctuid genus *Hydroecia*, **4**.—Fyles, T. W. Notes on the season of 1897, figs, **75**.—Gibson, A. A few notes on the season of 1897, fig., **75**.—Godman, F. DuC. and Salvin, O. Descriptions of new species of American Rhopalocera, **36**.—Grant, C. E. Notes on the season of 1897, figs., **75**.—Grote, A. R. The wing and larval characters of the Emperor moths, 4 figs. Proceedings, South London Entomological and Natural History Society, '97.—Howard, L. O. Additional observations on the parasites of *Orgyia leucostigma*, **75**.—Hulst, G. D. Descriptions of new genera and species of the Geometrina of North America,\* **4**.—Lyman, H. H. On butterfly books, **75**.—Moffat, J. A. *Catocala illecta* Walk., **4**; Notes on the season of 1897, figs., **75**.—Ottolengui, R. Metallic species of *Basilodes* and new species of allied genera, 1 pl.,\* **4**.—Poulton, E. B. See General Subject (two papers).—Reuter, E. On a new classification of the Rhopalocera (cont.), **21**.—Scudder, S. H. A study of the caterpillars of North American swallowtail butterflies, i (altered from his Butterflies of the East. U. S. and Can.), 1 pl., **5**.—Stedman, J. M. See Economic Entomology.—Tutt, J. W. Some results of recent experiments in hybridising *Tephrosia bistortata* and *T. crepuscularia*, **36**.

**Hymenoptera**.—Bignell, G. C. Oak galls, **8**.—Dyar, H. G. Description of an unusual saw-fly larva belonging to the Xyelinae,\* **5**.—v. Ihering, H. The foundation of new colonies and fungus-gardens by *Atta sexdens*, fig., **22**.—Janet, C. On a cavity of the integument of the Myrmicinae, serving to draw out a product of secretion, figs. Comptes Rendus, l'Academie des Sciences, Paris, April 18, '98.—Konow, F. W. The exotic Cephini, supplementary to my work on the palæarctic Cephini, 1896, **41**; Systematic and critical revision of the saw-fly tribe Lydini, ii, **64**.

## Doings of Societies.

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A meeting of the American Entomological Society was held April 28th, Dr. P. P. Calvert, vice-president, in the chair. Letters were read, acknowledging election to corresponding membership, from James Fletcher, Ottawa, Canada; A. Handlirsch, Vienna, Austria; F. F. Kohl, Vienna, Austria. A letter from Dr. Henri de Saussure was read in relation to the finding of *Tenodera sinensis* at Philadelphia. Mr. Charles Liebeck reported finding one specimen of *Chlœnius purpuricollis*, and also a species of *Bledius* in the yard at his home. Dr. Skinner called attention to the interesting and valuable list of Colorado Lepidoptera recently published by Prof. Gillette in the Bulletin 43 of the Colorado Agricultural Experiment Station. The list is valuable on account of the exact localities and dates of capture being given. Dr. Calvert exhibited some alcoholic specimens of Odonata from Lower California which he had taken to Cambridge, Mass., for comparative study—and these studies showed that in some instances species as listed by authors had been improperly placed as to genera. The differential characters in the wing and leg structures were pointed out in the genera *Dythemis*, *Brechmorhoga*, *Paltothemis* and *Macrothemis*. The same speaker also made some remarks on the character of the new Text Book of Entomology by Dr. Packard. The following persons were elected Corresponding Members of the Society: Prof. August Forel, Zurich, Switzerland; Dr. Gustav Mayr, Vienna, Austria; Sir John Lubbock, Kent, England; Prof. J. H. Comstock, Ithaca, N. Y.

Dr. HENRY SKINNER, *Secretary*.

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At the meeting of the Feldman Collecting Social on May 10th a letter was read from Dr. H. G. Griffith dated Phoenix, Ariz., May 1, 1898, in which the collecting experiences of the writer in that region were described. The dryness of the past season and consequential scarcity of certain species were dwelt on, as well as certain social conditions of the region. A list of a number of his captures of Coleoptera was included.

Prof. Smith showed plaster casts of the burrows of insects and spiders. The casts are made by pouring liquid plaster of Paris into the burrows which is allowed to harden and then carefully

dug out. In *Colletes compacta* the burrows contain but one cell and extend 18 inches into the ground. *Augochlora humeralis* builds a burrow extending in one instance over 60 inches. At various places along the burrow offshoots or branches are put out which contain the cells, which are lined with clay and then stored with food. The present cells are evidently old and contained hibernating bees in many instances.

Mr. H. Wenzel showed specimens of *Pyractomena lucifer*, and spoke of the light emitted by it, which exists in the pupa as well as in the larval state.

The characteristics and food habits of *Pyractomena* were discussed by Messrs. H. Wenzel, Smith and Aaron. The larvæ are carnivorous and probably feed on snails.

Mr. Johnson exhibited specimens of *Xylophaga abdominalis* bred from the larva which were found under the bark of decaying pine at Riverton, N. J. The specimens differ from Texan examples in the extent of red on the abdomen of the female. The larva of *Tabanus atratus* was also shown, the larva and pupa of a *Tipulid*, and a larva of *Stratiomyia*.

Mr. Aaron asked for information regarding the coleopterous larva which bores into chestnut lumber, whose perforations are similar to shot holes.

Prof. Smith referred to a recent paper on the subject by Prof. Hopkins, of the West Virginia Agricultural College, and said the larva was probably *Lymexylon*.

Mr. Aaron also inquired of the members regarding the longevity of insects and mentioned a larva of *Tenebriodes mauritanica* which he has had since October, 1897, and has apparently not grown whatever.

Prof. Smith mentioned the record of a species of *Pissodes* which lived for two seasons and oviposited in two successive years and is still living. The wainscoting of a house in New Brunswick, N. J., has been infested by a beetle larva for at least three years.

Mr. Aaron spoke on the longevity of cerambycid larva and cited Packard as authority for the record of larvæ living for 24 and 40 years. He questioned this record, and stated that there was a likelihood that the larva were more recently introduced into wood than had been supposed.

The same speaker remarked on the structure of the mud dauber wasp, *Sceliphron cementarius*, after emerging from the pupa.



The abdomen and thorax are connected by thin membranes, probably to brace the immature body of the wasp.

Prof. Smith suggested these membranes are remains of pupal skin.

Mr. Aaron said another pupal skin is present in addition to this membrane.

A vote of thanks was extended to Mr. G. B. King, of Lawrence, Mass., for his donation of microscopic slides.

Mr. H. Wenzel and Mr. Laurent were appointed a Committee on Field Meeting July 4, 1898.

WM. J. FOX, *Secretary*.

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Regular meeting of the Newark Entomological Society was held April 10th at Turn Hall at 4 P. M. with Vice-president Brehme in the chair. It was decided to hold the next special meeting at the laboratory of Prof. Smith at New Brunswick. Mr. Rienecker presented a handsome collecting box, in the shape of a book to the Society, to be given to the member who brings the most candidates for membership from Jan. 1, 1898, to Jan. 1, 1899.

Mr. Weidt exhibited a larva of a species of *Sesia* which he is breeding that had bored into the cork stopper of a small bottle in which it was kept since April 9th and is still alive at this writing, April 26th.

Each of the members exhibited a series of the genus *Arctia* which was well represented, particularly in that of Mr. Angelman.

Among the specimens brought by Mr. Erb was a *Plusia formosa* taken in the vicinity of New York city.

Mr. Kircher exhibited a pair of *Hyperchiria io* taken from the pupal cage *in coitu*, which he had mounted and spread as he found them.

Mr. Weidt remarked that he found a pair of *Lagoa crispata* under similar circumstances Nov. 16, 1897; the weather was very cold and the pupæ were kept in the attic.

The next regular meeting will be held at Hemlock Falls, Orange Mountains, May 8th, which will be the first field meeting of the season.

No further business the meeting adjourned.

A. J. WEIDT, *Secretary*.

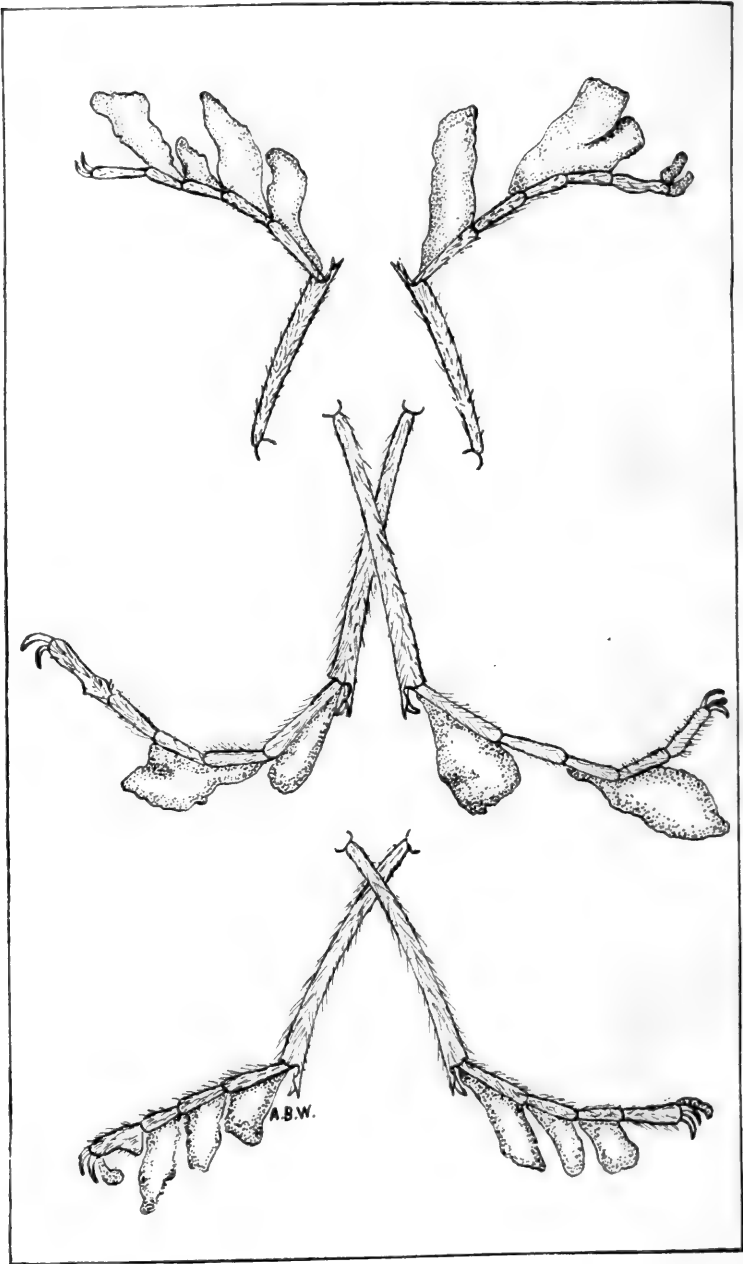
**OBITUARY.**

Professor DAVID SIMONS KELLICOTT was born at Hastings Centre, Oswego County, N. Y., January 28, 1842, and died at his home in Columbus, Ohio, April 13, 1898. In his boyhood his frail constitution and delicate health required him to spend much of his time out of doors, and it is to this, no doubt that in part at least, his love for nature may be traced. He graduated from Syracuse University with the degree of B. Sc., while the institution was yet known as Genesee College, teaching one year in southern Ohio, prior to his graduation. After graduating he taught one year in Kingston Normal School, Pennsylvania, after which he was connected for seventeen years with the State University at Buffalo, N. Y., being Dean of the College of Pharmacy, and also Professor of Botany and Microscopy. He came to the Ohio State University in 1888, where, for ten years, he has occupied the chair of Zoology and Entomology. At the time of his death he was General Secretary of the American Association for the Advancement of Science, President of the American Microscopical Society and Treasurer of the Ohio Academy of Science. He had served as President of the Buffalo, N. Y., Academy of Science and of the Ohio Academy of Science.

Animal Parasites of Fishes and the Rotifera, from time to time, claimed considerable of Professor Kellicott's attention, but his entomological work won for him the admiration of the entomologists of America. Patient, conscientious, and utterly devoid of selfishness, he was one of the most kind and lovable men the writer has ever met. Faithful and just with his colleagues and the idol of his pupils, seeking patiently and industriously after the truth, he won esteem while living, and, in his death, he has left numberless friends to mourn his loss. If there was ever a man who deserved the reward—"Well done thou good and faithful servant," that man was David S. Kellicott; and the fruits of his labors on earth will stand as an enduring monument to his faithfulness among his fellow-men.—F. M. WEBSTER.

Especially will the American students of the Odonata feel the loss of Prof. Kellicott. To him is due the recognition of the distinctness of *Enallagma geminata* Kell. from *E. divagans* Selys, the description of *E. fischeri* Kell., and—of greater value—a very considerable number of observations on the habits and conditions of life chiefly of the species recorded in his "Catalogue of the Odonata of Ohio," published in the Journal of the Cincinnati Society of Natural History for 1895, 1896 and 1897.—PHILIP P. CALVERT.





AN INSECT MONSTROSITY.

# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX.

SEPTEMBER, 1898.

No. 7.

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### AN INSECT MONSTROSITY.

By A. B. WOLCOTT.

The figures given this month (Pl. X) are drawn from a specimen of *Epicauta cinerea* Forst taken at Heyworth, Ill., early in August and now in my collection at the Illinois Wesleyan University.

This beetle was crawling on a board-walk when first observed and its gait was extremely awkward and grotesque. The irregular masses shown extending from the joints of tarsi are thickened considerably externally, somewhat granular and fully chitinized; they are of a light gray color. Where these masses extend from one joint to another they cause that joint to be rigid; several of the tarsal joints and claws are also deformed. With the exception of the tarsi the specimen is normal. The figures will give a better idea of this monstrosity than many words; the different members are placed in the same position as they occupied in life, those at the top of the plate being the anterior feet.

Mr. LANCASTER THOMAS will make further onslaughts on the Lepidoptera of Cranberry, N. C. *Argynnis diana* is an old friend of his, and he always manages to get some fine examples.

### A SETTING-BLOCK FOR LEPIDOPTERA.

By HERMANN SCHWARZ, St. Louis, Mo.

Being aware of the difficulty which presents itself to almost every collector of Lepidoptera in finding a suitable block or board on which to spread his specimens, I herewith take pleasure in

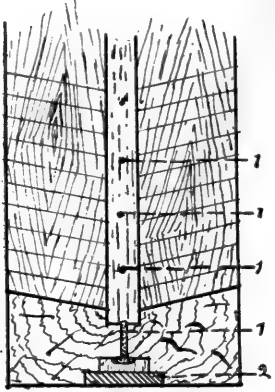


Fig. I.

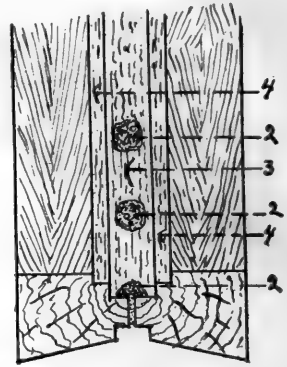


Fig. II.

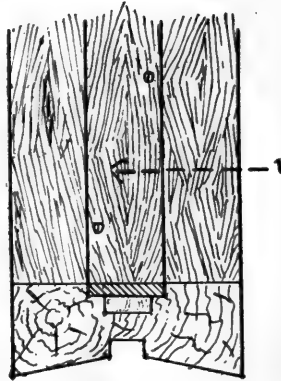


Fig. III.

H. Schwarz.

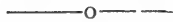
presenting a sketch of a block which I have found to answer the purpose to perfection.

Fig. I shows a cross-section and top of the block. As will

be readily seen, the groove for the reception of the bodies of the specimens forms the center; 1 shows the gimlet hole through which the pin passes; 2 is end of strip of wood to be placed at the bottom, as can be better seen in Fig. III, 1.

Fig. II represents the block with bottom open, showing the anatomy as it were. A groove a bit wider than the top one is cut directly underneath it, 3. Another groove yet wider than the last is cut as shown at 4; 2 are very thin pieces of cork about  $\frac{1}{8}$  inch. thick glued over the gimlet holes.

Fig. III shows the block with bottom closed, that is to say with strip of wood, 1, placed in position. The block should be made of soft wood, such as poplar or basswood. By drawing parallel lines about  $\frac{1}{4}$  inch. apart across the block, as shown in Fig. I, the wings can be set even with greater exactness.



## LIFE-HISTORY OF PAMPHILA ETHLIUS Cr.

By HARRISON G. DYAR.

Mrs. Slosson called my attention to some Hesperid larvæ that were eating the leaves of *Canna* planted in the grounds of the Hotel Royal Palm at Miami, Fla. They were numerous, and at some points had considerably injured the appearance of the plants. We concluded that they must be *P. ethlius*, which proved to be the case. Mrs. Slosson asked me to describe them, and, with the help of Dr. Prime, I found all the stages, thus avoiding the necessity of slow breeding. The larva is the most transparent that I have seen.

*Egg*.—Singly, scattered on either side of the leaf; almost perfectly hemispherical, like a *Notodontian*; white, opaque, not shining, with a delicate under tint of green, which gives place later to reddish. Surface minutely and densely white granular as in *nadata*; micropyle punctiform, depressed. Diameter 1 mm.; height .6 mm.

*Stage I*.—Forms two incisions in the edge of the leaf and bends over the included part by threads. Head rounded conic, black-brown, shining, not notched; width .55 mm. Joint 2 rather small, with a narrow, black, cervical shield. All else whitish translucent, green from the food; spiracle of joint 12 large and conspicuous, whitish. Skin dull, not shining; setæ not seen with

a lens, scarcely under a half inch objective, but iv and v were made out as very rudimentary hairs in line and remote, simple, sharp pointed, not glandular.

*Stage II.*—Rests in a portion of the leaf folded back. Head subconic, tapering above, with small vertical notch; clypeus reaching half way to vertex with side pieces; smooth, dark brown, the color reticulated, enclosing pale translucent dots; width 1 mm. Joint 2 small; a narrow, black, transverse, cervical shield. Body moderately thick, a little flattened behind, tapering before to joint 2; a subventral ridge; segments with five annulets posteriorly. All very minutely and obscurely dark pilose. No anal plate, but a subdorsal paired dark seta. Transparent, no color, food green, tracheæ whitish, distinct, their ramifications plainly showing. Venter not different; thoracic feet small, black.

*Stage III.*—Head dark brown, finely reticulated; width 1.4 mm. Body as before, the minute pile dark. Skin transparent, the appearance dark green from the food; spiracles conspicuous, a little elevated. Head small, cervical shield narrow, black; anal plate concolorous with body. Length 10 mm.

*Stage IV.*—Head very small in proportion, 2.2 mm. wide, the larva over 30 mm. long; head high, narrowing above, slightly notched, pilose, dull glaucous brown, somewhat shining, the pile obscure. Body thick, tapering before and more abruptly behind, segments 7- or 8-annulate, annulet 1 very large; slightly shining, minutely black pilose, the pile from little black tubercles. Cervical shield narrow, transverse, black; prespiracular tubercle black, a white spot below it. Thoracic feet small, black; anal plate thickened into a low pod, not pigmented. Body perfectly transparent, stomach within dark green; edges of dorsal vessel, sex glands (in ♂) and tracheæ yellowish white, the spiracle on joint 12 with dense radiating tracheæ; subventral ridge and feet a little whitish, but no fat granules or any pigment. Appearance blackish green, but wholly from food and blood.

*Stage V.*—Head rounded triangular, notched at vertex, small; white, caramel tinted, brownish at apex, a triangular black spot in apex of clypeus, a rounded spot on ocelli and jaws black; not shining, a little shagreened, pile obsolescent; width 3.6 mm. Body very large and thick, 50 mm. long, flattened at the large concolorous plate, tapering before to joint 2. Cervical shield obsolete, except a black dot at each side; spiracles large, white,



especially the one on joint 2. Thoracic feet of joint 2 black, the others white. Segments annulate behind, pile small, obsolescent, tubercles whitish. Very transparent, the blood watery, the food in the stomach dark green. Stomach, dorsal vessel, tracheæ of both skin and stomach, sex glands (the ♂ elliptical, subdorsal, situated in joint 9, the ♀ a slender oblique cord in joint 10) and the internal organs in general all plainly visible. A diffuse white subdorsal stripe of pigment on the skin; subventral fold narrowly whitish. A nearly white patch on each side ventrally of joints 11-12. Spiracle of joint 12 a little higher up than the rest, with short, densely radiating tracheæ; edge of joint 13 pilose, pale. The larva lives in one or more leaves united by silk.

*Pupa.*—Formed in the resting place of the larva, held by a transverse loop and a band of silk for the cremaster. The cremastral band is attached at one end to the leaf, at the other to a transverse thread. Pupa slender, cylindrical, a little thickest through mesothorax, last two segments tapering. Eyes large, prominent; a long, thick horn arising between them, recurved a little at the tip. Cases reaching the third abdominal segment, a long slender tongue-case reaching back 21 mm., or 5 mm. beyond the end of the cremaster. Legs of segments 4-6 represented by little patches of corneous scales. Three moveable incisures. Cremaster long, hollowed below at base with many terminal hooks. Pale green with white bloom, a curved blackish bar between the eyes; horn dark red; a set of black dots on abdomen in the normal position of tubercles i, ii and v of larva, a pair of dots on prothorax and one on metathorax subdorsally. Exactly, the abdominal black dots are thus: seg. 1, tubercle ii; segs. 2 and 3, tubercles i and ii; segs. 4-6, tubercles i, ii and v; seg. 7, tubercles i and ii; seg. 8, tubercle ii, this spiracle obsolete, represented by a scar; no tubercles behind seg. 8. Skin finely wrinkled, shagreened. Dimensions 40 x 7.5 mm.; length of horn 3 mm.

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### A THIRD AMERICAN SPECIES OF *CYNOMYIA*.

By GARRY DE N. HOUGH, M.D.

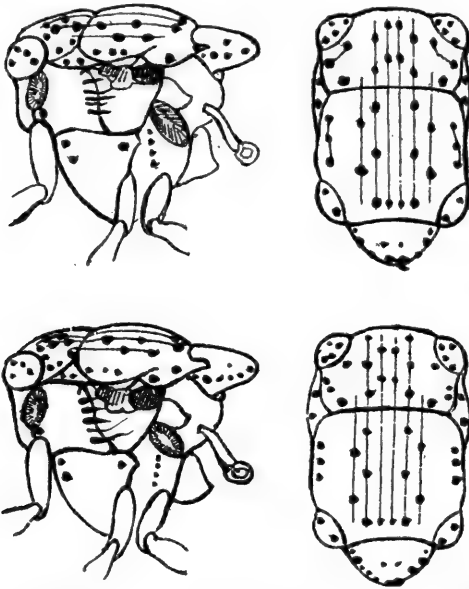
In the ENTOMOLOGICAL NEWS for May, 1898, I described two new American species of *Cynomyia*. In a small collection of Muscidæ made by Mr. Trevor Kincaid on St. Paul's Island,

Alaska, last Summer, I found a third species, whose description follows :

***Gynomyia hirta*** nov. sp.; one male and one female. In size, color and proportions this species resembles very closely *Cynomyia mortuorum*

Linn. The male differs from *mortuorum* :

(1) by its much longer and denser coating of hair on the thorax, abdomen and legs, and (2) by the much smaller size of the two terminal chitinous hooks of the hypopygium. The female may be distinguished from that of *mortuorum* (1) by having four instead of three macrochætæ in the lateral row of the flexor surface of the hind tibiæ and (2) by the discal macrochætæ of the fourth abdominal segment being stouter and more numerous.



Chætotaxy . . . That of the female differs from the normal chætotaxy of *Cynomyia americana* only in two points: (1) it has but two dorso-centrals in front of the transverse suture, and (2) it has but one achrostichal behind the suture. The thoracal macrochætæ of the male are more slender than in the other species of *Cynomyia* that I have seen, and this with the unusual length and density of the hair makes the chætotaxy of the male rather difficult to see. It does not, however, differ from that of the female except in having (1) an additional posthumeral macrochætæ laterad the presutural, (2) a very delicate third anterior dorso central, and (3) what is evidently an individual abnormality, viz., the presence of three marginal scutellar macrochætæ on the left side, while on the right side there is but one, as in the female.

I think it highly probable that the chætotaxy of the male will be found quite variable, because of its long, thick coating of hair, for in other Muscidæ, under similar conditions, I have usually found it variable.

## Some Characteristic Maritime Diptera from the South end of Padre Island, and the Adjacent Texas Coast.—I.

By C. H. TYLER TOWNSEND.

In the Summer of 1895, during the month of June, the writer collected a few insects on the south end of Padre Island, which was visited on several occasions. This island belongs to the *Antillean* province, and to that fauna which should be known as the *Mexican Maritime*. The Diptera, especially, which occur here, bear a characteristic appearance indicative of the conditions of environment which surround them. They are mostly of a whitish or gray color, thus assimilating well with the stretches of sandy beach which they frequent. Some interesting species were collected here, as well as on the beach of the mainland.

### TABANIDÆ.

1. *Tabanus maritimus* n. sp.—Length 10-10.5 mm. Differs from *T. psammophilus* O. S. as follows: Face gray, with white hairs; palpi white; first two antennal joints pale yellowish, the third brownish with annulate portion darker. Thorax black, clothed with white hairs, and with three grayish white pollinose vittæ. Abdomen evenly tapering to tip, blackish, hind edges of segments whitish yellow, the whole thickly clothed with a soft white pubescence. Legs pale yellowish, tips of tibiæ slightly brownish, tarsi hardly so. Wings whitish, the stump of a vein near origin of upper branch of third vein is well marked in two of the specimens, being as long as the basal section of the branch, but in the other it is exceedingly short and barely perceptible; posterior cells all open, none of them narrowed; halteres whitish yellow. Difference between the large and small facets of the eye is not marked, being gradual and slight, and the small facets cover an extensive area along posterior orbit, the large facets being confined to the inner central portion of the eye. In life this species presents a uniformly white appearance, being almost exactly the color of the sand and drift-wood upon which it habitually rests.

Three males, June 29, 1895, on logs and sand on beach, at south end of Padre Island, Texas.

*T. psammophilus* was taken by Hubbard and Schwarz on the sea-beach of the Florida coast, at Fort Capron. Mrs. Slosson has recently taken it at Lake Worth, Florida (det. Johnson).

It is quite possible that *T. nanus* Mcq., described from Texas, is identical with the present species. But should this be the case, the name *nanus* is preoccupied, as already pointed out by Osten Sacken, and cannot be retained. The size, 4 lines (= 8 mm.), more nearly coincides with the present specimens than with

*psammophilus*. The present species is certainly distinct from *psammophilus* in the character of the facets of the eye in the ♂, as well as in the other points mentioned. It should be stated that there is no distinct process at base of third antennal joint, there being nothing more than a slight swelling which hardly affects the symmetry of the basal portion.

#### EPHYDRIDÆ.

2. *Lipochæta texensis* n. sp.—Length 3 to slightly over 4 mm. Differs from the description of *L. slossonæ* Coq. as follows: Head is even broader than thorax. Clypeus projecting fully the length of face. Front nearly as wide as oral opening in one specimen, in the other somewhat narrower; scutellum in one specimen one-third, in the other fully one-half as long as thorax. Claws are distinct, slender, and a little elongate, but not large or stout. The third and fourth veins converge toward their tips, but not strongly so. This fly may prove to be inseparable specifically from *slossonæ*, but it will at least form a good variety, from its larger size, longer scutellum, etc.

Two specimens, June 8, 1895. Taken on moist beach at south end of Padre Island.

This is a sleek, densely whitish-pollinose, glossy ephydrid, of a very peculiar aspect. It occurred in large numbers on stretches of moist beach on the south end of Padre Island. The specimens were taken and observed just after a rain, and while a heavy wind was blowing. They flew up in numbers as one approached, but rose only an inch or so from the sand. The whole insect, save for the dorsal brownish pollinose portion, presents a marked whitish appearance, including the wings, so that it is very difficult to detect it when alighted on the moist sand of the beach, the white and brown tints assimilating well with the colors of the beach.

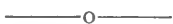
The Florida species has similar habits, and is doubtless a maritime or shore species. It is from Punta Gorda.

The genus *Lipochæta*, described recently by Coquillett for the Florida species (ENT. NEWS, September, 1896), is truly one of singular aspect and anomalous position, though clearly allied to the Ephydridæ. It is, however, totally different in several important respects from that family as at present characterized. The excessively short face, greatly widened and enlarged oral cavity, the projecting clypeus showing in a wide semi-circle; the elongate, flattened, and widened head, wedge-shaped in profile;

the wide front, round eyes and minute antennæ; all these taken together, with the absence of all bristles, give this fly from a front view a striking appearance, which can only be described as "frog-mouthed" or "frog-faced."

In the shape of the head, this genus bears a considerable resemblance to *Pteremis nivalis* Haliday. The appearance of the head from above is almost exactly the same, but the profile view at once shows marked differences.

The striking similarity in the maritime faunas of the south Texas and Florida coasts, indicated by such forms as *Macrancylus*, *Oxaxis*, etc., among the Coleoptera, is thus seen to be borne out also by the Diptera in *Tabanus maritimus* and *psammophilus*, *Lipocheta*, etc.



### AN INSECT-CATCHING PLANT.

By C. P. GILLETTE, Fort Collins, Colo.

Any one who has attempted to collect the pretty blue flowers from *Lactuca pulchella* must have been annoyed by the disagreeable sticky exudation that covers the buds and stems near the flowers, and probably the latter were soon thrown away in disgust. This plant grows in great profusion along the railroad track near the college grounds at Fort Collins, where it vies with the entomological enthusiasts in the insect captures that it makes. In a few minutes' time this afternoon I noticed the following insects stuck fast, and for the most part dead, in the gummy exudation above mentioned :

#### Hymenoptera.

*Chalybion cœruleum*  
*Amblyletes subrufus*  
*Myrmica lobicornis*  
*Formica fusca*  
 " *integra*  
*Chrysis* sp.

*Coccinella 9-notata*  
 " *sanguinea*  
*Næmia episcopalis*  
*Scymnus* sp.  
*Trirhabda canadensis*  
*Ellychnia corrusca*  
*Epicauta cinerea*.

#### Coleoptera.

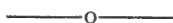
*Hippodamia convergens*  
 " *sinuata*

#### Odonata.

*Lestes congener*.

There were also several species of Diptera and parasitic Hymenoptera as well as other species of ants that I did not know.

Ants, ladybeetles and the Lampyrid above mentioned were specially abundant. Probably the ants and ladybeetles were attracted by the green lice, a species of *Nectarophora*, that are abundant on the plants. The lice and a *Syrphus* larva that feeds upon them seem to experience no trouble at all from sticking to the plant. A few Coccinellid larvæ were also seen, but in every case they were dead and quite small.



### TENODERA SINENSIS?

By ELLA JACOBS, Philadelphia.

While on a visit to Meehan's nurseries in Germantown, in March, 1898, a party of us found, on some low spruce and cedars, several curious looking specimens of what we were not sure. They looked like galls—they were hemi-spherical in shape, with a diameter of about  $1\frac{1}{4}$  inch. the flat side up, curved side down. I cut one of these whitish brown specimens open. It was rather tough, and contained a sticky fluid throughout. I was not sufficient of a scientist to discover what it was, so waited developments with the others. About the end of May, as I went to my office, the janitor greeted me with the pleasant news that my room was full of "bugs." Rather startled, I proceeded to investigate, and discovered several hundred insects on the wall, over pictures and desk. I examined closely and decided it was the fault of my unnamed specimen. I noticed that it was broken open in ridges; I placed it in a box and in an hour I saw several of the insects emerge. The curious part is, that these insects appeared to be the Praying Mantis. A visit to Dr. Skinner, at the Academy, confirmed this fact.

It seems rather a coincidence to have found these in this locality so soon after the report of Mr. Laurent's (see ENT. NEWS, for June, page 144) find of a somewhat similar character.

I greatly regret that we took all of the cases we saw, six of them, as I know now that their contents would have been a valuable acquisition to the nurseries as these carnivorous insects would have eaten other insects injurious to the plants. Undoubtedly these Mantids must have been imported on some foreign plants.

[The young mantids are not our *Stragomantis carolina*.—ED.]

## A SOUTHERN TYPE OF ANDRENA IN CONNECTICUT.

By T. D. A. COCKERELL, N. M. Agr. Exp. Station.

**Andrena rhodura** n. sp. ♀.—Length slightly over 10 mm., stoutly built, black, with the abdomen and tarsi largely red. Head broad, the facial quadrangle\* broader than long, its sides parallel; pubescence of head and thorax moderately long, but not very dense, dirty yellowish white, shining; clypeus rather prominent, with strong, rather close punctures; basal process of labrum broad, rounded, subtruncate at tip, not emarginate; mandibles feebly notched within near the end; antennæ black, flagellum tinged with dark brown beneath; mesothorax rather shiny, minutely tessellate, with sparse, but strong and very conspicuous punctures; scutellum similarly sculptured, but the punctures are aggregated in the median line and again at the sides; pleura quite closely punctured; metathorax rather closely, but shallowly punctured; the enclosure indistinctly marked by a line only, minutely granular or rugose, only at the base slightly inclined to be plicate, produced to a point behind; the enclosure is duller than the sides of the metathorax; tegulæ very dark chestnut-brown, minutely lineolately sculptured. Wings with a strong reddish yellow tinge, subcostal nervure black, the nervures and the stigma ferruginous. Legs black, with pale pubescence, the first four tarsi largely, and the hind tarsi entirely, ferruginous; the hind tibiæ are ferruginous at the distal end. Abdomen rather broad, shining; without hair bands, but with pale, glittering yellowish hairs on the fourth segment at the sides, and densely on the fifth, the anal fimbria pale yellowish, upper surface of abdomen minutely tessellate, with sparse, very feeble punctures. Color deep chestnut-red, the base of first segment, and the bases of all the segments broadly black, a black spot on each side of the second segment; venter reddish, largely suffused with black.

*Hab.*—Hartford, Conn., June 2, 1895 (S. N. Dunning).

The sculpture of the metathorax at once separates this from *A. mariæ* Rob. From *A. erythrogastra* Ashm. (*perezi* Rob.) it will be readily known by the strong mesothoracic punctures and the strongly colored wings.

*A. rhodura* is a very interesting species, quite alone among the forms taken in the New England States, but belonging to a series which becomes well developed in the southwest, with *A. jessicæ argemonis*, *prunorum*, *mellea* and *casadæ*, and extends far down into Mexico, as in *A. discreta*. It is, however, distinct from all these species, as might be expected from the widely different habitat.

\* The term "facial quadrangle" is herewith proposed for the quadrangle formed by the facial margins of the orbits and imaginary lines drawn transversely connecting the upper and again the lower ends of the eyes.

The following form shows the northern extension of the same type of *Andrena* in the Rocky Mountain region :

***Andrena prunorum*** Ckll. subsp. ***gillettei*** n. subsp. ♂.—Length 11 mm.; smaller and more slender than *prunorum*; antennæ more distinctly crenulated, entirely dark, without any ferruginous, even on scape; pubescence of head and thorax very pale yellowish instead of fulvous; femora black, with only the apex ferruginous; second and third abdominal segments wholly ferruginous, except a small, oval, black spot on each side of second, fourth segment ferruginous laterally at base; venter ferruginous, dusky at apex; clypeus lemon-yellow, with two black spots. Thorax wholly black. Abdomen closely and distinctly punctured, Wings dusky at apex; stigma ferruginous; basal process of labrum emarginate.

*Hab.*—Fort Collins, Colorado, April 15, 1897 (C. P. Gillette, 2468).

—o—

### **Sphæridium scarabæoides** Linn.

By C. HOUGHTON, Potsdam, N. Y.

This interesting species, which I first discovered here during the Summer of 1896, is now quite common in this section of the country. It may be confidently looked for at any time during the months of June, July and August, provided one knows its habitat. Unless he does it is safe to say that he will know but little about the species, as I have never seen it anywhere except in one place, viz., about the cow-droppings in the pastures.

On any pleasant day during the three months above mentioned, should one take a position near some fresh droppings, he would probably soon see one of these beetles come flying rapidly across the pastures and, hovering for a second over the spot, suddenly bury itself in the soft excrement. With a stick or paddle it is an easy matter to locate them, but one needs to be quite expert with the pincers else he will soon lose his specimens, as it is a very agile species and burrows out of sight with astonishing rapidity. As soon as the droppings begin to dry up, it is useless to look for them therein, as they immediately leave for other places more to their taste.

As an instance of their numbers in this locality, I might say that I have taken, during the course of a quarter of an hour, as many as twenty-five of these beetles from a single pile of droppings.

Associated with them I have found the following: *Aphodius fossor*, *Aph. prodromus*, *Aph. fimetarius*, *Aph. inquinatus*, *Aph. varicola*, *Atænius cognatus*, *Onthophagus hecate*, *Hister abbreviatus*, *Cercyon hæmorrhoidalis*, *Cleochara bimaculata*, *Philonthus longicornis* and various other species of Staphylinidæ.



## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—Ed.

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PHILADELPHIA, PA., SEPTEMBER, 1898.

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### The Effect of the War in Relation to Entomology.

Now that the United States will add to its territory the question arises what will entomologists do in the matter? Undoubtedly those in America will take a greater interest in the annexed countries and some that do not collect or have any regard for exotic insects at present may be induced by political reasons to do so. Our present faunal limit (America north of Mexico) is geographical, inasmuch as we include the country to the north of the United States to the Arctic Ocean. The proper plan for students to adopt, especially systematists, would be to ignore political and geographical lines and take up for study some genus, family, or order of the world. In this way the true relationships of genera and species may be properly understood. Work on geographical lines has caused an almost endless amount of trouble in generic relations and synonymy. We very much doubt whether our American lists will ever contain the names of Cuban, Porto Rican, Philippine or Hawaiian insects.

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ON JUNE 15th a specimen of *Papilio cresphontes* Fab., was taken here in the greenhouse. It was somewhat rubbed and faded, showing that it was not a fresh specimen, but the wings were unbroken. This is the first time I have seen the species since coming to New Haven, Ct., four years ago. *P. philenor* is very common in this locality. During June, 1896, I captured two specimens of *Colias cæsonia* Stoll., but have not observed it any other season.—W. E. BRITTON.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

Mrs. SLOSSON has taken the female of *Thecla telea* Hew. at Miami, Fla.

ANTHOCHARIS GENUTIA has been plentiful this season at Westville, N. J., which is only a few miles from Philadelphia.

Prof. JAMES FLETCHER expects to take some fine things this season in the Rocky Mountains of Canada. We wish him great success.

PAMPHILA METEA evidently has quite a wide distribution. Dr. Scudder mentions various places in New England where it is found, and also cites New York and Wisconsin. Mr. Edwards, in addition to the other localities, gives Texas and Colorado. The Colorado locality is based on the female described by Reakirt under the name *ridingsii*. I have it from Missouri, and recently the Philadelphia collectors have found it in abundance at Clementon, N. J., where it is found on barren sandy patches, alighting on the sand and on the sand-myrtle. The full life-history may be worked out this year. *Syneda graphica* is also very abundant at Clementon.—HENRY SKINNER.

Mr. WM. J. GERHARD, of the Academy of Natural Sciences Philadelphia, is studying our material in the Hesperidæ of the world and arranging them according to the most recent classification. He is not quite sure whether genera or species are in excess, and when he gets through he may have a genus for every species, as is the case in our Eastern Papilio according to one of our esteemed New England friends. According to the "Biologia" we must put (*Eudamus*) *pylades* and *bathyllus* in different genera on the strength of the male sexual character, the costal fold, which is so common in the family. This question of genera, to say the least, is a very interesting one, and no man can tell where it may end.—H. S.

YESTERDAY, when I was driving out in the country on professional business, a *Pamphila* sat down on the back of my left hand and began to feed in the same manner as is told by Mr. J. M. Dodge in ENT. NEWS, vol. ix, p. 89. At first I thought it was drinking the sweat, but then I remarked that it curved its abdomen a little between the legs and ejected a fluid, upon which it fed. The wings were kept together all the time, and I was not able to identify it surely, but I believe it was a *P. hobomok*.

Last Winter I found a cocoon of *Cecropia* on a hazel bush, and as it felt empty I opened it and found an Indian corn in it. How did it get there? Birds?—C. HOEG, Decorah, Iowa.

BUG STEALS A DIAMOND PIN.—A monster bug robbed Jesse P. Van Doozer, of Evanston, of a \$200 diamond scarf-pin Saturday night. Mr. Van Doozer is the famous former captain and coach of the Northwestern

University football team, and is now assistant postmaster at Evanston. How he happened to loose his pin is told as follows: As Mr. Van Doozer was returning from the Summer evening party at the Country Club Saturday night his attention was attracted by a particularly large specimen of the genus beetle. In college Mr. Van Doozer was an ardent student of zoology, especially of the branch technically named entomology, but known to the uninitiated as "bugology." He still retains his studious habits, and this struck him as an unusually choice heteropterous hemipterous specimen. With practiced dexterity he captured the mean-looking insect and carried it squirming to his room. As no pin was convenient, he stuck the monster bug to the wall for a moment with his diamond scarfpin. He turned to his bug collection and spent some time in rearranging it and making a place for his new acquisition. A lively buzzing drew his attention to the beetle, which had worked itself loose from the wall and began to circle about the room with the pin sticking through his body. Van Doozer made for the open window, but the great beetle was too quick for him. As it darted through the opening the sparkle of the stone added a new brightness to its sheen. The diamond scarfpin is still missing.—*Newspaper*.

*Cychnus viduus* Dej.—This very handsome species, hitherto regarded as quite rare, has been taken in numbers about Pittsburgh, Pa., during the season of 1897. Every collector who really searched for the species at the right time was rewarded for his labor. One of them took as many as ninety specimens in five days—an average of eighteen a day. How many this same party took since, the writer does not know, but from information received the number must have been considerable.

In the opinion of the writer the best time to look for *viduus* is from about the 25th of July until the middle of September. The fact that most, if not all, of the captures above alluded to were made during this period is of itself sufficient evidence. The condition of the weather has much to do as regards the abundance or scarcity of the species, a wet season always being much better than a dry one. Whether or not the former actually produces more specimens than the latter the writer does not venture to say, but it is highly probable that it does; at any rate it drives them to the surface where they are much more likely to be found. The weather the past Summer was unusually favorable, as we had rain almost every day for about six or seven weeks beginning July 5th.

I wish to place on record the following notes:

*Smodicum cucujiforme* Kirby.—This species has been breeding for the past three years in some locust fence-posts which were entirely stripped of bark and set ten years ago. The beetles emerge from the latter part of June until the middle of July.

*Obrium rubidum* Newm.—My collection contains one specimen of this very rare longhorn, which was bred from *Robinia pseudacacia* (locust), the beetle emerging May 3, 1894. Several other specimens which I have had were taken on locust trunks on as many different occasions.

*Cyrtophorus verrucosus* Oliv.—This species also breeds in *Robinia pseudacacia* and is not unfrequently taken on the living trunks during May and early June. Sometimes specimens are taken in April if the weather be quite warm.—EDWARD A. KLAGES, Crafton, Pa.

## Entomological Literature.†

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

- 2.** Transactions of the American Entomological Society, Philadelphia, xxv, 1, '98.—**3.** The American Naturalist, Boston, '98.—**4.** The Canadian Entomologist, London, Ont., '98.—**5.** Psyche, Cambridge, Mass., '98.—**6.** Journal of the New York Entomological Society, June, '98.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; publications of, '98.—**8.** The Entomologist's Monthly Magazine, London, '98.—**9.** The Entomologist, London, '98.—**10.** Nature, London, '98.—**11.** The Annals and Magazine of Natural History, London, '98.—**15.** Biologia Centrali-Americana, pt. cxli, London, April, '98.—**21.** The Entomologist's Record, London, '98.—**22.** Zoologischer Anzeiger, Leipsic, '98.—**24.** Berliner Entomologische Zeitschrift, xlii, 3-4, July, '98.—**30.** Memoires et Bulletins de la Société Zoologique de France, Paris, '97.—**32.** Bulletin du Muséum d'Histoire Naturelle, Paris, '98.—**35.** Annales et Memoires, Société Entomologique de Belgique, Brussels.—**36.** Transactions, Entomological Society of London, '98, pt. 2, June 29.—**38.** Wiener Entomologische Zeitung, xvii, '98.—**40.** Societas Entomologica, Zurich-Hottingen, '98.—**44.** Verhandlungen, k. k. zool.-bot. Gesellschaft in Wien, xlviii, '98.—**45.** Deutsche Entomologische Zeitschrift, Berlin, '98, 1, June.—**49.** Termesztudományi Füzetek, Budapest, xxi, 1-2, Mar. 10, '98.—**55.** Le Naturaliste, Paris, '98.—**61.** Natural Science, London, May, '98.—**66.** Naturwissenschaftliche Rundschau, Braunschweig, '98.—**76.** Journal, Cincinnati Society of Natural History, xix, 4, '98.—**77.** Report, State Board of Agriculture on the work of extermination of the gypsy moth, Boston, Wright & Potter Co., State Printers, Jan., '98.—**78.** Gardeners' Chronicle, London, '98.—**79.** La Nature, Paris, '98.—**80.** Annali, Museo Civico di Storia Naturale di Genova (2) xviii. Rec'd Aug. 8, '98.—**81.** Biologisches Centralblatt, Erlangen, June

† The Associate Editor is again indebted to Mr. W. J. Fox and to Dr. Skinner for caring for this department during his Summer vacation.—P. P. C.

15, '98.—**82.** Centralblatt für Bakteriologie, etc., Jena, '98.—**83.** Notes from the Leyden Museum, xix, 3-4, Dec. 30, '97.—**84.** Insekten-Börse, Leipsic, '98.—**85.** Bulletin, Société des Sciences naturelles de l'Ouest de la France, Nantes, viii, 1, '98.

**The General Subject.**—de Bruyne, C. Researches on the subject of the intervention of phagocytosis in the development of Invertebrates, 5 pls., Archives de Biologie, xv, 2, Ghent, '98.—Calvert, P. P. A biographical notice of George Henry Horn (portrait), **2.**—Comstock, J. H. and Needham, J. G. The wings of insects, iii, figs, **3,** April, May, June.—Coupin, H. Flowers fertilized by bats and insects, **79,** May 14.—[Dixey, F. A.] Hybridization, **9,** July.—Garbowski, T. Brunner v. Wattenwyl's "Observations on the coloration of insects", **81.**—Hanstein, R. v. [On recent work on faceted eyes], **66,** May 28.—Howard, L. O. The spread of land species by the agency of man; with especial reference to insects, Proceedings, American Association for the Advancement of Science, xlv. —Howes, G. and Smith, W. W. Notes on *Spheria larvarum* Westw., **9,** June.—Kienitz-Gerloff. Prof. Plateau and the flower-theory, **81.**—v. Linden, M. Eimer's 'Orthogenesis der Schmetterlinge' (cont.), **81.**—Marchal, P. Notes on an excursion in Algeria and Tunis, 1 pl., **30,** Mem. x. See also Hymenoptera.—Needham, J. G. Outdoor Studies, a Reading book of Nature study (Eclectic school readings). American Book Co. New York, Cincinnati, Chicago, 1898; 90 pp., 88 figs. Chapters on galls, golden-rod insects, dragonflies, eye-spot markings and ant-lions.—Salzner, A. Eimer's 'Orthogenesis der Schmetterlinge', **84,** June 30, July 7, 14.—Schaufuss. Symphily is broodparasitism, Naturwissenschaftliche Wochenschrift. Berlin, July 17, '98.—Slingerland, M. V. Obituary of Dr. J. A. Lintner, **4,** June.—Taylor, G. W. Entomology, notes for April in Vancouver Island, Ottawa Naturalist, June, '98.—Tutt, J. W. Books from the American masters [Packard: Text-book, Scudder: Melanopli, Fernald: Pterophoridae], **21,** June 15.—Webster, F. M. Obituary of Prof. D. S. Kellicott, **4,** June.—Wheeler, W. M. Prof. Packard's Text-book of Entomology, Science, New York, June 17, '98.—Wickham, H. F. List of insects collected by Mr. Frank Russell in the Northwest Territory, Canada. Iowa City, June, '98. Extract (pp. 276-280), from 'Explorations in the far North' by F. Russell.

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worm, Archives Italiennes de Biologie, xxix, 1. Turin, '98.—Davey, F. H. Notes on the bulb-mite, figs. Journal, Royal Institution of Cornwall, xiii, 2. Truro, '97.—Debray. Destruction of injurious insects, **55**, May 15, June 15.—Fernald, C. H. Report of Entomologist; Arsenate of lead as an insecticide, **77**.—Forbush, E. H. Report of the Field Director, **77**.—G. A. Bulb mite, **78**, June 25.—Gillette, C. P. Colorado's worst insect pests and their remedies, figs., Bulletin 47, State Agricultural College Exper. Station, Fort Collins, Col., July, '98.—Kenyon, F. C. Abstracts of recent articles, **7**, Exper. Station Record, ix, 10.—Kheil, N. M. Fight between grasshoppers and a locomotive, **84**, June 23.—Kirkaldy, G. W. An economic use for water-bugs, **8**, Aug.—Kirkland, A. H. Experiments with insecticides; Danger from the use of arsenate of lead, **77**.—Lesne, P. Description of the larva and nymph of *Balanogastriis kola* in kola nuts, figs., **32**, No. 3.—Lounsbury, C. P. Report of the Government Entomologist for the year 1897. Cape of Good Hope. Cape Town: 1898.—Lowe, V. H. Cottonwood leaf beetle. Green arsenite, Bulletin No. 143, New York Agricultural Experiment Station, Geneva, N. Y., April, '98.—Marrlatt, C. L. The periodical Cicada. An account of *Cicada septendecim*, its natural enemies and the means of preventing its injury, together with a summary of the distribution of the different broods. Bulletin No. 14 new series, **7**, 148 pp. 57 text figs. (including maps) and 4 plates (one colored). An extensive monograph whose contents are well summarized in the title.—McLachlan, R., R. M., Forbes, A. C. [Insect pests on forest trees] **78**, June 25.—R. M. The present plague of insects, **78**, June 18.—Slingerland, M. V. The quince curculio, figs., Bulletin 148, Cornell University Agricultural Experiment Station, Ithaca, N. Y., May, '98.—Smith, F. J. Arsenate of lead: its manufacture and chemical composition, **77**.—Webster, F. M. The importation of the San José scale, *Aspidiotus perniciosus*, from Japan, **4**, July.—Wood, E. W. and others. Report of Committee [on extermination of gypsy moth], **77**.—Xambeu, Capt. Habits and metamorphoses of *Lyctus canaliculatus* Fab., **85**.

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**Myriapoda.**—Brölemann, H. W. On a mysterious myriapod, *Scolopendropsis bahiensis* Brandt., 30, Bull. xxii.—Silvestri, F. Sistema Diplopodum; Descriptions of some new Diplopods collected in upper Paraguay by Cav. Guido Boggiani, figs., 80.

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**Neuroptera.**—Calvert, P. P. Burmeister's types of Odonata (part), figs., 2; The Odonate genus *Macrothemis* and its allies,\* Proceedings, Boston Society of Natural History xxviii, No. 12, July, '98.—Kellogg, V. L. A problem in distribution [of Mallophaga], 5, Aug.—Needham, J. G. See the General Subject.—Schenkling-Prevôt. From the life of Termites (cont.), 84, May 26 et seq.

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of the eyes named 'Agrias', 1 pl., **24**.—Griffiths, G. C. On the frenulum of the Lepidoptera, 1 pl., **36**.—Grimshaw, P. H. See Coleoptera.—Grose-Smith, H. Descriptions of new species of butterflies from South America, **11**, July.—Grote, A. R. The British Museum catalogue of moths, **61**; Classification of the Saturniades, **21**, June 15; Specialization of the lepidopterous wing, the Pieri-Nymphalidæ, Proceedings American Philosophical Society, Philadelphia, xxxvii, No. 157.—Hannham, A. W. Notes on collecting at bloom, **4**, July.—Hill, W. H. F. Notes on some Victorian case moths, part i, 1 pl., Victorian Naturalist, Melbourne, May, '98.—Hulst, G. D. Descriptions of new genera and species of the Geometrina of North America (cont.),\* **4**, June, July.—Kirkland, A. H. Digestion in the larvæ of the gypsy moth, **77**.—Marshall, G. A. K. Seasonal dimorphism in butterflies of the genus *Precis* Doubl., **11**, July.—McCorquodale, W. H. Horn-feeding larvæ, fig., **10**, June 9.—Moore, F. Lepidoptera Indica. Part xxx. London, L. Reeve & Co., '98. Rec'd June 27, '98. [Pp. 113-128, vol. iii, pls. 231-238. Nymphalinae, group Euthaliina].—Schaus, W. New species of Noctuidæ from tropical America;\* New species of Heterocera from tropical America,\* **6**.—Schultz, O. Description of some gynandromorphous Lepidoptera, **24**.—Scudder, S. H. A study of the caterpillars of North American swallowtail butterflies, ii, **5**, June.—Seurat, L. G. Metamorphoses of *Papilio daunus*, Memorias y Revista de la Sociedad Científica "Antonio Alzate," xi, 1-4, Mexico, '98.—Smith, J. B. Notes on species of *Noctua* with descriptions of new forms,\* 1 pl., **6**.—Urech, F. Some remarks on color alterations of the wing-scales produced by girdling soft pupæ of *Vanessa urticae*, **40**, June 1.—Verson, E. On the development of the digestive canal of the silkworm, ii, **22**, July 18.—Voss, T. On hermaphrodite Lepidoptera, **84**, June 23.—Walsingham, Lord. Descriptions of a new Micropterygid genus and species and a new Eriocraniad species from N. America, 1 pl., **21**, July 1; A review, with some critical notes of "The Pterophoridae of North America, C. H. Fernald," etc., **8**, Aug.

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north of Mexico,\* **2**.—Friese, H. New species of the bee genus *Eulema* Lep., **49**.—v. Hanstein, R. A Bethe's "Can we ascribe psychical qualities to ants and bees?", **66**, June 18.—Janet, C. Notice on the scientific works presented to the Academie des Sciences in the competition of 1896 for the Thore prize. [On ants, bees and wasps], 94 pp. Lille; Morphological limits and musculature of the post-cephalic annuli of *Myrmica rubra*. Lille, '97, 8vo.; Relations of the myrmecophilous animals with ants, figs. Limoges, '97, 8vo.; Apparatus for the observation of ants and myrmecophilous animals, 1 pl., **30**, Mem., x; Parasites and mess-mates in ant-hills (transl. abstract), **61**.—Kono, F. W. Synonymical and critical remarks on Tenthredinid species of the older authors incorrectly or not referred, **40**, July 1, 15.—Marchal, P. A new method of non sexual reproduction in Hymenopterous insects (transl. from C. R. Acad. Sci. Paris), **61**.—Marshall, T. A. Supplement to Braconidæ, 3 pls., in *Species des Hyménoptères d'Europe d'Algérie fondé par Edmond André, continué sous Ernest André*, 62e fascicule, Paris, April 1, '98.—Robertson, C. New or little-known North American bees,\* Transactions, Academy of Science, St. Louis, viii, 3, Mar. 3, '98.—Wasmann, E. *Thorictus foreli* as ectoparasite of ants' antennæ, **22**, July 18.

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## Doings of Societies.

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A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held May 26th, Mr. C. S. Welles, Director, presiding. A cabinet of beetles was presented by Dr. J. Eckfeldt. Five new species of Mutillidæ were presented by Mrs. Slosson. Dr. Calvert exhibited a box of small *Mantids* collected near the city and made some remarks on the egg-case in the genus. The same gentleman also exhibited some dragonflies collected by Mrs. A. T. Slosson at Miami, Florida. *Enallagma cardenium* ♂ was collected for the first time in the United States; the species was described by Selys from Cuba. *Enallagma cæcum* Hagen, from Jamaica, was mentioned as an allied species. *E. pollutum*, of Hagen, from Florida, is either very variable, or there are two species confounded under that name. *Gomphus minutus* ♀ and other species were shown and interesting points mentioned. Mr. Johnson exhibited a mud wasp's nest, *Odynerus* sp. collected by Mr. C. Moore on the Altamaha River, Ga. Mr. Fox recorded a second American

species of *Miscophus* from Florida. Dr. Calvert spoke of the oviposition of gall-flies and mentioned seeing a gall-fly apparently in the act, but did not see any eggs go through the ovipositor.

Dr. HENRY SKINNER, *Recording Secretary*.

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A meeting of the American Entomological Society was held June 23d, Dr. P. P. Calvert, Vice-president, in the chair. The Corresponding Secretary announced the death of the following correspondents of the Society: James Behrens, San Francisco, Cala.; elected Oct. 14, 1872, died March 6, 1898. Johnson Pettit, Grimsby, Ont.; elected Nov. 12, 1866, died Feb. 18, 1898. J. A. Lintner, Albany, N. Y.; elected Nov. 10, 1862, died May 5, 1898. Osbert Salvin, elected June 28, 1897, died June 1, 1898. Dr. Calvert exhibited some dragonflies collected by Mr. C. W. Johnson on a recent visit to North Mt., Pa.: *Cordulia shurtleffii* (= *ænea* L.), described by Scudder from Hermit Lake, Mt. Washington, was of special interest on account of being a circumpolar species and this the first record of capture in Pennsylvania; *Gomphus spicatus*, also new to Pennsylvania, never before having been found this far south; and both sexes of *Ophiogomphus rupinsulensis*. *Ischnura verticalis*, a small dragonfly was found at Kirkwood, N. J., feeding on *Enallagma* sp. which had just transformed from the larval condition and was thus helpless. Mr. Needham finds that in some species larvæ are very abundant, but imagos scarce; facts like the above would account for Needham's finding. *Enallagma divagans*, a somewhat rare local species, was also found at Kirkwood. Dr. David Sharp, of Cambridge, England, was elected a correspondent.

Dr. HENRY SKINNER, *Recording Secretary*.

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# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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### NEW COCCIDÆ FROM CALIFORNIA.

By EDW. M. EHRHORN.

***Kermes cockerelli*** n. sp. ♀.—Scale 5 mm. long 4.5 mm. broad and 4 mm. high, deeply segmented, dorsum usually marked with black lines and spots along the sutures, some specimens not showing any. There is a broad, median, longitudinal groove, where the segmentation is obsolete; on each side of this the segments are strongly gibbous. Color light brown, without any conspicuous black specks; derm, by transmitted light, brown with numerous oval glands, several large pustulæ on body. Antennæ very small, 6-jointed, 3 very large, longer than the three following together; the others short, very little longer than 5, 4 shortest. Larva elongated oval, rather more than twice as long as broad, yellow, greatest breadth behind the middle of body. Eyes red, caudal tubercles quite large, each bearing one long bristle and three stout spines, one near bristle and one on the outer and inner margin of tubercle. On the anterior margin of the head are six bristles; the sides of the abdominal segments are armed with stout, but not very long bristles. Antennæ cylindrical, 6-jointed, formula (36) (12) 45, last joint rounded at tip with several hairs, one very long; rostral loop extending half way between base of third pair of legs and anal ring. Legs quite large, claw long and curved; tibia shorter than tarsus.

*Hab.*—On twigs of *Quercus lobata* at Mountain View, Cal.

Very much parasitized by undetermined *Chalcid*.

**Kermes nigropunctatus** Ehrhorn and Cockerell n. sp. ♀.—Scale 4.5 mm. long, 5.5 broad, nearly 4 high, not very pale ochreous, speckled all over with black, the black specks so small as to be readily overlooked without the use of a lens; segmentation obscure, but discernible, the sutures slightly impressed and marked by more or less pallid transverse bands; an obscure median longitudinal depressed line; underside of scale where it touches the bark, flattened and entirely dark brown; derm by transmitted light yellow with numerous round glands. Antennæ small, 6-jointed, 3 very long, about as long as 4, 5 and 6 together; joints 2 and 4 subequal and smallest. Formula 3165 (24). Larva oval, about one and a half times longer than broad, pink; greatest breadth about the middle; caudal tubercles large and distinct, each bearing a moderately long bristle and three stout spines, one on the outer and inner margin and one near bristle. The sides of the abdominal segments are armed with stout, short bristles. Antennæ cylindrical, 6-jointed, formula 361 (45) 2; last joint rounded at tip with several hairs; joint 5 with a hair; rostral loop extending beyond third pair of legs; anal ring with six hairs. Legs stout, claw long and curved; tibia much shorter than tarsus.

*Hab.*—Los Angeles, Cal., on twigs of *Quercus*. Collected by Mr. Craw.

The larvæ were found in body of ♀. It is something like *K. galliformis*, but distinguished by the impressed sutures. It is much smaller and paler than *K. gillettei*.

**Pulvinaria rhois** n. sp. ♀.—Found on limbs and underside of leaves single and in clusters. Length of ♀ with ovisac about 9 mm., width about 3.5 mm.; scale brown, largely covered with white secretion, ovisac snow-white, distinctly grooved longitudinally, sometimes curved, sometimes lifting scale off limb; scale shrunken, broadly oval, clay color, ♀ before forming ovisac something like *Lecanium hesperidum*, but more convex, reddish brown; anal plates distinct; dorsum covered with white, waxy secretion in rows, the mesal row has the largest secretions and they diminish in size as they approach the margin; edge of scale has short, simple hairs, in each anterior incision is a large spine with a short one on each side. Anal plates yellowish brown, longer than broad, forming a diamond when closed; two very small spines at tip; anogenital ring with six long hairs; rostral loop reaching to middle pair of legs. Antennæ 8-jointed, formula 3 (124) 5867; joint 3 much the longest. Joints 2, 4, 5 and 6 each with long hair, 8 with several hairs. Legs ordinary, coxa and trochanter very stout, tarsus half as long as femur; tarsal digitules long fine hairs with knobs; digitules of claw very stout, gradually widening to large knobs. Larva light yellow, flatish, elliptical, about .5 mm. long. ♂ scales small, oval, black, with numerous pale wart like prominences.

*Hab.*—On *Rhus diversiloba* at Mountain View, Cal.

## TWO NEW GENERA OF SAND WASPS.

By WILLIAM H. ASHMEAD.

(Assistant Curator Department of Insects U. S. Nat. Museum.)

## Family NYSSONIDÆ.

**FOXIA** n. g.

Habitus of *Nysson* Latr. (*sens. str.*), but differs as follows: The second and third submarginal cells each receiving a recurrent nervure, the first received by the petiolated second before its middle, the second received by the third at its basal one-third; forehead at middle with a tubercle or carina just above base of antennæ; ventral segments 4-5 in ♀ with a lateral tooth, lateral margins of pygidium towards apex serrated; ventral segments 4-6 in ♂ with a lateral tooth, the pygidium at apex tridentate, the middle tooth minute, otherwise hind tibiæ, scutellums, etc., as in *Nysson* Latr., but not *Paranysson*, which I consider to be a distinct genus.

Dedicated to my friend, the energetic young hymenopterist, Mr. Wm. J. Fox, of Philadelphia, Pa.

(1) ***Foxia pacifica*** n. sp. ♂ ♀.—Length 6-6.5 mm. Head and thorax black, rugoso-punctate, the head, except vertex, collar, mesopleura and metathoracic spines clothed with a dense silvery pubescence; mandibles, hind legs, except coxæ and abdomen, mostly rufous; four anterior legs except the anterior tibiæ within and their tarsi and the middle tarsi, which are ferruginous, black; the dorsal abdominal segments are narrowly margined with white at apex, while the three or four apical segments are more or less black or blackish.

*Hab.*—Los Angeles, Cal. Collected by D. W. Coquillett.

Type No. 5017, U. S. Nat. Mus.

## Family LARRIDÆ.

**MISCOPHINUS** n. g.

Allied to *Saliostethus* Brauns, but the wings normal, the marginal cell not triangular, but as in *Miscophus*, subtruncate at apex; submedian cell shorter than the median; cubitus in hind wings originating beyond the transverse median; eyes large, extending to base of mandibles, slightly convergent above; mandibles deeply excised beneath a little before the middle; maxillary palpi 6-jointed, the first joint the shortest, the following rather long, subequal; labial palpi apparently but 3-jointed; clypeus not sepa-

rated from the face by a distinct suture, the anterior margin slightly arcuate, with a triangular emargination or incision on either side; antennæ filiform, the scape clavate; ocelli normal, arranged in a triangle; occiput with a transverse furrow between the raised occipital margin and the base of vertex; metathorax fully as long as the mesonotum with a delicate median carina; tibial spurs long, 1, 1, 2; iibiæ with a few black spines; anterior tarsi in ♀ combed.

Type *Miscophinus laticeps*.

TABLE OF SPECIES.

Black.

Head not twice as wide as the thorax . . . . . 2.

Head twice as wide as the thorax.

Scape, pedicel, tegulæ and legs rufous ♀ . . . . . (1) *M. laticeps*.

2. Abdomen black, the extreme apex of the second segment testaceous, ventral segments with a row of sparse, stiff black hairs at apical margins; all coxæ and femora *above* black, trochanters and rest of legs, and the scape, rufous . . . (2) *M. californicus*.

Abdomen mostly rufous, the two or three terminal segments obfuscated or blackish; legs, scape, pedicel, clypeus, mandibles, tegulæ, ferruginous; prothorax brownish . . (3) *M. texanus*.

(1) *Miscophinus laticeps* n. sp. ♀.—Length 5 mm. Black, closely finely punctate, opaque; face, sides of collar and the meso- and metapleura silvery sericeous; clypeus, mandibles, except tips and legs, rufous; tegulæ and palpi paler; wings hyaline, the apical third fuscous. The head is unusually wide, twice as wide as the thorax; pronotum fully as long as the mesonotum; posterior face of metathorax transversely striate, with a median sulcus; tibiæ with some sparse black spines, their spurs long, black; anterior tibiæ with a sparse comb; transverse median nervure in front wings joins the median vein a little before the origin of the basal nervure; the marginal cell is only about two-thirds the length of the first submarginal, triangular petiolate, the petiole being as long as either side of the cell.

*Hab.*—Sacramento Co., Cal. Taken in July by A. Koebele.

Type No. 5018, U. S. Nat. Mus.

(2) *Miscophinus californicus* n. sp. ♂.—Length 4 mm. Structurally, resembles the former species, except the head is not nearly so wide; the silvery pubescence is denser on the face, on the lower part of the mesopleura and on the front coxæ; the first, second and third dorsal abdominal segments *laterally* at apex also show more or less of the silvery pubescence; scape, mandibles, except tips, and tegulæ ferruginous; all coxæ and femora *above* black, trochanters and rest of legs rufous or ferruginous;



anterior tarsi with rather short spines; tibial spurs black; extreme apex of second abdominal segment testaceous; wings dusky at apex.

*Hab.*—Alameda Co., Cal. Taken in Sept. by A. Koebele.

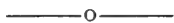
Type No. 5019, U. S. Nat. Mus.

(3) *Miscophinus texanus* n. sp. ♀.—Length 5 mm. In general appearance this species closely resembles *M. californicus*, but the collar is brownish ferruginous, the clypeus, mandibles, scape, pedicel and legs ferruginous, the middle and hind coxæ at base behind, dusky or blackish; abdomen mostly dark rufous, the two or three apical segments blackish, the ventral segments blackish toward their base; the venation is similar to the two previous species, except that the submedian cell is somewhat shorter and the petiole of the second submarginal cell is much shorter, being scarcely one-third the length of the side of the cell.

*Hab.*—Bosque County, Texas. Coll. G. W. Belfrage.

Type No. 5020, U. S. Nat. Mus.

It may be well to state here that the type of *Nysson*? *inermis* Cr. is in the National Museum. Type No. 1714. As indicated by Cresson, it is not a true *Nysson*, but belongs to this group in the genus *Nitelopsis* Saunders. I cannot agree with Herr Kohl in suppressing this genus and merging it with *Solierella* Spinola. It forms a natural group between *Scaphentes* Handl. and *Sylaon* Piccioli.



## NOTES ON MISSOURI SPHINGES.

By R. R. ROWLEY, Louisiana, Mo.

Of all our hawk-moths the larva of *Paonias excæcatus* is the most general feeder. In the Autumn of 1887 I experienced little difficulty in gathering together a great number of the caterpillars of this species, and while most of them came from apple and plum, others were found feeding on tame cherry, apricot, elm, sugar-maple, willow, sycamore and oak. The species is double brooded here and the larvæ may be found from June to mid-October, surviving severe frosts. It is a hardy "worm" and easily reared in bags or glass-jars, but suffers severely from the attacks of a small parasitic hymenopter whose cocoons we often see covering the whole body of the larva. There is some variation in the color of the imagoes, but the handsomest form and one of our prettiest hawks is a large female, the red of the hind wing beautifully blending with a rose-colored forewing.

*Smerinthus geminatus* is even more common than *excæcatus* at times, and I have found the larvæ abundant on *Populus tremuloides* and willow and sparingly on cottonwood and silver leaf. In searching for the eggs of this Sphinx on the underside of the leaves of aspen I was surprised to find many of them with pale pink blotches and occasionally entirely pink. Suspecting such eggs to have been attacked by some small parasitic hymenopter I was again surprised to obtain healthy larvæ from them—perfect pupæ and imagoes in time. The larva of *Geminatus* is more slender than that of *excæcatus* and somewhat smaller, but of two well defined types—one yellowish pea-green, the other blue-green. The larvæ of all *Smerinthoids* occasionally have lateral rows of red spots or blotches not so well defined as in *S. myops*. Fully half the larvæ of *Geminatus*, found on willow, have this character.

I have noticed but little variation in the imagoes. Have never yet found a specimen with a single instead of a double blue pupil in the eye spot. The pupa is easily distinguishable from that of *excæcatus*, as it is almost black against the brown of that species.

*Smerinthus myops* is rare with us, a single larva having been found by Mr. Ralph Sweet, of Curryville, Mo., on wild cherry. The caterpillar has lateral rows of beautiful and distinct red spots. I have found some variation in the imagoes, especially the males.

Neither *S. astylus* nor *S. cerisii* have been taken in Missouri by the writer, but the former might be sought for in the huckleberry hills of Callaway County and the Ozark region south of the Missouri River. The larva of *astylus* feeds on low huckleberry according to Miss Morton.

*Triptogon modesta* is not uncommon with us, and the larva is found on cottonwood, silver-leaf and aspen. Mr. Sweet has handled great numbers of the larvæ and has found them hardy and easily managed in muslin bags. The great size of the "worm" and its short caudal horn readily distinguish it.

*Cressonia juglandis* is rather rare. I have found the larvæ on walnut and hickory. Like *S. geminatus* the "worm" is of two types of color, yellowish green and blue-green. The body is long and slender, and the larval head long and sharp pointed. The pupa of this species differs much from all other Sphinx chrysalids, having a flattened, triangular appearance, posteriorly.

*Elema* may be found on the pine ridges of southern Missouri. I have not found it here.

I have not yet found *Deidamia inscripta*. The larva feeds on grape.

*Everyx chærilus* is not uncommon about Curryville. There are two seasonal broods. The imago is larger, but not more handsome than *E. myron*. The larva is found here on black paw (*Viburnum prunifolium*) and snow-ball. Have never found it on other plants. It may be easily reared in bags on snow-ball, but is singularly subject to the attacks of a hymenopterous parasite, so much so that few of the first brood seem to escape.

Of all our vine feeding hawks, *Everyx myron* is the commonest. Larvæ may be found from early Summer to late Autumn, and are easily recognized by the swollen thoracic region, small head and caudal horn, absent in the mature larva of *Philampelus*. There is a very noticeable difference in the color of the imagoes. In the Summer brood (from Summer larvæ in June and July) many of the moths have the rust-red over both wings, more or less obscuring the otherwise olive-green of the Spring imagoes from Autumn larvæ.

Patient search has thus far failed to find *Everyx versicolor*, though its food-plant, button bush, occurs along our streams. I am still sanguine of success. I feel sure it is among our hawks. The larvæ of all our species of *Everyx* pupate on the surface of the ground in loose cocoons of leaves, dirt and silk.

I have taken the imago of *Chærocampa tersa* at light, but have failed to find the larva. It is said to feed on button-weed. Mr. Ralph Sweet once found an imago fresh from the pupa, near a prairie brook or slough, but a search for the food-plant proved fruitless.

In 1886 the writer collected 25 larvæ of *Everyx myron*, 24 of *Ceratonia amyntor*, 6 of *Dolba hylæus*, 40 of *Paonias excæcatus*, 20 of *Daremma undulosa*. In 1887, 106 larvæ of *Smerinthus geminatus*, 24 of *Hemaris thysbe*, 12 of *Everyx chærilus*, 6 of *Triptogon modestus*, 36 of *Daremma undulosa*, 15 of *Hemaris diffinis*, 15 of *Paonias excæcatus*, 8 of *Philampelus achemon*. In 1897, 12 larvæ of *Philampelus achemon* and 13 of *Smerinthus geminatus*, 1 *Cressonia juglandis*, 4 *Dolba hylæus*, and an unknown *Sphinx* from trumpet creeper.

**A NEW SPECIES OF POLYXENUS.**

By TREVOR KINCAID, University of Washington.

In 1821 Thomas Say described a diplopod from the Southern States to which he gave the name *Polyxenus fasciculatus*.\* Since that time the geographical range of this species has been considerably extended, but it has remained the sole representative of the suborder Pselaphognatha found within the limits of the United States, although at least one species has been recorded from the West Indies.

During the past few years the writer has collected at various points in western Washington specimens of a small, hairy myriopod belonging to the genus *Polyxenus*. A study of Say's description of *Polyxenus fasciculatus*, supplemented by specimens of the same supplied by Mr. Nathan Banks, showed that the Washington species was quite distinct from the form described by Say. In *Polyxenus fasciculatus* the antennæ are short and clavate, whereas in the species described below these organs are elongate and filiform. In this respect the new form resembles the common European *Polyxenus lagurus* De Geer, as described by Bode.†

***Polyxenus pugetensis*** n. sp.—Color above yellowish white, the lateral portions of the dorsal segments and external margin of the head brown; ventral surface and legs pure white. Body narrow, sides of the dorsal segments parallel; head semicircular in outline, deflexed, the mouth-parts at postero-ventral margin; antennæ elongate, filiform, widely separated at base, arising from beneath the anterior margin of the head, composed of eight joints; first and second joints cylindrical and equal, third joint a little shorter, the succeeding four somewhat swollen in the middle, eighth joint only one-fourth as long as penultimate and bearing distally a group of four minute processes. Ocelli six on each side; two groups of five each are borne upon dark oval prominences in the middle of the lateral margins of the head; the sixth members lie in lobate, ventrally-directed extensions of the main ocellar prominences, and are not visible from above. Vibrissæ, two on each side, placed just anteriorly to the ocellar areas. Setæ brownish, except terminal pencil, which is silvery; each of dorsal segments two to ten bears near its posterior margin two rows of oppositely-directed, serrated setæ, the rows uniting externally, and the setæ in this region being directed outwardly; on the first segment the setæ are arranged in two irregular dorsal groups; from the middle of the posterior margin of the eleventh segment a loose tuft of long setæ

\* Jour. Phila. Acad. ii, 108 (1821).

† Zeitschr. für d gesammte Naturwissensch. xlix, 1877.

projects backward over the anal pencil; each lateral segment from two to ten is produced into an oval prominence from which projects a radiating fascicle of long setæ similar to those forming the dorsal rows; the basal area dorsally, and the ventral surface of the head are glabrous, but the central-dorsal region is crossed by two transverse rows of setæ, and the anterior region is thickly setate; a pair of setæ is usually present on the occiput; anal pencil formed of two dense fascicles of long, slender, delicately-spined hairs that terminate distally in enlarged, recurved, fimbriated processes. Length of adult specimens 3.0 mm.

*Hab.*—Western Washington. Usually found in damp places, beneath the bark of decaying logs, in moss, under dead leaves, etc. As a rule they are gregarious, and occur in colonies of considerable magnitude, but so far only females have been observed.

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### STUDIES IN CEPHALOIDÆ.

By THOS. L. CASEY.

The very unexpected discovery of a remarkable divergence in tarsal and unguis structure, in a specimen from Placer County, California, recently sent to me by Mr. Fuchs under the name *Cephaloon bicolor* Horn, led me to investigate the material in my cabinet from a generic point of view, and to the conclusion that the genus *Cephaloon*, as heretofore known to us, is a complex of several genera having a strong family likeness among themselves. These genera may be distinguished as follows :

Tarsi slender, the penultimate joint unmodified, the claws nearly straight, arcuate at tip and pectinate within.

Appendage of the tarsal claws broad and obtusely rounded at apex.

Last joint of the maxillary palpi conical, the inner side but slightly shorter than the outer, the oblique apex short and straight; antennæ short, the last three joints broader, but not notably elongate . . . . . **Cephaloon** Newm.

Last joint of the maxillary palpi with the inner side very short, the apex strongly oblique and arcuate; antennæ longer and slender, the last three joints not notably enlarged or elongate, but differing in form and color from those which precede . **Spondium** n. g.

Appendage of the tarsal claws very slender, acutely pointed at tip; antennæ very long and slender, the last three joints greatly elongated, but not at all broader . . . . . **Typitium** n. g.

Tarsi stouter and shorter, the penultimate joint quadrate, feebly bilobed and densely pubescent beneath, the claws subevenly arcuate, not at all pectinate within and non-appendiculate . . **Drachylis** n. g.

The genus *Cephaloon* has for its type *lepturides* Newm., which is distinguishable at once from any other species of the family by its short clavate antennæ. It inhabits the lake regions of North America.

The species of *Sponidium* are somewhat numerous, and are exclusively western, inhabiting the true Pacific coast faunal province. Those before me may be separated by the following characters from the female throughout :

Eyes separated on the front by about their own width; antennæ much longer than the head and prothorax together, the eighth joint but little longer than the ninth. Washington (State) . **tenuicorne** Lec.

Eyes separated on the front by very much less than their own width; antennæ but little longer than the head and prothorax, with the eighth joint generally much longer than the ninth.

Head shorter, the basal part, including the eyes, distinctly wider than long, the distance, from a vertical viewpoint, from the posterior limit of the eyes to the neck but little greater than the distance from the same point to the inner limit of the eye; prothorax but little longer than wide, broadly impressed along the middle anteriorly. British Columbia (Caraboo District) . . **piceum** Horn.

Head more elongate, the basal part as long as wide, or very nearly; distance from the posterior limit of the eyes to the neck much greater than to the inner limit of the eye; prothorax distinctly longer than wide, generally unimpressed.

Neck broader, as wide as the interantennal distance, the nuchal constriction nearly straight across the dorsal surface. Idaho.

**ornatum** Csy.

Neck more slender, distinctly narrower than the interantennal distance, the nuchal constriction strongly arcuate.

Tempora straight; distance from the epistomal suture to the eyes almost as great as the length of the epistoma; body testaceous, the elytra black throughout. Coast regions of middle California.

**bicolor** Horn.

Tempora broadly and just visibly sinuate; distance from the epistomal suture to the eyes much less than the length of the epistoma; elytra generally pale, with the suture narrowly blackish. Rocky Mountains . . . . . **versicolor** Csy.

A specimen of *versicolor*, sent recently by Mr. Fuchs, is labeled "British Columbia (Caraboo District)." The species may possibly extend along the Rocky Mountains as far to the southward as Colorado.

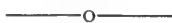
*Cephaloon unguolare*, of LeConte, is the type and only species of *Typitium*; it is of unusually slender form and occurs in the northern Atlantic regions of North America.

The unique type of *Drachylis* may be described as follows from the female :

***Drachylis simulans*** n. sp.—Form as in *Sponidium bicolor*, but slightly broader across the humeri, rufo-testaceous throughout, the elytra and metasternum black; pubescence minute, pale, decumbent and dense as usual. Head elongate, broadly convex, minutely, closely punctulate, the eyes separated on the front by very nearly their own width; palpi and antennæ missing in the type. Prothorax slightly elongate, of the usual campanulate form, with everted and acute basal angles; median line very feebly impressed near the middle; surface convex and minutely, closely punctulate. Scutellum rufous, rather pointed behind. Elytra three times as long as wide, two-fifths wider than the prothorax, the humeri slightly prominent, but rounded; sides more rapidly convergent and rounded toward tip, the individual apices rounded; disc minutely, closely punctulate, each elytron with two feeble, oblique ridges toward base; suture minutely margined; fifth ventral with a small, rounded notch at apex. Legs long and slender as usual, the tarsi short. Length 12.0 mm.; width 3.1 mm. California (Placer County).

The possession of thick and rather short tarsi, with absence of unguis and pectination, renders this species profoundly different from the others of the family, and, in view of the extreme similarity to *Sponidium bicolor* in outward habitus, is indeed remarkable. The resemblance is so great as to have deceived Dr. Horn, who, upon cursory examination, placed the type example—kindly lent me by Mr. Fuchs—with typical individuals of his *bicolor* from the coast regions of the State (Proc. Cal. Acad. Sci. 2, vi, p. 381).

The general characters of the family have been given in some detail by the writer (Ann. N. Y. Acad. Sci. ix, p. 649). The paper of Dr. Horn, above referred to, was unknown to me at that time, and I am glad to find, from the types communicated by Mr. Fuchs, that there has been no confusion and redescription of species, the two described by me being amply distinct from those of Dr. Horn made known so short a time before.



## RECOLLECTIONS OF OLD COLLECTING GROUNDS.

By H. F. WICKHAM, Iowa City, Iowa.

### V.—THE COLORADO DESERT AND ITS ENVIRONS.

Along the boundary between California and Arizona lies a great valley traversed by the lower Colorado River. It is elevated but a few hundred feet above sea-level and is bordered on each side

by vast tracts of desert sand or hard-baked mud, with an occasional mountain chain raising jagged, irregular black peaks in the distance. The valley itself, in the immediate vicinity of the river, is more or less cut up by little sloughs or ditches, with a growth of willows along their banks, and the native Indians (Mojaves and Yumás) are able to produce crops of beans, melons and corn by irrigation. Except in close proximity to water the vegetation is of the dry, scrubby character peculiar to the southern part of our arid Sonoran region—the mesquite and screw-bean being about the only plants which can be said to attain the dimensions of trees. An occasional pond of alkaline water fills some depression, and during the driest weather wide stretches of mud lie between the banks marking the bed of the river and the edge of the stream itself.

The heat of this low-lying area is very great, although the drying winds from the adjacent deserts reduce the humidity and thus lessen liability to sunstroke. Still, when one is collecting in the thickets margining the water's edge, where no breeze is stirring, the sweat pours off in streams at the least exertion. When in the open an umbrella should be used as a protection. I have no means of securing any official data as to temperature, but have seen the thermometer standing, during an August afternoon, at  $120^{\circ}$  in the shade. On another occasion I noticed that it indicated over 100 degrees in an adobe house, about sunrise—so it had probably not gone lower, in the building, through the night.

The valley is crossed by the Southern Pacific Railroad at Yuma, and again by the Atlantic and Pacific at The Needles, about one hundred and fifty miles farther north, measuring directly across country. At the time of my visit a steamboat plied between these and other points. Comparatively little of the population is white, the majority being Indians or "greasers," as the mixed-blood Mexicans are called.

My first trip to the region was made in 1888, when, coming from the adjacent portion of Arizona, I arrived at The Needles early in August and remained for the few days necessary in making a cursory examination of the coleopterous fauna. The altitude, at the railroad station, is about five hundred feet. The river bottom is broad and grown up in places with weeds higher than a man's head. Hot winds, almost like draughts from a



furnace, come from the desert which rises in ridges to the west, and the rough pinnacles of The Needles Mountains lift—a black image of absolute desolation—to the southward. Not a promising ground surely, nor one in which a collector might look for much physical enjoyment to offset any failings in luck.

The season, also, was far advanced, but still the results of my stay were not to be despised. By rising before the sun I found it easy to get numbers of a fine green Buprestid, *Gyascutus planicosta*. It was abundant on a common shrub with small, thick, glossy leaves, and a sticky surface. This bush grew in large patches on gravelly flats, out of reach of any freshet from the river. Before the sun warmed the beetles into activity their capture was easy, but in the heat of the day it was almost impossible to approach them, since they took flight at such slight alarm. Beating bushes of other sorts brought me a great lot of *Hemiptychus* belonging to an undescribed species. They are of a bleached appearance in common with some other beetles of this ill-favored spot. *Ctenobium plumbeum* occurred with it, and in the same company I noticed *Cybocephalus californicus*, *Exochomus marginipennis*, *Hyperaspis lateralis* and *Coccinella abdominalis*. *Leguminosæ*—the screw-bean and its kind—yielded some *Tychius setosus* and an Apion, which, I suppose, is *ventricosum*.

Search along the river banks and on the margins of standing pools in the bottom-lands was productive of some interesting forms. *Cicindela tenuisignata* was tolerably abundant on alkaline mud, not a very convenient place for working with a net since it soon becomes clogged up. Over the shores run dozens of the little ant-like Carabid, *Ega letula*, while in burrows, safely concealed, lie *Clivina dentipes* and *Dyschirius analis*, and these must be drowned out by flooding their dwelling. Under logs in damp spots I took *Chlœnius ruficauda*, easily recognized by the reddish elytral tips. In like situations occur *Tecnophilus croceicollis*, *Tetragonoderus pallidus*, a number of *Brachinus*, several *Scarites subterraneus*, of the small form called *californicus*, and one or two *Thalpius hornii*. Other species, mostly small and inconspicuous, are not wanting. On the edges of the water in a shallow well, such as the Indians make, I took a few *Tetracha carolina*. In ponds water beetles were plentiful—*Berosus subsignatus*, *B. infuscatus*, *Tropisternus limbalis*, *Hydrophilus triangularis*, *Ochthebius lineatus*, *Cœlambus medialis*, *Laccophilus*

*mexicanus*, *Coptotomus interrogatus* and *Cybister explanatus*. I have always thought this *Cybister* seemed to move more lazily than any of our large northern water-beetles.

Under ties and other railroad rubbish were to be found some very fine Tenebrionidæ, notably *Eleodes armata*, *Asida confluens* and *Cryptoglossa verrucosa*; *Notibius puberulus* and *Eurymetopon rufipes* were to be seen occasionally, but not in any numbers. I had expected to find the family well represented here, but my hopes were unfulfilled, still it is quite likely that more might be taken during the Winter. *Sphenophorus vomerinus* (var. *baridioides*) was seen once, a small colony having headquarters under a log near the river. *Atænius californicus* was the only common Scarabæid, though I came across two or three *Orsonyx anxius* and a *Polyphylla cavifrons*.

The most interesting task was catching the beautiful large click-beetle, *Chalcolepidius webbia*. This insect reaches a length of nearly an inch and a half, and is bluish with a broad cream-colored border. During the day it reposes on willows, usually too high up among the branches to reach by hand and the trees are too large to admit of the use of the umbrella or beating-net. In consequence it becomes necessary to climb for them, care being taken not to shake the trunk too much or the beetles take alarm and fly—first dropping a short distance—or else fall to the ground, where they are likely to be lost among the weeds. The more pains have to be taken because of the wasps building their nests in these same trees and they do not like intruders. Since few of the trunks are more than four inches or so in diameter it is no play to ascend them in a broiling sun.

My entomologizing along the river did not attract so much attention from the Indians as might be expected, probably because they have an inclination in that direction themselves. They pursue and catch the larger Acridiidæ, presumably for use as food, since I noticed that they placed them in receptacles as if for preservation. As this catching of locusts was done by adults it can hardly be considered simply a sport.

A rather remarkable effect of the extreme dryness of the air manifested itself during the preparation of insects after returning from the field. Usually, I empty a bottle of its contents at once and mount, or otherwise treat, the specimens at leisure, but here the hot winds dessicate them so rapidly that only a few could be exposed to the air at a time, otherwise those last handled would become brittle (in only a few minutes) and break at a touch.

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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PHILADELPHIA, PA., OCTOBER, 1898.

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WE must again remind some of our subscribers that it costs money to publish the NEWS and they cannot expect us to send it to them gratis. Indeed, it is dishonest to take a journal from the post-office and not pay for it. If you do not want the NEWS frankly say so, and then we will know where we stand. We do not wish the NEWS to share the fate of "The Brooklyn Bulletin," "Papilio" and "Entomologica Americana," which are now memories of the past. One dollar a year is a small sum, and anybody who does not take one dollar's worth of interest in Entomology had better drop natural history.

"Before this meeting Papilio, so far as its present management was concerned, was doomed. An appeal to its subscribers, two months before, not for alms, but for money justly its due, had been answered by the receipt of the money owed it by three subscribers; in other words *the princely sum of six dollars* had been added to its treasury, though much over \$150.00 was needed, and \$200.00 was due,"—Editor "Papilio" 4, 187, 1884. *Then it died.* Then came "Entomologica Americana" and existed awhile *and then it died.* Where is the fault? What is the trouble? Shall it be said of ENTOMOLOGICAL NEWS, in the near future, *and then it also died?*

THE place of the lamented Dr. Lintner as entomologist of the State of New York has been filled by the governor by appointing to that position Mr. Mark Vernon Slingerland.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

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Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

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Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

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**Crude Petroleum as an Insecticide.**—The use of kerosene against insects naturally turned attention to other oils of the same class and to different grades of the same oil. Experiments were made, therefore, with a number of them which have never been recorded, and as they all resulted in failures, probably never will be. The use of the crude petroleum was suggested to me by Mr. Lafayette T. Schanck, one of our Monmouth County fruit-growers, because he had employed it for many years in destroying lice on stock and for various garden insects. He claimed that it was as good an insecticide as kerosene and much less violent in its action on the subject, while kerosene would remove the hair from most of the animals to which it was applied, crude oil never did, but gave a better and cleaner coat, inducing a new and vigorous growth of hair on bare patches. His experiments on vegetation were too indefinite to quote, but there was enough in it to make me determine to try it if possible. In January I induced a grower to risk a row of dwarf pears, very badly infested with San José scale for dangerous experiments, and one of these trees was painted from the base to the tip of the twigs with crude petroleum. The application was as thorough as it could be made with a brush and the tree turned a dark chestnut-brown at once. A few days afterward an examination on a bright sunny day showed the surface studded with drops of water that had condensed on it. Everything was penetrated by the oil and the tree was considered as hopelessly injured. The scales were simply soaked and great patches could be lifted up and removed without effort. In due season, however, this tree as well as those surrounding it showed the swelling leaf buds, and the foliage, as it developed, was even better and richer in color. Fruit buds were also developing normally, and there was nothing in the appearance of the tree to indicate that anything that could be considered an heroic application had been made. The twigs and all the wood, however, retained the oily appearance, on which a coating of dust was now forming, so that the tree looked almost black. Fruit set normally and a fair crop; a little less perhaps than on some other trees, and there were a few dead spurs on the tree; but as this was one of the scaliest trees in the orchard, and as others, no worse, died in part or entirely, although untreated, it would be unsafe to charge this to the petroleum. It was anticipated that the August sun would drive the oil into the tree and kill it, but even this was not the case, and up to the date of writing this tree is one of the most vigorous in the orchard, while the fruit is ripening normally, the pears—Duchesse—as perfect as any of their kind. The tree has made a better growth, with longer shoots, than any

other near by, and so far as appearance can be relied upon is perfectly healthy. The oil is yet apparent where it was applied, but beneath it the bark is perfectly normal. On the trunk and larger branches the bark which had become bound from the scale injury has split, and new, healthy bark is forming at the edges. Altogether, the tree looks as if it had received a new lease of life and seems in much better condition than ever before.

As to the scale—that has disappeared almost entirely. There were on September 14th perhaps two dozen scales on all the fruit on the tree, and there were a few on the new wood, but as all the surrounding trees are scaly and a scaly branch from a Standard partially overhangs the dwarf, these probably came on. A few larvæ attempted to set on the oily twigs, formed the white scale and died. Not a single scale beyond this stage was found on any of the treated twigs.

When it was realized that the Winter treated tree was not dead, but was even making a good start, about a dozen similar trees were sprayed with the crude oil when already leafed out and partially in bloom. The spraying was done from a wagon, one side being treated one day and the other several days later when the wind shifted. The spraying was very thorough each time, done with a McGowen nozzle and on each tree a few shoots near the centre were killed. The remainder of the trees developed normally and the fruit on September 14th was all that could be desired. The apparently stimulating effect of the oil was also noticeable here and the trees are now among the best of their kind instead of the poorest. The very worst infested trees were chosen for this experiment and the effect on the scale was all that could be desired.

The largest experiment was on an orchard of 200 Ben Davis apples eight years out and in fine general condition. This entire orchard was sprayed with crude oil April 14 to 22, and was as fully loaded with apples, September 10, as any similar untreated trees in the vicinity.

Other experiments need not be detailed here at present since my intention is not to recommend the crude oil unreservedly, but to bring it to the attention of entomologists as offering a good chance for study. All my experience points to this as less injurious to vegetation than kerosene, as spreading even more thoroughly and as at least as good an insecticide.

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## Notes and News.

### ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

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**MULES IN TROUSERS.**—George Finney, an express wagon driver, has clothed his mules' forelegs in trousers. In speaking of it he said that flies bothered the forelegs of a four-footed animal more than they did the hind limbs, and he, therefore, having some respect for the comfort of his faithful servants had made a pair of trousers to protect them from the

pests. The trousers were supported by suspenders passed up over the backs of the animals.—*Nebraska State Journal*.

JOHN HABBERTON states that mosquitoes are extremely frightened by dragonflies and will not come within yards of them. He says that one or two dried dragonflies suspended from fine silk under the roof of an open porch infested by mosquitoes will scare all of the little pests away, and they will not come back while the dragonflies are there. This, he says, he has tried with surprising results. It is a well-known fact that dragonflies are predatory and voracious insects, and that they subsist largely upon gnats, midges and mosquitoes, and it is but natural that the mosquito, who is a wise insect, should regard the "spindle," "darning-needle" or dragonfly, as the small bird regards the hawk.

NOTE ON ANOPHTHALMUS.—A large series (175 specimens) of these interesting blind Carabids, collected in Mammoth Cave, Kentucky, by R. Ellsworth Call and myself, were of four species, viz.:

<i>A. tellkampfi</i> Erich. . . . .	80
<i>menetriesii</i> Mots . . . . .	91
<i>striatus</i> Mots. (= <i>interstitialis</i> Hüb.) . . . .	3
<i>audax</i> Horn . . . . .	1

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175

*Menetriesii* is the most variable in size, and some specimens show traces of pubescence. Each of these species is easily separated from the others by the shape of the thorax. The type of *audax* was from Ronaldson's Cave, Kentucky. It has the thorax wider than long and nearly as wide at base as apex. It is a small species. This is, I believe, the first record of the occurrence of *audax* in Mammoth Cave. I searched the caves in Carter County, Kentucky, viz.: "Bat," "X," "Laurel" and "Saltpetre" Caves, but failed to find *Anophthalmus* in either of them.—CHARLES DURY, Avondale, Cincinnati, Ohio.

THERE are at present 2864 volumes in the library of the American Entomological Society, including 111 volumes of pamphlets averaging fifteen titles to the volume. The various departments are represented as follows: Journals, 1436; Coleoptera, 389; General Entomology, 341; Lepidoptera, 214; Economic Entomology, 122; Hymenoptera, 101; Diptera, 86; Miscellaneous, 61; Hemiptera, 49; Orthoptera, 40; Neuroptera, 25. This represents an increase of nearly 100 per cent since 1888, when the total number of volumes was 1445.

In the library of the Academy of Natural Sciences of Philadelphia there are 1221 volumes, exclusive of journals, and 1188 pamphlets, devoted entirely to Entomology. The pamphlets form 77 additional volumes.

While the books of one library are partially duplicated by the other, yet it is safe to say that the foremost collection of entomological books in America is to be found in the building of the Academy of Natural Sciences of Philadelphia, where both libraries are situated.—W. J. FOX.

MAY 14th a pair of *Leucarctia acraea* were captured *in coitu* on a plum tree. They were put in a breeding-cage, and on the 15th and 16th the female laid 728 eggs in three patches. One on the day of the 15th, one that night, and one the following day. They were laid in almost a square. The rows of eggs were closely placed beside each other, but scarcely touching, while the eggs in each row were apparently joined. In size about mm. and about globular shape; color lemon-yellow and darker to a deep yellow; changed fast with age to a deep blue before hatching. All hatched on the morning of May 30.

May 28 a stem of dead plum was found containing 598 eggs, all in one patch and in five rows lengthwise of the stem. Commenced hatching May 30; thirty-three failed to hatch. In both cases the young larvæ fed on the empty egg-shells first, cleaning them off to the surface of the wood. They were afterward fed on plum and a number were grown to maturity.—E. G. TIRUS, Fort Collins, Colo.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

**4.** The Canadian Entomologist, London, Ont., '98.—**5.** Psyche, Cambridge, Mass., Sept., '98.—**7.** U. S. Department of Agriculture, Division of Entomology, Washington; circulars, second series, '98.—**8.** The Entomologist's Monthly Magazine, London, Sept., '98.—**11.** The Annals and Magazine of Natural History, London, Sept., '98.—**13.** Comptes Rendus. Societe de Biologie, Paris, July 30, '98.—**26.** Appleton's Popular Science Monthly, New York, Sept., '98.—**40.** Societas Entomologica, Zurich-Hottingen, '98.—**42.** Journal of the Linnean Society, London, '98.—**45.** Deutsche Entomologische Zeitschrift, '98, I Lepidopt. Heft, Berlin, etc., Aug. 10.—**46.** Tijdschrift voor Entomologie, xli, 1. The Hague, July 30, '98.—**81.** Biologisches Centralblatt, Erlangen, '98.—**86a** Annales, **86b** Bulletin, Société Entomologique de France, '96. Rec'd. Aug. '98.—**87.** Revue Scientifique, Paris, '98.—**88.** Actes, Société Linneenne, Bordeaux, lii, '97.—**89.** Zoologische Jahrbücher, xi, 5, Jena, Aug. 15, '98.—**90.** Gartenflora, Berlin, '98.—**91.** Il Naturalista Siciliano (n. s.), ii, 5-8, Palermo, July 15, '98.

**The General Subject.**—Beecher, C. E. The origin and significance of spines: a study in evolution (cont.), figs., American Journal of Science, New Haven, Sept., '98.—Bignell, G. C. Photographic en-

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**Economic Entomology.**—Chittenden, F. H. A new squash bug, **4**, Sept.; The larger apple-tree borers, figs., **7**, No. 32, July 1.—Felt, E. P. Elm-leaf beetle in New York State, figs., 5 pls., Bulletin New York State Museum, v, 20, Albany, June, '98.—Frank and Krüger, F. The European allies of the San José scale, **90**, Aug. 1.—Howard, L. O. Remedial work against the Mexican cotton-boll weevil, **7**, No. 33, July 1; House flies, figs., **7**, No. 35, July 11.—de Joannis, J. Carnivorous larvæ, **87**, Aug. 13.—Kenyon, F. C. Abstracts of recent publications, Experiment Station Record x, 1. U. S. Dep't Agric. Washington, '98.—Klein, O. *Vedalia cardinalis* as opponent of *Icerya Purchasi*, **90**, Sept. 1.—Marchal, P. On two new Cecidomyids living on the potato and on the Hedera, figs., **86b**.—Marlatt, C. L. House ants, figs., **7**, No. 34, July 6; The true clothes moths, figs., **7**, No. 36, July 18.—Mayet, V. Note on *Margarodes vitium* Giard, **86b**; The scale-insect of the vines of Chili, *Margarodes vitium* Giard, **86a**, 3, May, '97.—Placzek, B. Protection of birds or of insects? Verhandlungen des naturforschenden Vereines in Brünn, xxxv, '97.—Vayssière, A. Description of *Pentaphis marginata* Koch, an Aphid which attacks wheat, 1 pl., Annales de la Faculté des Sciences de Marseille, viii, '98.—Wilcox, E. V. The internal chicken-mite (*Cytodites nudus vizioli*), Journal of Comparative Medicine and Veterinary Archives, Philadelphia, August, '98.

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**Neuroptera.**—Barrois, C. et al. Observations on the phenomena of flight of dragonflies, **86b**.—Currie, R. P. New species of North American Myrmeleonidæ, iii,\* **4**, Sept.—Haviland, G. D. Observations on Ternites, with descriptions of new species, 4 pls., **42**, Zool. xxvi, 169; April 1, '98.—Meunier, F. The fossil Agrionidæ of the Museums of Munich and Harlem, 3 pls.; Note on some insects of the schists of Solenhofen, 1 pl., **86a**, 1, Dec., '96.—Williamson, E. B. September dragonflies of Round and Shriener Lakes, Whitley Co., Indiana, 22nd Annual Report, Dep't of Geology and Natural Resources, Indiana, '97. Indianapolis, '98.

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Gauckler, H. Experiments with low temperatures on *Vanessa* pupæ, **45**.—Grote, A. R. Note on the diurnals, **4**, Aug.—Hulst, G. D. Descriptions of new genera and species of the Geometrina of North America,\* **4**, Aug.—Lathy, P. L. A new species of *Sphænogona* from Jamaica, **8**.—Lucock, F. Food-plant of *Euphanessa mendica*, **4**, Sept.—Moffat, J. A. *Deidamia inscripta* Harr. **4**, Aug.—Piepers, M. C. New observations on the flights of Lepidoptera, *Natuurkundig Tijdschrift voor Nederlandsch-Indië*, lvii, Batavia and The Hague, '98; The phylogeny of the colors of the Pieridæ, *Tijdschrift der nederlandse Dierkundige vereeniging* (2), v, 2-4, Leyden, June, '98.—Staudinger, O. Some new South American forms of *Papilio*, **45**.—Thierry-Mieg, P. Descriptions of nocturnal Lepidoptera, **86b**.—Sykes, M. L. Natural selection in the Lepidoptera, 8 pls., Transactions, Manchester Microscopical Society '97, July 16, '98.

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## Doings of Societies.

At the meeting of the Feldman Collecting Social, Prof. J. B. Smith described the habits of the larvæ of *Cicindela generosa*. Their burrows extend from 15 inches to 2 and 3 feet into the ground, and is a long, goose-necked affair opening into a pit, which serves as a trap for their prey.

Mr. Wenzel said that the larvæ of *C. dorsalis* tunnels a straight burrow.

Prof. Smith gave further results of his examination of bee-cells. Dipterous parasites had been found therein. *Andrena*, of which three species had been observed, showed that each species has characteristic burrows. Some species extend their burrow for several feet and build a cell at the bottom, which is covered, and another one built further up, until the burrow is lined with numerous cells. The newly-hatched imago must, therefore, in some instances, dig a considerable distance before reaching the surface of the ground.

Dr. Henry Skinner showed unidentified larvæ from stems and leaf-petioles of sugar maple; it is very destructive, causing the leaves to fall in large numbers.

Mr. C. W. Johnson exhibited *Seroomyia bifasciata*, *S. militaris*, *Brachyopa notata* and a species of *Helophilus* from North Mountain, Pa., all of which were not recorded hitherto from Pennsylvania. The *Helophilus* may be *H. porcus* Walker.

The date of meeting was changed from the second Tuesday to the third Wednesday of each month.

WILLIAM J. FOX, *Secretary*.

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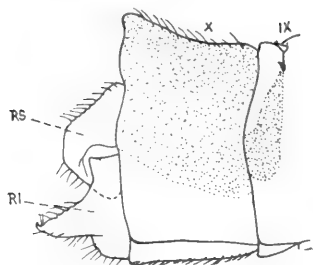
## OBITUARY.

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ERNEST CANDEZE, M D., F. E. S., the learned monographer of the Elateridæ, an accomplished entomologist and writer, died at Liège on June 30th, after a short illness from angina pectoris, in his 72nd year, deeply mourned by a large circle of personal friends.—*Entomologist's Monthly Magazine*.

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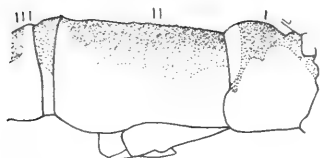
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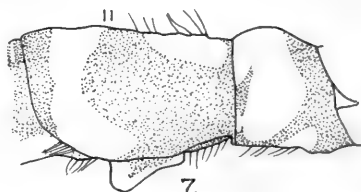
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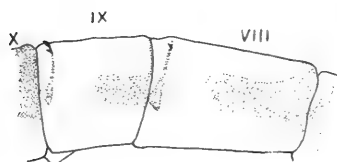
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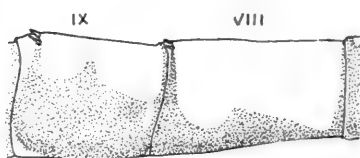
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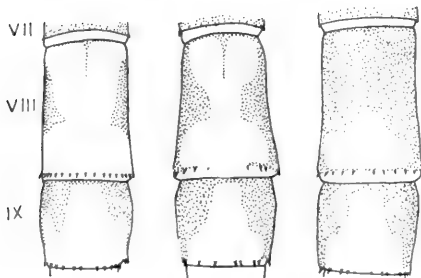
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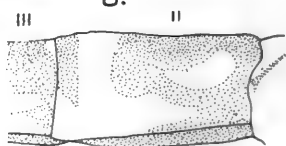
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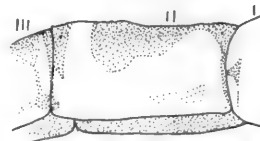
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1-4 ISCHNURA VERTICALIS.

5-13 I. KELLYCOTTI.

# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. IX.

NOVEMBER, 1898.

No. 9.

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### A NEW SPECIES OF ISCHNURA. (Order Odonata.)

By E. B. WILLIAMSON, Carnegie Museum, Pittsburgh, Pa.

***Ischnura kellicotti*** n. sp. ♂.—Upper part of head and eyes, and antennæ black; postocular spots blue, large, rounded and not connected; genæ blue; frons blue, black above and at the middle; clypeus black above, blue below; labrum blue, black at base; head (except around the occipital foramen) and eyes below pale blue.

Dorsum of prothorax black with the following blue: a transverse line on the anterior lobe; two round spots on the middle lobe; and the posterior margin of the posterior lobe. Propleuron blue. Thorax blue, black as follows: a wide mid-dorsal stripe; a humeral stripe which widens suddenly just posterior to the mesinfraepisternum, which it covers; a very narrow interrupted line on the posterior half of the first lateral suture; a narrow stripe on the second lateral suture, widening anteriorly to cover the metinfraepisternum; a line connecting these stripes posteriorly; under parts dark.

Wings hyaline; antecubitals 2, postcubitals 8; pterostigma: of front wings black ventrally, blue dorsally with the inner angle black and the outer angle pale; of hind wings pale brown. Legs black superiorly, blue and pale inferiorly.

Abdomen above metallic or bronze black, with blue as follows: a wide apical ring on 1; a large cordate basal spot and a wide apical ring on 2, the extreme base and apex of the segment black; pale narrow inter-

rupted basal rings on 3-7; an apical ring widening into a quadrate median spot on 7; all of 8 excepting a very narrow basal ring; all of 9, the blue narrowed at either side near the middle; two small round basal spots on 10, and the extreme tip of the elevated posterior margin of the segment which is also blue underneath. Sides of 1 and 2 blue and black; of 3-7 and 10 brownish and yellowish with blue tinges; of 8 and 9 black bordered below with blue. Dorsal posterior margin of the tenth segment moderately elevated and produced, the apex scarcely bifid.

Abdominal appendages black, resembling those of *I. verticalis* Say, but slenderer and longer. Superior appendages lamellate, sinuate, about half as long as the tenth segment, rounded triangular in form, the depth at base equal to the sides; the upper, outwardly rolled half scimitar-shaped in profile, and lying above and outside of the upper process of the inferior appendage; the lower, inwardly rolled half lying inside of the upper half of the inferior appendage. Inferior appendages longer than the superior; the lower outer two-thirds produced into a slender process curving downwards, outwards and inwards, the extreme apex turned upwards and inwards and tipped with a small shining tooth; the upper third produced upwards and backwards into a triangular lobe, about one-fifth as long as the lower process.

♀.—Similar to the male. Frons not black at the middle; postocular spots larger. Median lobe of prothorax with an additional small geminate spot in the middle. Thorax the same; wings hyaline; antecubitals 2, postcubitals 9; pterostigma on all the wings pale brown. Abdomen with the blue on 1 and 2 more extensive, on 2 the black is reduced to a triangular spot and narrow basal and apical rings; the apical ring on 7 not widened into a spot; 8 with a basal oblong spot on either side of the median line, and a dome-shaped basal spot, the double apex directed anteriorly; the blue on 9 much narrowed, the black extending across the dorsum basally; 10 narrowly blue. Sides of abdomen darker than in the male; 3 and 4 with a distinct, and 5 with an indistinct blue apical spot; 8 and 9 entirely black.

Valves bluish, the apex and vulvular process light colored, extending beyond the tenth segment. Abdominal appendages pale. The ventral apical spine on the eighth segment is short and acute, less prominent than in *I. verticalis* Say.

Length of abdomen ♂ ♀ 23 mm.; hind wing ♂ 16 mm., ♀ 18 mm.

Round and Shriner Lakes, Whitley County, Indiana: September 2, 1897; June 7, June 24 and July 21, 1898. Named for Professor D. S. Kellicott, who first called attention to this species (footnote † to page 404 in "September Dragonflies of Round and Shriner Lakes, Whitley Co., Indiana," by E. B. Williamson, Indiana Geological Report for 1897).

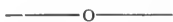
This species has been taken in New Jersey by Mr. Calvert. He has kindly examined one of my male specimens, and it is by



his advice that I have referred the species to the genus *Ischnura*. I am doubtful about the female, described by the late Professor Kellicott in the footnote mentioned above, being an orange form. In that description the yellow rings on 3-7 are erroneously referred to as apical.

The following variations in the color of males of this species may be noted. The relative amounts of blue and black on frons, clypeus and labrum are variable. The two spots on the median lobe of the prothorax may be absent. The mid-dorsal and humeral stripes may be widened until the included blue is reduced in width to one-third the humeral stripe. The black on the dorsum of 2 may be reduced to a transverse line, or, on the other hand, the cordate spot may be reduced to a geminate spot, and the apical ring be very much narrowed. On 7 the apical spot may be separated from the apical ring. The narrow basal rings on 3-7 are always pale, and frequently yellowish in color. On 10 the two round blue spots may be wanting, may be of unequal size in the same specimen, or there may be four present, the additional ones being placed posteriorly and laterally to the other two. A teneral male was dull yellow and black in coloration, and had the pterostigma of all the wings pale brown.

In the females there is great variation in segments 1 and 2, and 8 and 9; the dorsum of 8 and 9 may be entirely blue, narrowed at the middle on 8, and at the base on 9.



## FURTHER NOTES ON THE NEW DRAGONFLY ISCHNURA KELLICOTTI. (Odonata).

By PHILIP P. CALVERT.

(Supplementary to the preceding paper by Mr. E. B. Williamson.)

On August 28, 1898, at a pond about one mile east of Millville, New Jersey, where the road to Cumberland crosses the small stream known as Petticoat Branch, I observed a small dragonfly flitting a few inches above the water's surface from lily-pad to lily-pad. Its size and color suggested *Enallagma geminatum*, but, wishing to be sure, I captured an individual. Then I saw that I had a male *Ischnura* of a species unknown to me. I at once turned my attention to searching for the other sex, and in less than two hours had obtained six males, four black females and three orange females. So closely did they keep themselves

to the water and floating vegetation, that I was able to catch them only by dropping the net over each individual, sinking it below the water and withdrawing the insect with my fingers while it was still immersed.

On my return to Philadelphia, Mr. Williamson's paper on the Dragonflies of Round and Shriners Lakes was awaiting me. The brief footnote on an "Enallagma sp. (?)", which he has quoted, seemed to apply to my orange *Ischnura* females. As the result of some correspondence to which this idea led, Mr. Williamson kindly consented to my request to send a description of the species, based on material more lately obtained by him, for publication in the NEWS, with the understanding that I should supplement his paper with any additional notes which my New Jersey specimens might suggest. These notes follow:

♂.--The two round blue spots on the median prothoracic lobe are absent in five of the six males. There is no apical blue spot on 7 in one male, while in four others it is represented by a pair of small, isolated spots. There are no basal spots on 10 in five males. One individual, apparently fully colored otherwise, has the pterostigma on *all* the wings pale brown. Abd. 19 mm., hind wing 13-12.5 mm.

Black ♀.--The blue postocular spots are prolonged backwards and downwards on the rear of the head. The two round blue spots on the median prothoracic lobe are very small in one female, while the geminate spot on the same lobe is wanting in two females. There is no apical spot or ring on 7, nor spots on the sides of 3-5. Some variations in the markings of 2 and of 8 and 9 are shown in Pl. XI, figs. 10-13, but a great extent of black on 2 is not correlated with much or little black on 8 and 9, and *vice versa*. Abd. 18.5-19, h. w. 13.5.

Orange ♀.--Like the black female but with orange replacing the blue. No geminate spot on the median prothoracic lobe. Very little dark color on the pectus. The black markings on 2 show the same variations as in the black ♀; on 8 and 9 they are similar but of less extent, especially on 9, although this may perhaps be due to immaturity. Abd. 18.5-20, h. w. 13-14.

♂ ♀.--Front wings: postnodals 7-8 (♂), 8-9 (♀) nodal sector arising between the third and fourth or near the fourth. Hind wings: 5-7 postnodals, nodal sector arising at the third or a little in front thereof.

From the two previously known Eastern species of *Ischnura*, *verticalis* Say and *Ramburii* Selys, *Kellicotti* differs:

*In both sexes* by the greater extent of black on the rear of the head, by the wider black stripe on the second lateral thoracic suture, by the extent of the black markings on 8 and 9.

*In the male* by having the greater part of the upper surface of the pterostigma of the front wing *blue*, and by the shape of the terminal abdominal appendages, especially the hook-like form of the superiors (viewed from above, Pl. XI, fig. 6).

*In the orange female* by the presence of a black band on the humeral suture (absent in *Ramburii* orange ♀), and the predominance of black on the dorsum of 2 and 3 (orange in *verticalis* orange ♀).

The nearest ally of *Kellicotti* is *verticalis* Say.

#### EXPLANATION OF PLATE XI.

- Figs. 1-4. *Ischnura verticalis* Say, 5-13 *I. Kellicotti* Williamson, n. sp.  
 Figs. 1, 5. Right side of apex of male abdomens and appendages. x 40.  
 Figs. 2, 6. Dorsal views of male terminal abdominal appendages. x 40.  
 Figs. 3, 7. Right side of second abdominal segments, males. x 27.  
 Figs. 4, 8. Right side of eighth and ninth abdominal segments, males. x 16.  
 Figs. 9-11. Dorsal views of eighth and ninth abdominal segments, 9 of an orange female, 10 and 11 of black females. x 12.  
 Figs. 12, 13. Right side of second abdominal segments, black females. x 18.  
 The stippling shows the position and extent of the black markings. I-X denote abdominal segments. RS right superior, LS left superior, RI right inferior, LI left inferior appendages. All the figures are from camera lucida drawings made from the New Jersey specimens.

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### INGUROMORPHA SLOSSONII Hy. Edw.

By HARRISON G. DYAR.

Seven years ago an article appeared in this magazine under the above heading, in which this species was referred to the synonymy. No one has questioned the conclusions there set forth; but about a year ago when rearranging the *Cossidæ* of the National Museum I found both sexes of *Cossula magnifica* Bailey. The sexes are exactly alike as in Dr. Bailey's figures. This at once upset the accepted synonymy; but I was not able, until very recently, to correct the matter fully, as I had no specimen of *slossoniæ* Hy. Edw. One has just been received collected by Mr. H. Schwarz at the Rancho Hanover, State of Vera Cruz, Mexico.

It appears that the two forms are not only specifically, but generically distinct, as the venation shows, and *Inguromorpha* will have to be restored to our lists. Mr. H. Edwards relied on Abbot's unpublished plates for authority in associating these moths as sexes of one species; but in these same unpublished

plates the author has associated together as sexes of one species *Natada nasoni* and *Apoda rectilinea*, and has put the wrong larvae to several other species of Eucleidæ, so that his authority is of little value.

The species will stand thus :

**INGUROMORPHA BASALIS** Walker.

1856—*Cossus basalis* Walker, Cat. Brit. Mus., vii, 1523.

1888—*Inguromorpha slossonii* Hy. Edw., Ent. Amer., iii, 183.

1891—‡ *Cossula basalis* Hy. Edw., ENT. NEWS, ii, 71.

Fore wings : vein 1 furcate at base, sinuate, joining vein 1c for its outer fourth ; veins 2 to 5 about equally spaced, remote from base of cell ; 6 below apex of cell ; 7 and 8 stalked from end of cell ; 9 from accessory cell ; 10 from accessory cell, touching 11, which arises from middle of cell ; 12 from base.

Hind wings : veins 2 to 5 as in fore wings, 4 and 5 from the same point ; 6 and 7 close together at apex of cell ; 8 remote from 7, joined by a strong cross-bar at the end of the cell ; frenulum moderate.

Legs short ; hind tibræ with apical spurs only ; ♂ antennæ bipectinated to the tip.

**COSSULA MAGNIFICA** Stecker.

1876—*Cymatophora magnifica* Streck, Proc. Ac. N. Sci. Phil., 151.

1882--*Cossula magnifica* Bailey, Papilio, ii, 93.

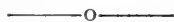
1891—*Cossula* ‡ *basalis* Hy. Edw., ENT. NEWS, ii, 71.

1894—*Cossula* ‡ *basalis* Neumoegen and Dyar, Journ. N. Y. Ent. Sc., ii, 163.

Fore wings : vein 1 furcate, free ; veins 2 to 5 about equally spaced, remote from base of cell ; 6 to 8 free, from the discal cell ; 9 and 10 stalked from apex of accessory cell ; 11 from accessory cell ; 12 from base.

Hind wings : veins 2 to 5 as on fore wings ; 6 and 7 from the apex of cell ; 8 remote from 7, free, stronger than 7, which fades out toward base.

Legs moderate ; hind tibræ with both middle and apical spurs ; ♂ antennæ bipectinated to the tip.



**A NEW HYPOPTA.**

By HARRISON G. DYAR.

*Hypopta anna* n. sp.—Lilacine gray, thorax and fore wings finely dotted with brighter scales ; a distinct, narrow, bent white fleck at the end of the cell on discal cross-vein ; an obscure, broad, dusky shade crossing the wing just beyond the fleck, broadening and reddish tinged on internal margin ; a few blackish strigæ, most distinct as double terminal dots on the veins, not forming reticulations. Hind wings dark ashen. Antennæ dark, the shaft scaled in gray. Expanse 29 mm.

One ♂, Miami, Florida ; type No. 4072 U. S. National Museum ; kindly presented to the Museum by Mrs. A. T. Slosson. A second specimen is in Mrs. Slosson's collection.

## TWO NEW SPECIES OF HESPEROCHARIS.

By W. SCHAUS.

**Hesperocharis jaliscana** sp. nov.—Wings white in the ♂, pale lemon color in the ♀; the primaries with the apex and outer margin above vein 3, suffused with black. Secondaries below bright yellow; a crimson spot at the base; a black spot below the cell; a costal and subterminal row of angular smoky spots. Ex. 50 mm.

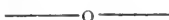
*Hab.*—Guadalajara, Mexico.

This species is allied to *H. Crocea*, Bates, though very distinct.

**Hesperocharis paranensis** sp. nov.—Wings white, tinged faintly with green; the outer half of costal margin finely black. Minute triangular black spots at the apex and along the extreme outer margin between the veins on the primaries. Underneath primaries whitish; the apex and costal margin yellowish; some minute black marginal marks. Secondaries below yellowish; a black point at the base, an antemedial, medial and postmedial irregular and angular black line broken by the veins; minute black spots in the extreme margin, between the veins. Ex. 35 mm.

*Hab.*—Castro, Parana.

This species is readily distinguished by its small size and broken lines on the secondaries below.



## ANOTHER YELLOW PERDITA.

By T. D. A. COCKERELL, N. M. Agr. Exp. Sta.

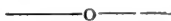
**Perdita wootona** n. sp. ♀.—Length about or nearly 6 mm. Resembles the ♀ of *P. luteola*, but a paler shade of yellow (to correspond with the *Mentzelia* flowers). A little black pigment behind the middle ocellus; and a short black stripe proceeding from each lateral ocellus, pointing in the direction of the centre of the eye. Hind margins of first two abdominal segments more or less (sometimes hardly) infuscated. Hind tarsi black, middle and hind tibiae with a black stripe. Second submarginal cell broader at top than in *luteola*.

*Hab.*—Five or six miles beyond Tularosa, New Mexico, on the road to the mountains, at flowers of *Mentzelia multiflora* or *wrightii*, end of August, 1897 (E. O. Wooton). \*

\*Mr. S. N. Dunning has sent me four samples of *Perdita wootona*, which he took at flowers of *Mentzelia* at Denver, Colo., July 20, 1897. The ♂, which is among them, differs from the ♀ in the orange flagellum (without any black). The dot (instead of stripe) before the eyes, and the absence of the black stripes extending toward the eye from the lateral ocellus. The abdomen is more convex, and deeper yellow.—T. D. A. C.

This pretty tree is named after Mrs. Wooton, who accompanied her husband on his recent collecting trip, and greatly assisted in getting together a set of New Mexico plants which will do much to advance the knowledge of the botany of this region. When *P. luteola* was discovered it seemed a remarkable instance of departure from the normal types of bee-coloration for protective purposes. The finding of *P. beata* gave us a second instance of the same sort, and now in *P. wootonæ* we have a third. It remains, however, to discover a pure white species visiting white flowers!

I notice (ENT. NEWS, 1897, p. 172,) that Mr. Robertson would refer my *Panurgus lustrans* to *Halictus*. I may as well publish the generic or subgeneric name, *Hemihalictus*, which I have had in MS for a long time. *Hemihalictus* has about the same relationship to *Halictus* that Mr. Robertson's *Parandrena* has to *Andrena*. In some of its characters it is like *Chilicola*, Spinola, but it is evidently distinct.



## A NEW PODURAN OF THE GENUS GNATHOCEPHALUS.

By F. L. HARVEY.

Generic characters as given by Mr. Macgillivray.

**Gnathocephalus aureo-fasciatus** sp. nov.—Body robust, broadest behind, pale purple, with the mesothorax and the last two abdominal segments pale orange, ornamented with beautiful tubercles, that are obtuse conical, becoming longer and more pointed on the posterior segments and armed with scattering long bowed, blunt pointed hairs, that curve backwards and are more abundant on the posterior segments; head small, nearly round, narrower than the first abdominal segment, depressed at the sides, center bearing a raised pentagonal plate, one of the angles of which points between the antennæ, the opposite side concave; eye spots dark, extending the whole length of the lateral sides of the pentagonal plate and located upon its sloping edge; back of the central plate on the head is an oblong transverse ridge or plate extending to the first segment; buccal cone stout, once and a half as long as the first antennal segment; antennæ short, stout, segments nearly equal, the first broadest, second slightly shorter with swollen sides, third and fourth about the same width, cylindrical, the terminal one slightly longer than the other segments and obtusely rounded at the end, all segments armed with tubercles and hairs and curved outwards, suture between third and fourth segments obscure; under side of abdomen and legs lighter, the under side of mesothorax, the second pair of legs and the ventral of the last two segments paler than the other portions, to agree with the corresponding lighter dorsal parts; legs stout, short, no tenent hairs, armed

with scattered bristles arranged in transverse rows. Claws short, furrowed beneath, swollen toward the base on the under side and armed on the edge with five bristles that increase in length outwards. A single claw, but at the base two tubercles the basal one longer and larger. See Fig. 1, Furcula short, stout, manubrium broad at base, rounded between the dentes, dentes and mucrones together about equal to the manubrium, dentes curved outward then inward, cylindrical, plain, curved inward at the tips, as shown in Fig. 3. Length of longest specimens 1.5 mm.

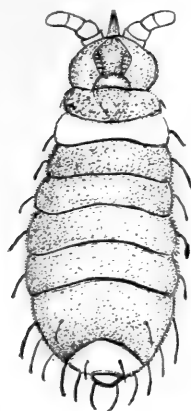


Fig. 1.



Fig. 2.

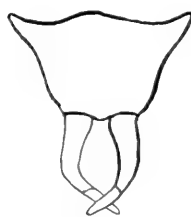


Fig. 3.

Measurements:—Total length 1.2 to 1.5 mm.; Antennæ .21 mm. ratio of joints 10:9:10:12; Buccal cone .08 mm., claw of foot .06 mm.; Furcula .26 mm., ratio of parts 3:2:1: nearly; Tubercles on sides of body about .005 mm.; Hairs on body of about .09 mm.

Described from five specimens found on a decorticated log in low damp woods, Orono, Maine, September, 1897, by F. L. Harvey.

*Remarks.*—A sluggish form that reminds one of *Aphoromma*. They live in the worm holes of decaying fallen trunks. As soon as the log was turned over, they became restless and crowded toward the worm holes and several disappeared before I could catch them. The species is evidently scarce as I have collected these small insects for several years and never saw this species before. I have visited the locality several times and have never been able to catch any more.

The species is easily recognized by the orange on the second and two posterior segments, giving the body a transversely banded appearance.

Description of figures.—Fig. 1 shows the dorsal aspect of the insect enlarged about 40 times; Fig. 2 represents the claw enlarged 637 times; Fig. 3 the furcula enlarged 100 times.

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—Ed.

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PHILADELPHIA, PA., NOVEMBER, 1898.

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**On Sending Insects by Mail or Express. For Professors of Entomology, Specialists, Experiment Station Entomologists, Beginners and Others.**

WE receive so many insects in a broken condition, especially those sent to the NEWS for determination, that we think a few words on packing and transportation will be appropriate. We also think we should receive some reward for our trouble in naming and not be compelled to drop the specimens in the waste basket. **Never send pinned or spread specimens in a single box without an outer cover.** Have the box which is to contain the specimens as light in weight as is consistent with strength; a good plan is to glue little square uprights in each corner of the box, and these will help support the lid and will stand great pressure. Have the box lined with **quarter-inch** cork, compressed cork or yucca pith. Drive the pins well in; should one heavy specimen become loose it will ruin all the rest. Have the box proportionate to the number of your specimens, and pin them as closely as you can without injury. This box should then be placed in a larger one and the space between the two filled all around with some springy material, such as hay, cotton, excelsior packing, etc., **loosely packed in.** **Don't** use an outer box **without having sufficient space between it and the inner,** as it is a waste of time and money and it will be useless. **Don't** pack the springy material so tightly between the boxes that it will do no good as a preventive of jarring.



Don't have the boxes come in contact at any point. An inch and a half space between the boxes should be the minimum allowable. If the specimens are many and the box large, send by **express**. The outer box may be card-board. When sending Coleoptera with heavy bodies or large moths, always secure the body by a wisp of cotton, which should be put on as follows: Take a wisp the required length and tease it out about one-half inch in width, run the pin through one end and give it a couple of turns around the pin so that it holds tightly and lies close to the place where the pin issues from the thorax, then bring it around the end of the abdomen and fasten to the pin above by a couple of turns. If the bodies are very large, as in the Sphinges, a pin should be placed on either side of the abdomen to prevent them swinging around on the pin. Always remember if one becomes loose it ruins many, and "one fine, faultless specimen is worth no end of trash." Neuroptera, Odonata should always have a **bristle passed through the abdomen** into the thorax when fresh, otherwise they are almost always broken off in transportation. Always put your name and address in the inner box. (Reprinted in part from vol. 3, p. 41.

**BITTEN BY A FOREIGN INSECT.**—A trolley conductor may lose a foot as a result. John Gifford is confined to his home, in Stockton, with a very badly swollen foot, the result of a bite of a strange insect. Several days ago a number of foreign laborers occupied a trolley car of which Gifford was conductor. After they left, he says, he felt an itching on his foot. He found a small insect, which, one of the passengers said, was an Italian moth, which the people of Italy hold in great dread. No attention was at first paid to the bite until Gifford's foot became swollen as large as his head. Dr. Jerome Artz says the bite is a peculiar one, and fears there may be serious results.—*Newspaper*.

ONE Summer morning I was awakened by the excited buzz of a large flesh-fly. On opening my eyes I was surprised to see her coursing madly about the room pursued by two houseflies. She circled about the room several times with the houseflies close behind her; but when she finally alighted upon the window-pane they left her. This scene was enacted several times and thus had the appearance of a sport voluntarily indulged in on the part of the blow-fly.

Some time after some honey-bees, whose hive had been disturbed, found their way into our rooms and to my surprise were set upon in the same manner by the houseflies and driven to precipitate flight. Can anyone explain this?—FREDERICK KNAB, Chicopee, Mass.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

The meeting of the Association of Economic Entomologists at Boston, August 19th and 20th, was a very enjoyable occasion for those present, and among them were some who, like Dr. S. H. Scudder, are not frequent attendants. On the other hand, a number of those who, like Dr. Fletcher, had been regular attendants at previous meetings were unfortunately detained from this.

The program was so well filled that it was necessary to hold an evening meeting on both days, although from this should be deducted an afternoon spent at and near Malden as the guests of the Gypsy Moth Committee, in inspecting the work done in the direction of exterminating this moth.

As an introduction to this pest, Mr. E. H. Forbush, the field director, made an interesting statement of the recent work of the Committee, which, as a report of progress, is very encouraging. There does not seem to remain any doubt of the fact that this insect can be actually exterminated; *provided*, and this provision is an exceedingly important one—sufficient funds are available just when and where needed. Every entomologist will readily see the importance of this, for with an insect that breeds as rapidly as this moth and has so few natural enemies, a year's neglect of one center may be sufficient to put back the final date of extermination for several years. It is an unfortunate thing that not once since the beginning of the work has there been appropriated the full sum asked for by the Committee, made available at the time when it was most needed. This has been unfortunate, because it has really increased the cost of the work by a very large per centage. A colony that could be cleaned out for a few hundred dollars one year, but is neglected because other colonies are more threatening, will cost as many thousands the year following. A number of the visitors at Malden, who were familiar with the work of the Committee through its publications, were utterly astonished when the practical side was witnessed in operation. There was an opportunity to see the work done by the spraying machines, including the action of the "monitor" nozzle, devised by Mr. E. W. Ware, who is in charge of the mechanical department. The operation of burning over infested ground by means of a lighted oil spray was also witnessed. The guides in charge of this excursion gave the members an opportunity of viewing the worst infested spot, and most of them had their first opportunity of seeing living gypsy moths, a few late females being yet engaged in ovipositing. The work of this Committee is entitled to the highest praise, and it was the unanimous judgement of the members present that if those in charge of the work be given full swing and sufficient means to carry out their plans, the thing for which the Committee was created will be accomplished in the not too distant future.

Incidentally it was possible to observe the eggs and larval stages of the

brown-tail moth, which is also present at Malden, and Prof. Fernald, in a paper read before the Association, gave a very interesting description of the way in which, during the Summer of 1897, this moth has spread over a considerable extent of territory. This spread is charged to a very heavy gale, lasting 2 or 3 days, which occurred exactly at the time when the moths were mating and most active, and the result of this distribution is a number of isolated colonies, which will be very difficult to discover for some time to come. The work of destroying this insect has also been saddled upon the Gypsy Moth Committee; but without increasing the means at their command for doing it. If the writer may be allowed an opinion, this brown-tail moth is apt to prove considerably more troublesome than the other imported pest. We have here a female that flies quite readily, and while the flight is not usually a very long one, still even a moderate wind may carry an impregnated female a considerable distance from the original colony, and this may result in the establishment of so many centres that are almost impossible to discover, that dealing with the insect by State authority will have to be abandoned. There is quite enough difference between these two species, the brown-tail and the gypsy moth, to change the prognosis on the question of extermination.

Appropos of this same general matter, Mr. A. H. Kirkland gave some account of experiments with insecticides against the larva of these two moths. Practically the Committee is relying upon arsenate of lead as the most satisfactory insecticide, and their apparatus for and applying, leaves very little to be desired.

One session was held jointly with the Society for the Promotion of Agriculture, at which entomological papers of general interest were presented. An interesting paper from Mr. F. M. Webster was read by the Secretary, its writer being unfortunately absent. It dealt with the question of the San José scale in Ohio, and its general conclusions were decidedly encouraging. Mr. Webster has found that, practically, the whale oil soap is the most satisfactory remedial measure, and that in peach orchards it has had a double effect, not only killing the scale, but also preventing leaf curl, which during the early part of 1898 was so wonderfully prevalent.

Mr. C. M. Weed recounted some very interesting observations on the food of the song sparrow, the object being not so much to discover the character of the food, but the number of times that the parent birds carried it to the young. Nothing could be better calculated to bring out the importance of birds in controlling insects than observations of this kind, which indicated that an enormous number of insects were required to bring up a brood of even small birds.

The writer of this note presented some thoughts on the question of quarantine against injurious insects, and how far it could be effective. It was pointed out that while it might be easily possible to exclude certain definite known species, a general attempt to exclude all insects that might become troublesome would be impractical. It was also pointed out that if the law provided for certificates to be given by entomologists of foreign countries there would be practically no protection, because of the number of insects that would necessarily escape observation made on growing stock only.

The San José or pernicious scale was the subject for several communications before the Association. Mr. W. E. Britton spoke of the scale in Connecticut and of its distribution there. Mr. R. A. Cooley, in a general paper on the scale insects of New England, brought in incidentally the distribution of this pernicious scale in Massachusetts. Prof. W. G. Johnson gave a very interesting account of the effects of hydrocyanic acid gas as a remedy for this scale. The experiments made by him in Maryland with this gas have been absolutely successful, and a very large number of trees has now been treated and apparently cleaned completely by the use of this method. Aside from the first cost of the tents the fumigating method seems to be the cheapest and on the whole the most effective. Kerosene has been found thoroughly unsatisfactory in his experience. On this point the experience of Prof. Hopkins, of West Virginia, and Prof. Alwood, of Virginia, differed, for these gentlemen have found it possible to use kerosene satisfactorily under proper conditions. Prof. Johnson's results seem to stand alone in the very serious injury caused on a large variety of fruit trees. The writer's experience in New Jersey, where many hundreds of trees were treated during the winter of 1897-98, was that, except for young peach trees, nothing was harmed to any extent.

New Jersey's contribution to this scale literature was a statement of the extent of the distribution of the scale in that State. It was pointed out that the area of infestation was relatively very small, and that practically there were only two or possibly three important centers of infestation. The maps usually published, showing the distribution of the scale in the United States, was unfair to New Jersey, because points of infestation are marked with such large spots that, while half a dozen of them will readily find a place in Ohio or Illinois, the same number would be sufficient to almost blot out New Jersey altogether. A map was shown giving the exact distribution of the scale so far as it was known at that time.

Mr. A. F. Burgess showed a series of specimens of *Adalia bipuncta* and its variety *humeralis*, and detailed the records of breeding the variety from the normal form, and the results of breeding the variety upon itself and upon the parent form.

Mr. E. P. Felt gave a very interesting record of the egg-laying habits of the elm leaf beetle, and also notes on the principle insects that had proved troublesome in New York State during the Summer of 1898.

On the same line Prof. A. D. Hopkins presented notes on observations in West Virginia since the Buffalo meeting. A number of the matters brought up under these notes were discussed by the members present. One feature was indirectly brought out; that is, that the entomologists are getting a grip on their states that enables them to keep posted in a general way as to what is going on in all parts of it.

Dr. L. O. Howard called attention to some beneficial insects recently imported from abroad, and detailed some attempts that had been made to introduce parasites into new localities; also the interesting discovery

of parasites in localities where their presence had not been heretofore suspected. Some "recent housefly and mosquito experiments" were also explained, and the details of a practical attempt to reduce the number of houseflies in the vicinity of the United States Department of Agriculture, and the number of mosquitoes on certain portions of Staten Island were given. There seemed to be an inclination to suggest that there was very little use in trying to exterminate the mosquitoes on Staten Island, unless those in New Jersey could also be included. The question was raised and not satisfactorily answered as to the habits of flight of mosquitoes. Under what circumstances do they fly? How far may they fly, and are they likely to be carried by the wind: if so, what kind of wind is likely to carry them? In other words, it seems as if there was yet considerable to be learned, even about so common and well known an insect as a mosquito.

Incidentally, it may be remarked that there are mosquitoes in New Brunswick, and sometimes even a considerable number of them. At my own residence the piazza on the lower floor is practically uninhabitable with comfort on many evenings of the Summer; but a balcony on the floor above is almost entirely free from their visitations, except when there is absolutely no air stirring; and even then only occasional specimens rise to this height while dozens of them occur on the floor below.

Another point that was brought out by Dr. Howard was that there are really two species of *Pulvinaria* on maples. One of these is confined to the twigs, the other inhabits by preference the leaves. The two species may not occur together on one tree; but either or both may be present. Further, our knowledge of the actual life-history of this insect is not nearly so complete as has been supposed, and in view of the fact that two species have been mixed, the whole subject must be restudied.

Prof. F. W. Rane spoke on the insect fertilization of musk-melons, mentioning a number of insects that visited the flowers of these plants, and giving some observations on the subject of the fertilization of this fruit.

Mr. C. M. Weed presented a number of notes on tent caterpillars, adding a number of new facts concerning the habits of these insects.

Prof. W. B. Alwood detailed some observations made on the life-history of the tomato-hawk moth and on the wooly apple louse.

A number of papers were read by title only, because the time was too brief to admit of their being read in full, and so also the discussion of many of them was kept down for a similar reason.

Finally, though not the least interesting, the address of the President, Prof. Herbert Osborn, must be mentioned. It will repay careful perusal when published, and its teachings merit the study and, I believe, the acceptance of the earnest and conscientious student. An abstract is hardly possible in this connection for it would be difficult to say what should be omitted.

Altogether the meeting was a very successful and satisfactory one, and it brought out a number of young men who had not been heretofore known as attendants.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

*Caterva catenaria*.—Our town swarms with them—so many that it shut off the electric lights by filling up the globes.—M. C. BARNER, D. D. S., Jersey Shore, Pa.

THEY were all directed against the secretary of agriculture. The first advised him to experiment in his entomological division with crossing the lightning bug with the bee, in order that the busy insect could see to work at night. The second looked to the crossing of the centipede with the hog in order that the usual Populistic idea of finance might receive demonstration in 100 hams to a hog. The third advised the budding of the strawberry plant with the milkweed so that strawberries and cream could be had in natural conjunction.—*Newspaper*.

A TAME BUTTERFLY.—I had been collecting on a very warm day in July, in the Orange Mountains, and had been perspiring freely, although I was in my shirt sleeves. Walking slowly through the open woods, I noticed a *Grapta comma* hovering quite near, which, at length, alighted on my shoulder; out of curiosity I refrained from capturing it, but gently shook it off. Whereupon it flew a short distance, circled about me and alighted on the same shoulder. I was quite interested now as it was becoming bolder, and it required a rapid movement of the arm to cause it to fly, only to return to the same arm. I made another move but more violent than at first to make it fly; but after flying a short distance it came back for the last time and landed on my chest, where I watched it for some time, and noticed that it would unroll its tongue as though it were trying to sip. Was it attracted by the smell of perspiration.—A. J. WEIDT, Newark, N. J.

INSECTS MENTIONED IN THE BIBLE.—By careful study I find the *beetles* mentioned but once in the Bible and that is where the Lord spoke to Moses and Aaron "these ye may eat;" the *gnat* also but once as Mathew tells us in 23d; the *ant* is found twice in the Proverbs of Solomon, and the *fla* twice in the 1st Book of Samuel; the *spider* and *palmerworm* three times; the industrious *bee* four times; *lice* five times; *fly* and *flies* six times, also the *cankerworm* six times, being followed by the *scorpion* seven times; then comes the *moth* and *caterpillar* as often as nine times; while the grasshopper appears but ten times; but the *worm* and *worms* is mentioned nineteen times; while the *locust* beats them all with twenty-four. The mite is mentioned three times, but as money; the worm is mentioned three times as an evil conscience, and the scorpion four times as a lash.—EUGENE R. FISCHER.

LARVA of *Cerura multiscrita* as cannibals. On June 13th I placed about twenty-five eggs of *Notodonta stragula* in a jar with some larva of *Cerura multiscrita*, and on cleaning out the jar to put in fresh leaves a few days after, I found that all the eggs were hatched, but I found no more than six larva of *N. stragula*. Were they eaten by the larva of *C. multiscrita*?—A. J. WEIDT, Newark N. J.

BUTTERFLY FOOD.—Since publishing my notes upon the feeding habits of *Eudamus lycidas*,\* I have had further opportunity to observe that species, and will add that it does not invariably move around while feeding, as did the first that I saw. I have also seen *Eudamus tityrus* feeding in the same manner. It had settled upon a smooth, hard piece of ground, and seeing it curve the abdomen, I managed to get close enough to see the fluid ejected and eaten. The species are so closely allied that this was not unexpected.

Dr. Hoeg's observation of what was probably *hobomok* doing the same thing, gives us reason to suppose that the whole group of Hesperidæ manipulate their food in this manner.

It was formerly believed that "nectar" underwent a chemical change in the honey-sac of the bee, thus fitting it for food. It is said now, I think, that this is untrue, and that honey is made in the hive. But for lack of a better, this theory may be revived for our Hesperidæ, and, perhaps, eventually for all lepidoptera. We may guess that they make honey, but being of a lower organization than bees, perform their work in a more primitive manner.

Will not some chemists and microscopists take up the subject now and tell us what butterfly food really is and where it is kept?—G. M. DODGE, Louisiana, Mo.

THE noted murderess commits suicide by eating spiders—a notorious career.—Cora Smith, the noted murderess confined for life in Anamosa Penitentiary, this State (Iowa), is dead. The prison authorities pronounce her death the result of eating spiders, with suicidal intention. She was 24 years of age and in perfect health up to the time of her death. A handful of dead spiders in her handkerchief, obtained, it is thought while she was taking daily exercise, in the outer courts of the prison, was found in the cell beside her dead body.

Her career in Iowa is notorious. Her mother several years ago had been convicted in Des Moines and sentenced to life imprisonment for the murder of her husband. Cora Smith, then an inmate of a house of ill-fame in Omaha, decided to confess that she alone committed the murder. In doing so she secured a life sentence, but failed to effect her mother's release. The latter's case was appealed and reversed so that she got a new trial, but she was again convicted and sentenced for life. Her case has been appealed a second time. †—*Newspaper*.

\* Page 89.

† We would like to hear from those studying spiders, as we can't credit the above tale.—Eds.

## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

**4.** The Canadian Entomologist, London, Ont., '98.—**5.** Psyche Cambridge, Mass., Oct., '98.—**6.** Journal of the New York Entomological Society, Sept., '93.—**8.** The Entomologist's Monthly Magazine, London, Oct., '98.—**9.** The Entomologist, London, Oct., '98.—**11.** The Annals and Magazine of Natural History, London, '98.—**21.** The Entomologist's Record, London, Sept. 15, '98.—**22.** Zoologischer Anzeiger, Leipsic, '98.—**38.** Wiener Entomologische Zeitung, xvii, 7-8, Sept. 10, '98.—**40.** Societas Entomologica, Zürich-Hottingen, Sept. 15, '98.—**53.** Transactions and Proceedings, New Zealand Institute, 1897. Wellington, June, '98.—**55.** Le Naturaliste, Paris, Sept. 1, '98.—**56.** Mittheilungen der schweizerischen entomologischen Gesellschaft, Schaffhausen, x, 3, June, '98.—**79.** La Nature, Paris, Sept. 10, '98.—**84.** Insekten Börse, Leipsic, Sept. 29, '98.—**86b.** Bulletins, Société Entomologique de France, Paris.—**87.** Revue Scientifique, Paris, '98.—**92.** Illustrierte Zeitschrift für Entomologie, iii, 16, 17. Neudamm, Aug. 15, Sept. 1, '98.

**The General Subject.**—Bouvier, E. L. On the geographical distribution and evolution of *Peripatus*; New observations on *Peripatus* (transl. from C. R. Acad. Sci. Paris), **11**, Oct.—Donisthorpe, H. St. J. K. The Fourth International Congress of Zoology, **21**.—Tutt, J. W. The migration and dispersal of insects: general considerations, **21**.—Wasmann, E. The guests of ants and termites, **92**, 16.

**Economic Entomology.**—Chittenden, F. H. The striped cucumber beetle, figs. Circular 31, 2nd series, U. S. Dep't. Agriculture, Washington, April 26, '98.—Coupin, H. The San José scale, figs., **79**, Sept. 24.—Debray. The destruction of injurious insects, **55**, Sept. 1.—Foa, E. The poisonous tsé-tsé fly, Bulletin, Societe Nationale d'Acclimatation de France, Paris, April, '98.—Harriot, P. The danger of importation of injurious insects into the United States, **55**, Sept. 1.—Howard, L. O. Danger of importing insect pests, figs. Year Book, U. S. Dep't Agriculture for 1897. Washington, '98.—Jablonsky, J. The San José scale [in Hungarian], Kovartani Lapok, Budapest, June 1, '98.—Johnson, W. G. Report on the San José scale in Maryland, and remedies for its suppression and control (116 pp., 22 figs.), Bulletin 57, Maryland Agric. Exper. Station, College Park, Md., Aug. '98.—[Manson, P.] Malaria and the theory of mosquitoes, **87**, Sept. 3.—Redemann, G. The apple roller *Carpocapsa pomonana*, injuries, habits and



means of destroying, **40**.—Rhoads, S. N. "Noxious" or "beneficial"? false premises in Economic Zoology, American Naturalist, Boston, Aug., '98.—Sch., S. On the destruction of injurious insects, **84**.—Sirrinc, F. A. A spraying mixture for cauliflower and cabbage worms, 6 pls., Bulletin 144, New York Agricul. Exper. Station, Geneva, N. Y., Sept. '98.—Strachan, H. and McCorquodale, W. H. Larvæ in antelope horns, Nature, London, Sept. 15, '98.

**Arachnida**.—Acloque, A. Spiders' silk, figs., **79**, Sept. 17.—Banks, N. Three myrmecophilous mites,\* **4**; Some Mexican Phalangida, **6**.

**Orthoptera**.—Cockerell, T. D. A. New North American insects,\* **11**, Oct.—Hutton, F. W. The grasshoppers and locusts, Phasmidæ, Hemiptera, of New Zealand and the Kermadec Islands, 1 pl. (3 papers), **53**.—Morse, A. P. Notes on New England Acridiidae iv, Acridiidae iii, **5**.—Walker, E. M. Notes on some Ontario Acridiidae (cont.), **4**.

**Neuroptera**.—Davis, W. T. Preliminary list of the dragonflies of Staten Island, with notes and dates of capture, **6**.—v. Linden, M. On the life of caddis-flies, figs. Naturwissenschaftliche Rundschau, Braunschweig, Sept. 25, '98.—McLachlan, R. What is *Libellula ænea* Linné? a study in nomenclature, **8**.—Wasmann, E. See the General Subject.

**Hemiptera**.—Alemán, J. On a Mexican *Aleurodes* (*A. dugesii* Kkll. n. sp),\* La Naturaleza, iii, 1-2, Mexico, '98.—Cockerell, T. D. A. A new *Aleurodes* on oak,\* **4**; A new scale insect found on barberry,\* **4**; The Coccidæ of the Sandwich Islands, **9**; See Orthoptera.\*—Davis, W. T. The seventeen-year locust on Staten Island in 1898; The hickory tree Phylloxera at West New Brighton, Proceedings, Natural Science Association of Staten Island, New Brighton, N. Y. Sept. 10, '98.—Giard, A. On the scale insects of the genus *Orthezia* Bosc., **86b**, '98, No. 1.—Gillette, C. P. American leaf-hoppers of the subfamily Typhlocybinae,\* 149 figs., Proceedings, U. S. National Museum, No. 1138, Washington, '98.—Hüeber, T. Synopsis of the German Capsidæ iii, Jahreshefte, Verein für vaterländische Naturkunde in Württemberg, liv. Stuttgart, '98. Hutton, F. W. See Orthoptera. Lounsbury, C. P. *Diaspis amygdali* Tryon, **4**.—Maskell, W. M. Further Coccid notes: with descriptions of new species and discussion of points of interest, **53**.—Townsend, C. H. T. and Cockerell, T. D. A. Coccidæ collected in Mexico by Messrs. Townsend and Koebele in 1897,\* **6**.—de Varigny, H. The seventeen-year Cicada, **87**, Sept. 17.

**Coleoptera**.—Brauns, H. A new Dorylid guest of the mimicry type, fig., **38**.—Escherich, K. On the life-history of *Thorictus Foreli* Wasm. figs., **22**, Sept. 5.—Fall, H. C. A correction [in *Attalus*], **4**.—Felsche, F. Verzeichniss der Lucaniden, welche bis jetzt beschrieben sind. Leipzig, Ernst Heyne, 1898. 89 pp., 8vo.—Gorham, H. S. On the serricorn Coleoptera of St. Vincent, Grenada and the Gre-

nadines (Malacodermata, Ptinidæ, Bostrychidæ), with descriptions of new species, 1 pl.; On the Coleoptera of the families Erotylidæ, Endomychidæ and Coccinellidæ, collected by Mr. H. H. Smith in St. Vincent, Grenada and the Grenadines with descriptions of new species, Proceedings, Zoological Society of London, 1898, pt. ii, Aug. 1.—Lea, A. M. Revision of the Australian Curculionidæ belonging to the subfamily Cryptorhynchids, Proceedings, Linnean Society of New South Wales, '97, pt. iii, Sydney, Feb. 11, '98 (recd. Sept. 19).—Lesne, P. On the 'ferrier' of the larva of *Cicindela hybrida* L., figs, **86b**, '97, 17.—Schoch, G. Supplement VII to the 'Genera and Species of my Cetonid collection,' **56**.—Weise, J. On new and known Coccinellidæ, Archiv für Naturgeschichte, lxiv, i, 2, Berlin, Aug., '98.

**Diptera.**—Cockerell, T. D. A.\* See Orthoptera.—Coquillett, D. W. On the Dipterous family Scatophagidæ\* **6**; A new Dipterous genus belonging to the Therevidæ, **6**.—[Manson, P.] See Economic Entomology.—Mik, J. Some words on Dr. Wandolleck's Stethopathidæ and a new wingless and haltereless Dipteran, 1 pl., **38**.—Townsend, C. H. T. Diptera of the Organ Mountains in southern New Mexico,\* **5**.

**Lepidoptera.**—Chapman, T. A. The structure of the spiracles in Lepidoptera, **21**.—Cockerell, T. D. A.\* See Orthoptera.—Druce, H. Descriptions of some new species of Heterocera from tropical America,\* **11**, Sept.—Dyar, H. G. Note on the larva of *Melanomma auricinctarium* Grote, **4**; A new Parasa with a preliminary table of the species of the genus,\* **5**; The life histories of the New York slug caterpillars xvi, with certain additions and corrections, 1 pl.; Life-history of *Calybia slossonia*, **6**.—Feredey, R. W. A Synonymic list of the Lepidoptera of New Zealand, **53**.—Fernald, C. H. The Pterophoridae of North America. Massachusetts Agricultural College, Jan., 1898. 80 pp., 9 pls.—Fischer, E. Contributions to experimental Lepidopterology vii, viii, 2 pl., **92**, 16, 17. Grote, A. R. The position of *Pseudopontia* (*Gonophlebia*), **21**; Abbreviations of author's names, **4**.—Kathariner, L. Are flying butterflies persecuted by birds? Biologisches Centralblatt, Erlangen, Sept. 15, '98.—Kunze, R. E. Life-history of the two forms of *Cerura nivea*, **6**.—Lathy, P. I. A new species of *Terias* from Haiti, **8**.—Pierce, F. F. Recent investigations of the hair-pencils on certain male Noctuæ, **8**.—Pauls. Experimental zoological studies of Dr. M. Standfuss, **40**.—Rebel, H. Dr. M. Standfuss' experimental zoological studies on Lepidoptera, **22**, Sept. 19.—Ribbe, C. Introduction to the collecting of butterflies in tropical countries, **84**, Sept. 29, '98.—Seifert, O. Life-history of *Feralia jocosca*, **6**.—Strecker, H. Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic. Supplement No. 1. Reading, Pa., U. S. A., 1898. Printed for the Author. (50 nn. spp. Noctuidæ,\* 1 n. sp. *Apatura*—"the types are all carefully marked in my collection," and a characteristic preface).

**Hymenoptera.**—Ashmead, W. H. Classification of the horn-tails and sawflies or the suborder Phytophaga, v, **4**.—Beutenmüller, W. Note on the nest of *Vespa crabro*, 2 pls., **6**.—Cockerell, T. D. A. The North American bees of the genus *Prosopis* (cont.), **9**; See Orthoptera.\*—Dufour, L. Bees and honeys, figs., **79**, Sept. 10.—Dunning, S. N. Notes on *Andrena*,\* **4**.—Escherich, K. See Coleoptera.—Frey-Gessner, E. Fauna insectorum helvetiæ. Hymenoptera (cont.). Fam. xvi, Apidæ, **56**.—Headley, F. W. Bees and the development of flowers, Natural Science, London, Oct., '98.—Karawaiew, W. The postembryonal development of *Lasius flavus*, figs., 4 pls. Zeitschrift für wissenschaftliche Zoologie, lxiv, 3, Leipsic. Aug. 30, '98.—Kiaer, H. Review of the phytophagous Hymenoptera of arctic Norway, 1 pl., Tromsø Museums Aarshefte 19, '98.—Konow, F. W. New Contribution to the synonymy of the Chalastogastra; On the Tenthredinid tribe Lophyrini\* (two papers), Entomologische Nachrichten, xxiv, 15-16. Berlin, Aug., '98; On the Tenthredinid genus *Amasis* Leach, **38**; Synonymic and critical remarks on Tenthredinid species incorrectly, or not hitherto referred, **40**; Analytical table for identifying the hitherto described larvæ of the Hymenopterous suborder Chalastogastra, **92**, 16, 17.—Stoll, O. To knowledge of the geographical distribution of ants, **56**.—Wasmann, E. See the General Subject.

Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic. Supplement No. 1. By Herman Strecker, Reading, Pa., U. S. A. Printed for the author.

This contains the descriptions of fifty new moths and one new butterfly. Next to the scientific interest of the paper we always look to Dr. Strecker for something racy in his remarks, and in the one page of preface we have this as in the days of yore. He was disappointed in an intended plate of the specimens and acknowledges he has joined the big band of sinners, dead and alive, who have published descriptions alone. If the gentleman had made a good photographic negative, and from this a slightly underprinted bromide enlargement, and then retouched with india ink, and afterward reduced in the half-tone to natural size again, the result would have been excellent. No one would be more competent to do the slight retouching necessary than the author of this paper.—H. S.

## Doings of Societies.

A meeting of Feldman Collecting Social was held September 21, 1898.

Mr. Johnson exhibited a specimen of a species of *Eriocera* in which the discal cell is absent from one wing. A specimen of *E. spinosus* showed an accessory discal cell in one wing. *Loncurio testaceus* was shown from Fairmount Park, Philadelphia.

In reply to Prof. Smith, Mr. Johnson said pinning is probably

the best method of preserving Tipulidæ, although great care must be taken in handling them, because of their fragility. He did not prefer alcoholic specimens except for dissection.

The preservation of the color of insects by alcohol and formalin was discussed by Messrs. Smith, Skinner, Johnson, Castle and Gerhard, the speakers agreeing that alcohol is the better of the two for this purpose.

Dr. Skinner reported the capture of *Argynnis atlantis* at North Mt., Pa. It had not before been recorded south of Catskills, N. Y.

He also referred to the abundance of *Callidryas eubule* at Cape May, N. J., in spite of the absence of the supposed food plant of the insect from the region thereabouts. He had found on investigation that it feeds also on *Cassia nictitans*. It has been asserted that it hibernates in the chrysalis, but this seems doubtful, as he had seen the species ovipositing very late in the season, so that it could hardly reach the chrysalis stage by cold weather. He suggested the possibility of hibernation in the larval stage.

Prof. Smith referred to a previous communication on *Augochlova humeralis*. The burrow was described. Nests of broad cells lined with clay and surrounded by an air-chamber are put off at various places along the vertical burrow which may proceed for several feet. The clusters of cells number from 1 to 11. The bees emerge about the middle of July and commence immediately to burrow, making a burrow entirely different from their parents in that instead of brood-cells they sent off from 1 to 3 short burrows or "fingers" along the vertical section. The bees are single brooded. Adult bees had been found in the burrows in September preparatory to hibernation. All burrows found from May to July have brood-cells, but those built after July have not brood-cells, which shows, in the speaker's opinion, that the later burrow is made for hibernation only. The bright metallic color of the insect was commented on as being unusual for a species which spends the greater part of its life underground.

The speaker announced the coming issue of a new edition of the List of Insects for New Jersey and asked for coöperation in its preparation from the members of the social.

WILLIAM J. FOX, *Secretary.*

A meeting of the Entomological Section of The Academy of Natural Sciences of Philadelphia was held September 22nd. Mr. C. S. Welles, Director, presiding. A number of blown-larvæ of *Daremma catalpæ* were presented by Mr. Herman Hornig. Two boxes of Lepidoptra from Manchuria were presented by Dr. A. D. Smith and the Farnum brothers. Dr. Calvert gave a summary of his paper on Burmeister's Types of Odonata, now publishing in the current volume of the Transactions of the American Entomological Society. Mr. C. S. Welles stated that he had been informed that many caterpillars were swarming on the catalpa trees near his home (Elwyn, Del. Co., Pa.), and some of them were nearly defoliated by what he subsequently identified as the larva of *Daremma catalpæ*. He exhibited the imago, larvæ and chrysalids of this moth and said it was a southern species and had not heretofore been noticed in this State in any such numbers, and if it continues to prove so destructive it may become a subject for the economic entomologist. Mr. Liebeck mentioned a locality in the heart of the city where the Ailanthus trees had been denuded of leaves by the larva of *Callosamia cynthia*. The Director spoke of Mr. Gerhard's journey to Bolivia and wished him *bon voyage* and the good wishes of the Section. The latter said he expected to go to Mollendo and then to La Paz, which would be his headquarters. Lepidoptra would receive first attention, but other orders would not be entirely neglected. All the material will be sent to Mr. A. G. Weeks, Jr. Mr. Liebick referred to the bird-flies (Hippoboscidæ) which he had collected for Mr. Johnson. He had found them on the American bittern and the night-heron only. They are flat and look like a winged tick and slip side-wise spasmodically when an effort is made to pick them up. They try to slip up in narrow spaces like that between a loose cork and the neck of a bottle. They fly with great rapidity and are found under the wing feathers.

DR. HENRY SKINNER, *Recorder*.

A regular meeting was held by the Newark Entomological Society, Sunday, September 11th, at 4 P. M., at Turn Hall. The following members were present: Messrs. Seib, Broadwell, Angleman, Bucholz, Weidt, Bishchoff, Erb and Bunsow. Vice-President Brehme presiding. Mr. Weidt reported a capture of

35 specimens of *Schinia arcifera* in the Orange Mountains, August 28th, and remarked that it was locally common. Mr. Herman Erb exhibited a number of *Paonias astylus* larva almost full grown. Mr. Weidt remarked having taken the larva in June. Mr. Broadwell exhibited some snap shots taken at the field meeting in August. Mr. Weidt reported that *Prodenia commelinæ* was common at light in Newark, September 9th and 10th.

Mr. Herman Brehme read an article on rearing larva successfully: After keeping the larvæ in jars until two weeks old, I placed them in my new breeding cage, the top of which is made entirely of glass, and is 4 feet long, 15 inches deep and 14 inches wide. The bottom is made of wood, zinc lined, and is of the same dimensions as the top, excepting that it is 5 inches deep. In this bottom I put 4 inches of earth and spread manilla paper over the top to keep the cage clean. I then stick small branches of food plant in the ground and it keeps for a week. When the larva is full grown it crawls under the paper and pupates *above the ground* instead of burrowing it to it as is usually the case. Out of 125 larva of *G. luscitiosa* I have lost but three.

The merits of different methods of breeding were discussed at some length by Messrs. Seib, Erb and Bucholz.

Mr. Weidt proposed Mr. S. T. Kemp, formerly of Camden, N. J., who was unanimously elected a member.

Meeting adjourned.

A. J. WEIDT, *Secretary*.

The Newark Entomological Society visited the Brooklyn Institute of Arts and Sciences Sunday, October 9th, at 2.30 P. M. Most of the members brought a box of insects to determine, and all were kept busy until 4 P. M., when a short meeting was held in a room reserved for the Society by Mr. Jacob Doll, the Curator, at the Institute. President Schlicksor presided, with the following members present: Messrs. Brehme, Weidt, Broadwell, Kircher, Rienecker, Stortz, Kemp, Erb, Angleman and Seib. It was decided that the special meetings which were well attended last winter be continued. Mr. Geo. Kircher proposed Mr. Wm. Straub, of Astoria, L. I., who was unanimously elected.

Meeting adjourned.

A. J. WEIDT, *Secretary*.

N. B.—We now have 14 active and 3 passive members.

2329



TREE DEFOLIATED BY DAREMMA CATALPÆ LARVÆ.



# ENTOMOLOGICAL NEWS

AND

## PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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## DESTRUCTIVE WORK OF *DAREMMA CATALPÆ*.

By CHAS. S. WELLES.

The readers of ENTOMOLOGICAL NEWS will probably be interested to know that there has appeared in our midst a new foe to one of our shade trees, the *Catalpa bignonioides*, in the shape of a large sphinx, *Daremma Catalpæ* Boisd. The *Catalpa*, though more suitable for planting on large lawns is, nevertheless, highly esteemed by arboriculturists as an ornamental shade tree on account of its large leaves, beautiful white flowers and peculiar cigar-shaped pods.

Whether this pest, which menaces these trees with at least the destruction of their foliage, if not with permanent injury, has come to stay the future alone will divulge. The probability is that it has, though appearances are often deceiving. Many entomologists are well aware that the occurrence of an insect in large numbers one year is no criterion for the next, sometimes not even a single specimen greeting the eye. Now as to the actual facts in the case. One morning, in the latter part of August or the first of September, 1898, my man, returning from Media, informed me that he had seen large numbers of "worms,"

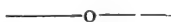
as he called them, down by the "Blue Bridge" which crosses Ridley Creek, equidistant between Media and Elwyn Station, Delaware County, Pa. From his description I felt sure they must be the larvæ of some moth. I was soon on the spot, and found that his "thousands" were no exaggeration of the actual fact. Never in my life have I been permitted to see so many larvæ of a large insect, except in one instance, and those were of the sphinx *Deilephila lineata* Fabr., which were present by the thousands upon the purslain in a large corn field in Illinois, which had not been thoroughly cultivated.

I wish some of my entomological friends might have been with me on this present occasion to see the sight. Caterpillars everywhere, in every condition of molt; caterpillars on the trunks of trees; crawling over the dusty road; on the herbage of whatever description, endeavoring to perfect their growth, so as to go into the pupal state, while other larvæ, which had attained their maturity, were seeking places where they might enter the ground to undergo their change. This is a southern species, and, as I have by me no book of reference as I write, I cannot tell its exact habitat, but I should say from Florida northward to Washington city, perhaps Baltimore, and westward to Kansas, would be its natural limits. I have recently learned that some larvæ of this moth were seen last year; how much farther back its entrance into Pennsylvania can be traced I cannot say, neither can I speak, at this writing, of its life history from the egg to the imago, but I should judge some six weeks must intervene. There are evidently several broods of this insect, and the larvæ were seen on the trees sometime after frost had set in.

The scattering of these larvæ, as above described, was due to the complete denudation of the trees, so they were obliged to seek food-plant elsewhere. Strange to say the trees, especially those near the creek, clothed themselves again with beautiful fresh foliage. The stripping off of leaves from the trees was noticed at points several miles distant from this locality, but the most complete defoliation was observed in this immediate vicinity.

Through the kindness of my friend, Mr. Homer Hoopes, of Media, I am able to send you a photograph of one of these trees taken by him, showing how completely it has been

despoiled of its leaves, and its peculiar appearance, with nothing but its long slender pods depending from its branches. It is said that, in the South, Catalpa trees are planted in order that the larvæ may be obtained for bait. I would call attention to this fact so that those who may be piscatorially inclined can take advantage of it.



## RECOLLECTIONS OF OLD COLLECTING GROUNDS.

By H. F. WICKHAM, Iowa City, Iowa.

### VI.—THE COLORADO DESERT AND ITS ENVIRONS (Concluded).

At Yuma, where I stopped for a few days two years later, a number of the same features were noticed that marked collecting at The Needles, but some species were taken that I had not met with at the latter place. In the willow trees along the river bottom I found considerable numbers of *Chalcolepidius webbia* and many specimens of a fine black and orange colored Longhorn, *Dendobrias mandibularis*. I think this *Dendobrias* must feed, as a larva, on willows, at least in those spots where the tree grows. The adults may often be seen pairing on the living trunks. Nevertheless, I have occasionally captured the beetles in the semi-desert regions of Arizona, far from water, and consequently distant from any willow trees. There is great variation in size, color and mandibular development, even in the same sex. Some males show scarcely any trace of the transverse post-median black band which is so characteristic of fully marked specimens.

Some *Staphylinidæ* were obtained by throwing water on banks of pools or by rolling over pieces of wood in wet places. Among them I may enumerate *Actobius pæderoides*, *A. gratus*, *Stenus incultus*, *Cryptobium arizonense*, *Sunius similis*, *Trogophlæus dentiger*, *T. gilæ* and *T. tantillus*. Under bark I took *Adelina lecontei*, *Ditoma ornata* and *D. sulcata*. On mesquit trees or on posts of this same wood were secured specimens of *Chrysobothris octocola*, *Acmæodera gibbula* and *Polycesta velasco*. A magnificent *Chrysobothris atrofasciata* was seen at rest on a bush and created quite a flutter of excitement until safely landed in my bottle. The Buprestidæ are so active in very hot climates that they often escape after being located, and it is no easy matter to

grasp them in a hurry if, as usual, the shrub on which the insect rests is a thorny one.

Beating thickets in low-lying districts was not productive of many good things; however, I took one or two *Stenosphenus debilis* in this way. So few Tenebrionidæ were secured (by the usual method of rolling logs and ties in dry spots) that I refrain from any remarks on them, more particularly since those taken were not characteristic. So much collecting has been done in this vicinity by many a good entomologist that the fauna is comparatively well known and no lack of records exist.

A much less known region lies to the westward of Yuma, where the Southern Pacific Railroad crosses the desert proper and traverses for a long distance the dried-up bed of a salt lake or ancient sea. In some places this now lies not less than three hundred and sixty feet below the level of the waters of the Pacific. Near the northern rim of this great basin lies the station of Indio, fifty feet below sea level and surrounded by a sandy plain which rises into mountains at a distance of but a few miles. The sand forms curious little hillocks, apparently through being blown up against the stems of the bushes by the wind. As these bushes grow higher they are again partially whelmed by the sand and a repetition of this process finally results in the formation of a considerable dune.

Since but a single day was spent here, only a cursory glance could be given the fauna. I saw specimens of *Gyascutus planicosta* flying in the sun about the bushes, and got a large weevil, near *Cleonus*, about the roots of weeds near the railroad tracks. This weevil was new then, but has since been described by Captain Casey as *Dinocleus wickhamii*. My spoils from this vicinity also include *Apristus laticollis*, *Nocibiotes gracilis* and an *Eupagoderes* which seems to be *varius*. Among the Tenebrionidæ I got some *Eurymetopon rufipes* and *Tribolium ferrugineum* chiefly from the floor of a pump-house, built over a well. The owner slept in the shelter and complained that the *Eurymetopon* bit him at night. His suspicions may, however, have been unjust. *Eleodes armata* was taken sparingly; one or two *Cerenopus concolor* and *Cryptoglossa verrucosa* were captured under logs in the palm grove lying some six miles away at the foot of the hills. A single *Hymenorus grandicollis* is also numbered among my victims.

The Mojave Desert is practically "all of a piece" with the Colorado. A day at the station of Mojave—which seems to have no excuse for existence other than the fact of being a junction point for the Southern and the Atlantic and Pacific Railroads—resulted in an experience which, while interesting, was hardly pleasant. It is necessary, in making trips across these dry sands, to carry water for drinking, and every one is supposed to know this. But having packed up my canteen and sent it with other baggage to San Francisco, I foolishly started out without any liquid provision to visit a large clump of yuccas some seven miles away. All went well for a few hours, in fact until after eating a dry noon-day lunch, I felt no serious inconvenience and in order to make the most of the collecting delayed starting back until the need of water became too pressing to be put off any longer. The trouble began with the recrossing of miles of sand burning under a July sun. I reached the station late in the afternoon with a mouth like an oven and the power of speech almost gone. Quarts of water were needed to satisfy my thirst, and as I drank spots and blotches—some of them as large as a dollar and accompanied by an intense itching—appeared on my body, the result no doubt of an overheated blood. This was followed by weakness and discomfort lasting several days, and it is probable that only a system inured to ordinary exposure by weeks of hard work in similar regions saved me from serious consequences. It is to be hoped that this account may deter any collector, under whose eye it may fall, from falling into a similar error.

The insects taken were not numerous. Several species were found on flowers or in bushes, among them *Hyperaspis lateralis*, *Hyperaspidius trimaculatus*, *Coccinella franciscana*, *Phalacrus penicillatus*, *Hyppodamia ambigua*, *H. 5-signata*, *Listrus ferrugineus*, *Pristoscelis eupthropus*, *Attalus lobulatus*, *Zabrotes obliterated* and *Synertha imbricata*. Under ties along the track or beneath fallen yuccas farther out on the plains I took *Triorophus lævis*, *Eurymetopon convexicolle*, *Notibius puncticollis*, *Coniontis robusta*, *Eleodes dentipes* and *E. quadricollis*. Amongst the yuccas were captured *Rhagoderma tuberculata*, *Colastus yuccæ*, *Trogosita virescens*, *Cynæus angustus*, *Esthesopus dispersus*, *Eupagoderes varius* and one or two *Scyphophorus yuccæ*. There was no chance to do any work along water-courses for the simple reason that none such exist. The adventure referred to prevented more than one day being spent here.

Eastward of Mojave, about sixty miles, lies Barstow. A year before my above-related experience I had stopped off at the latter place for a day's work in the middle of August with some results in the way of entomological booty. A few pools of water were then to be found in the river-bed, giving one a chance at a somewhat more varied fauna and the few cottonwoods lining the banks also yielded some things. I took about twenty-five species of beetles, which may be mentioned as follows: *Cnemidotus simplex*, *Laccophilus decipiens*, *L. mexicanus*, *Deronectes striatellus*, *Rhantus binotatus* and *Berosus punctatissimus* in pools. *Tecnophilus croceicollis*, *Triorophus lævis*, *Edrotes ventricosus*, a *Coniontis* near *opaca*, *Eurymelopon convexicolle*, *E. cylindricum*, *Eleodes quadricollis*, *Ulus crassus*, *Blapstinus pubescens* and *Eucyllus vagans* under logs and rubbish. *Cicindela pacifica* on a muddy flat. *Epierus regularis*, var. *vicinus*, *Hololepta populnea*, *Hesperobaenus abbreviatus* and a *Cossonus* from beneath cottonwood bark. Around roots of weeds a few *Dinocleus molitor*. On flowers, one *Hippodamia convergens*, one *Pyropyga fenestralis* and a lot of *Nemognatha* near *apicalis*.

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### A NEW CHALCOLEPIDIUS.

By H. C. FALL.

Among a lot of *Chalcolepidius webbia* taken by me in July, 1895, at Yuma, were two examples—♂ ♀—which appeared different from the rest of the catch, and were set apart for further developments. On examining a large lot of *Chalcolepidius* received the past summer from Phoenix, Ariz., by Dr. H. G. Griffith, many of the specimens were at once recognized as being like my Yuma pair, and renewed examination shows it not only to be quite distinct from *webbia*, but also from any of the described Mexican forms. As specimens are soon likely to be quite generally distributed, it deserves to be formally introduced, and this may best be done by comparing it with *webbia*, to which it bears a general resemblance.

**C. tartarus** n. sp.—Generally smaller, more parallel and less convex than *webbia*, the border of white scales much narrower throughout. On the thorax this border does not encroach on the disk as is the case in well preserved *webbia*, but is sharply limited within, and less than half as wide as the central darker area. On the elytra the white border is strictly marginal at base, but becomes submarginal behind the middle. The elytra are more strongly striate than in *webbia*, the striæ punctured

toward the base. Sides of prothorax and abdomen beneath widely clothed with white squamiform hairs like those of the upper surface. Third antennal joint a little wider than in *webbii*; scutellum transverse.

Length 21—31 mm. My series of *webbii* varies from 26 to 38 mm.

The habits of the two species are apparently identical, both frequenting the willows which line the banks of the Colorado River and its tributaries, and among which they may be seen flying in the hot sunshine of midsummer. Some of the pleasures incident to their capture have already been alluded to by Mr. Wickham—ENT. NEWS, October, 1898—and are fully appreciated by the writer.

The external sexual characters of *Chalcolepidius* are rather constant throughout the genus. LeConte does not mention them, but Candéze says that the ♂'s have the front tibiæ and the last joint of the front and middle tarsi ciliate within. In addition, it may be stated that the antennæ are often obviously longer in the males, in which sex the last ventral segment is always rounded at tip, while in the female it is as constantly widely truncate and furnished with a dense brush of claviform hairs. This structure is remarkably like that in the ♀'s of certain Cerambycid genera—*Tragidion*, *Oxoplus* and perhaps others—and though I have not seen it mentioned, is so obvious that it can hardly have escaped notice. In one group, including our *smaragdinus* and *viridipilis* the antennæ are pectinate in the males.

In all the ♂'s of *tartarus* which I have examined the ciliation of the tibiæ and tarsi above mentioned is so feeble as to readily escape observation, and the species appears to be peculiar in this respect.

Our six species are easily separable by the following table :

Antennæ of males not pectinate.

Elytra brownish red. (Lower California). . . . **rubripennis** Lec.

Integuments black throughout.

Thorax and elytra with white border.

Body without or with very few white squamules beneath; elytra very freely striate. (Arizona, Southeastern California). **webbii** Lec.

Body beneath densely clothed with white squamules at sides, elytra more deeply striate. (Arizona, Yuma, Phoenix). **tartarus** n. sp.

Vestiture entirely olive green; thorax quite deeply sinuate immediately before the hind angles, which are therefore unusually prominent. (Arizona, Tucson). . . . **behrensii** Cand.

Antennæ of males pectinate.

Vestiture of body bright green, of legs deep blue. (Arizona).

**smaragdinus** Lec.

Vestiture of body and members entirely olive green. (Atlantic region, Texas). . . . **viridipilis** Lec.

## NOTES ON THE GENUS *MAMESTRA* OCHS., WITH DESCRIPTIONS OF NEW SPECIES.

By JOHN B. SMITH, Sc.D.

Since the publication of my Revision in 1891, Proc. U. S. N. M., xiv, pp. 197-276, few new species have been described in this genus. A number of forms not properly referable to any described species have gradually accumulated, and on a careful review of the material I find it necessary to separate some that heretofore I had been inclined to hold together. Several species not known to me in 1891 have been since identified, and the genitalia of the males of some species have been studied for the first time.

This accumulation of material and its renewed study indicates that my arrangement of the species must be in some respects modified. The character of the antennal structure is not so important as I believed at first and would, if strictly adhered to now, separate species closely allied. As it appears now, the change from shortly pectinated to simply ciliated is so gradual that no dividing line is possible, and the rearranged groups will in some cases contain forms with simple and with pectinated antennæ. On the other hand, all the genitalic groupings have approved themselves, and I am inclined to attribute increased importance to this character in arranging the species of a large genus.

There are yet in my collection and in some others, a few specimens, females or rubbed, which may be new. But these must await the arrival of more satisfactory material.

### ***Mamestra nugatis*, n. sp.**

Ground color bluish ash gray over a somewhat obscure yellowish base, more or less powdery. Front with two blackish transverse bands. Collar with two obscure gray bands. Patagiæ with a dusky submargin. Primaries with the median lines faintly marked on the costa only. S. t. line narrow, whitish, irregular, very close to outer margin, with outward teeth on veins 3 and 4, which reach the outer margin. The line is inwardly shaded with deep blackish brown or black, most emphasized in the sub-median interspace opposite the anal angle. A more or less broken black terminal line, beyond which is a whitish line at the base of the fringes. Edge of wing a little scalloped and a little drawn in before the anal angle. There is a short black basal dash, connected by brown or black scales with a moderate claviform which is pale ringed, the outer edge of



the ring emphasized by black and deep brown scales. A blackish streak extends along the median vein forming part of the inferior margin of the ordinary spots. The orbicular is elongate, oblique, and tends to or actually does fuse with the large kidney-shaped reniform. Both spots are incompletely outlined, a little paler, tending to a pale defining line which is outwardly emphasized with black or brown scales. The blackish shade along the median vein extends a little beyond the lower angle of the reniform. Secondaries white, hardly soiled outwardly, veins a little smoky. A blackish terminal line is distinct from apex to vein 2 and is there lost before the anal angle. Beneath whitish, powdery, with a dusky terminal line.

Expanse 1.75 inches = 44 mm.

*Hab.*—Montana ; Nevada.

Two male specimens in somewhat rubbed condition were given me by Mrs. F. O. Herring, of Plainfield, N. J., some time ago. I have had them associated with *purpurissata* and *juncimacula* until the present time though convinced of their distinctness.

I find now that we really have three closely allied, yet sufficiently distinct species of the *purpurissata* group. The type form is found in New England and the northeast generally and extends through Canada into British Columbia. It is of quite a deep bluish ash gray or purplish and the secondaries are smoky in both sexes. All the usual markings are fairly distinct.

*M. juncimacula* is from the mountains of Colorado, Dr. Barnes having sent me several specimens taken at Glenwood Springs in August and September. I have listed this as a variety of *purpurissata* in which the ordinary spots are confluent ; but I find now that this character is not uniform and that at least as many specimens have the spots normally separated. On the other hand, a series of other differences prove its specific distinctness. The secondaries are much paler in both sexes, almost whitish at base ; the primaries are much brighter in color with reddish shadings and a decided tendency to lose the median lines, while the wings themselves are distinctly narrower and less trigonate.

Finally, in *nugatis*, we have a distinctly smaller species, yet paler in color of primaries and with the secondaries white in the male at least. The forewings are as narrow as in *juncimacula*, with the outer margin yet more oblique and the apices yet more pointed. The median lines have disappeared and the wing has

a strigate appearance which is aided by the black margined claviform ; a feature not evident to the same extent in either of the other species.

The antennæ in all of the species are shortly pectinated and no obvious differences appear from such examination as was made ; but the structure of the male genitalia, which will be figured in another paper, bears out the conclusions reached from the superficial characters.

**Mamestra mystica** n. sp.

Ground color dark powdery ash gray with a bluish tint. Head with alternating dusky and paler transverse lines. Collar with a central black line, above which the tint is much darker than below it. The discal thoracic cresting is dusky at tip and so are the tips of the abdominal tufts. Patagiæ black marked at the base of the primaries. Primaries quite uniformly powdered, save that as a whole the costal region is somewhat darker than the rest of the wing ; this feature being most obvious in the male now before me. All the markings present, but not well defined. Basal line geminate, smoky, fairly well marked on costa, but obscure below. T. a. line geminate, smoky, the inner portion scarcely defined below the median vein, its course straight to that point, thence outcurved to the submedian and again below it. T. p. line lunulate, geminate, smoky, the included space paler gray, only a little sinuate and as a whole parallel with the outer margin. A vague median shade line, most obvious between the ordinary spots and very slender below them. S. t. line pale, irregular, broken, defined by irregular black preceding blotches or spots which are the largest on the costa opposite the cell and in the sub-median interspace. A series of interspaceal, black, terminal lunules, beyond which is a pale line at the base of the fringes. The claviform is small, concolorous, defined by black scales. Orbicular large, ovate, of the ground color, somewhat incompletely black-ringed. Reniform large, kidney shaped, with a smoky outline, inwardly marked by paler scales and a more or less obvious dusky central lunule. Secondaries smoky, a little paler at the base, with a dusky, followed by a paler extra median line, a dusky discal lunule and a blackish line at the base of the fringes. Beneath, primaries dusky, terminal space pale powdered, with or without a dusky and paler extra-median line ; secondaries white, powdery, with a median line and dusky discal spot.

Expands 1.80-1.90 inches = 45-47 mm.

*Hab.*—Winnipeg, Manitoba.

One male and one female from Mr. A. W. Hanham, who has other similar examples. The specimens were in excellent condition when shipped, but suffered in transit. I was at first inclined to consider this a dark *nimbosa*, but found afterward that this could hardly hold. It is somewhat intermediate between that

species and *imbrifera*, but distinct from each by the dark ashen gray of the primaries as against the pale shade in *nimbosa* and the luteous shading in *imbrifera*. The markings are more nearly like *nimbosa*, but better defined. In the structure of the male genitalia the species is nearer to *imbrifera*, but differs by the absence of the spoon-shaped clasper as well as in other minor details.

***Mamestra plicata* n. sp.**

Ground color a dull, very powdery reddish gray or brown, almost fawn color, more or less suffused by black or smoky. Head immaculate, collar with two brown transverse lines and tipped with gray scales. Patagiæ brown at the base of the wings and with a vague, darker submargin. Primaries with the maculation more or less obscured by the dark suffusion through the lower half of the wing, the costal region appearing paler by the contrast. There is a short black dash at base, above which the space is paler and from which a pale line is indicated to the inner margin. The basal half line is not obvious in my specimens. T. a. line geminate, narrow, with a broad, almost even outcurve, the defining lines slender and brown, the included space paler and a little wider, thus relieving the line. T. p. line slender, geminate, very evenly bisinuate and as a whole nearly parallel with the outer margin. The defining lines are narrow, even, smoky; the included space paler than the ground color. S. t. line yellowish, distinct, forming the most obvious ornamental feature and margined with a few black scales. It arises from a paler apical patch and is only a little uneven in its course to the hind margin. A series of small black terminal dots on a waved terminal dark line. Fringes a little scalloped, with a pale line at base and cut with pale beyond the veins. The claviform is long, outlined with brown scales and extends nearly across the median space. Orbicular large, gray, irregularly oval, oblique, without obvious defining line; but with a few black scales which emphasize the contrast of the gray spot. Reniform large, upright, a little constricted in the centre, a little paler than ground color, the lower portion filled with a dusky shade. It is outlined by black scales, within which is a pale annulus. Secondaries deep, even fuscous or smoky, the veins, a discal lunule and a terminal line yet darker brown. Beneath reddish gray, with coarse powderings and a large blackish discal spot on all wings.

Expanse 1.40-1.60 inches = 35-40 mm.

*Hab.*—Glenwood Springs, Colorado, in May; Dr. Wm. Barnes.

One male, the smaller, and one female specimen are under examination. The description was mostly from the male, because in the female the blackish suffusion through the lower part of the wing obscured almost everything except the s. t. line.

This line and the large discolored orbicular are the most prominent characters of the insect.

The antennæ of the male have the joints with short pointed teeth, which are furnished with tufts of stiff hair. The genitalia have the harpes simple, with oblique tip, inwardly fringed with a row of spinules. The clasper is double, arising from the middle of the harpes and consists of a short twisted, somewhat spatulate process, below which arises a longer, evenly curved, pointed claw.

In this character the new species agrees with *gussata* and *segregata*, which in turn are much more closely allied than I had suspected. It seems also that, either there is yet another species or the one now described has a considerable range of variation. A female specimen taken by Mr. Bruce in Garfield County, Colorado, at an elevation of 6000 feet expands 43 mm., and is therefore larger than any of the others. It is of a uniform fawn gray with red-brown shadings in the median space, and all the markings are well and uniformly written. There is none of the dark suffusion seen in the other specimens, but every detail of maculation agrees so far as they can be compared. It will require a male of this particular form to decide the question.

***Mamestra neoterica* n. sp.**

Ground color dull, red-brown. Head and thorax without obvious markings, except that the patagiæ may have a deeper brown submarginal line. Primaries with a brighter, rusty brown shading which may be visible all over the wing, over the basal and s. t. spaces only, or may be entirely wanting. All the markings present but somewhat obscured. Basal line short, black, geminate, carrying a few black scales to base from its termination in the submedian interspace. T. a. line geminate, obscure, the outer line blackish, the inner hardly deeper than the ground color; well removed from base, its course as a whole with a very even outcurve. T. p. line rather evenly bisinuate, geminate, the inner portion a little darker, feebly lunulate, the line as a whole rather defined by the pale included space. S. t. line pale, very feebly marked, sometimes with yellowish scales, sometimes scarcely traceable; in course a little irregular. A smoky line is at the base of the concolorous fringes. A median shade line is vaguely marked on the costa only. Claviform more or less black marked, usually well defined and extending nearly across the median space. Orbicular ovate, somewhat irregular, outlined by black scales within which is a series of white scales which hardly form an annulus. Reniform moderate in size, concolorous or a little paler than the ground color, more or less completely black ringed and also with a ring of whitish scales, which may, however, be entirely absent. Secondaries even dull fuscous. Beneath, primaries dull, smoky fuscous; secondaries paler, powdery, with a broken outer line.

Expanse 112-128 inches = 28-32 mm.

*Hab.*—Winnipeg, Manitoba.

One male and two females from Mr. Hanham, all somewhat different in ground color. The male is a little the brightest, with a tendency to fawn. One of the females has evident mossy yellow scales along the s. t. and t. p. lines and in the basal space, while the other has a distinct reddish shading throughout, over which black scales are arranged so as to tarnish and give the wing a sordid appearance.

The species closely resembles a small *detracta* throughout, and as such I was at first inclined to consider it; but the uniform small size and vague dissimilarity led me to examine the sexual parts of the male which, while similar in type, proved very different in detail. In this species the clasper is much longer, even, hook-like, with a pointed tip; the harpes have the tip very much shorter and more abruptly bent, while the lower membraneous process is closely set inside with sharp-pointed conical processes. It is more than likely that other specimens from this same general locality are confused with *detracta* in collections, and I may be responsible for some of these mistakes.

***Mamestra intentata* n. sp.**

Ground color varying from pale ashen to very dark fuscous gray, black powdered. Head without obvious markings. Collar with a somewhat vague median darker line and a darker tip. Patagiæ with broken submarginal black lines. The disc is strongly powdered. Primaries with all the maculation broken and powdery, the median space with a yellowish suffusion which is most obvious in the submedian interspace. Basal line black, geminate, the included space whitish or with a yellow shading, well marked to the submedian vein. T. a. line geminate, the defining lines broken, black, included space whitish or yellowish, as a whole a little outwardly oblique, with moderate outcurves in the interspaces. T. p. line geminate, blackish or smoky, the inner part slightly lunulated, the outer even and followed by white dots on the veins; included space with yellowish or reddish tint. As a whole the line is strongly bent on the costa over the reniform, then inwardly oblique, with a slight incurve, but practically parallel with the outer margin. S. t. line pale, somewhat contrasting, broken, irregular, and shaded on both sides with black or smoky. A series of black terminal dots. The fringes are paler, with a dusky interline and cut with smoky on the interspaces. There is a black median shade, fairly well marked on the costa and darkening the inner edge of the reniform; then it becomes obscured to the submedian interspace, where it reappears and remains distinct to the inner margin. The claviform is large, broad, dusky, extending about half way across the median space, which is luteous or red marked beyond it. Orbicular

round, small, annulate with whitish and with a dusky central dot. Reniform moderate in size, upright, a little constricted centrally, defined by black scales, within which is a whitish annulus which is incomplete above and below. Secondaries in the male white, with a dusky line at base of fringes and the veins a little soiled; in the female dull smoky gray, darker, almost blackish outwardly—the fringes white. Beneath, male, primaries with disk smoky, terminal space whitish; secondaries white with costal margin powdery; female, primaries blackish with a geminate exterior line in which the included space is gray; secondaries whitish, powdery, with an extra median smoky line and a smoky line at the base of the fringes.

Expanse 1.16–1.32 inches = 29–33 mm.

*Hab.*—Estes Park, Colorado, about 8000 feet, No. 2693, Coll. Agl. College.

One male and two females are at hand: the male largest, pale ash gray, with white secondaries; the females smaller, deep smoky gray, with dull, smoky brown secondaries. The contrasts are unusually strong for this genus and the large size of the male compared with the female is also a little unexpected.

The species belongs to the group *laudabilis*; but the primaries are somewhat broader and a little more pointed than in the other species. The male antennæ are simple, and the genitalia are almost exactly like those of *incurva*. In fact the differences are so small that I would consider them within the range of individual variation if I could in any wise bring the species into accord superficially. The new species is, however, much larger, differs in wing form, has the secondaries of the female smoky instead of white and the primaries powdery instead of with smooth and even clothing. It adds another to those small forms which in a general way resemble *olivacea*.

***Mamestra mutilata* n. sp.**

Ground color a pretty bluish gray, the primaries with yellow shades and powderings. Head inferiorly, palpi and breast, dark umber brown. Collar black tipped and with a smoky band above the middle. Thorax a little powdery. Patagiæ with a short black line at the base of the primaries. Primaries with all the markings well defined, but not contrasting. Basal line black, geminate, reaching into the submedian interspace, to an ochre yellow shading. The costa is smoky to the t. a. line, else the basal space is clear, bluish gray. T. a. line geminate, the inner portion dusky and barely traceable, the outer black on the costa, forming a little outward angle on the sub-costal: below it is more smoky, a little incurved in the cell, then a little outcurved to the submedian and again below it. T. p. line geminate, strongly outcurved beyond the cell, then inwardly

oblique and with a little incurve to the inner margin within the outer third. The inner line is crenulated, fine, with outward teeth on the veins which reach the faint, smoky, even outer line. A partial series of white venular points follow this line. S. t. line yellow, powdery, incomplete, preceded by a distinct black shade on the costa and further marked by blackish powderings on either or both sides, elsewhere in its course. A few black scales indicate a series of terminal lunules. The fringe is smoky, narrowly cut beyond the veins with very pale yellowish. A smoky median shade is marked on the costa, obliquely to the base of the reniform: then it becomes lost in the ground color to re-appear on the internal margin. The entire median space is smoky, with yellow powderings beyond the reniform and claviform. Claviform concolorous, broad, outlined in black, extending half way across the median space. Orbicular large, round, of the gray ground color, outlined by black scales. Reniform large, gray, kidney-shaped, outlined in black; the line becoming very slender superiorly. Secondaries smoky, with the outer line and discal spot of the under side showing through. Fringes smoky at base, white at tips, the basal dark portion cut with white on the veins. Beneath, primaries smoky, with a vague outer line beyond which the wing is more powdery. Secondaries powdery, fuscous gray with a round dark discal spot and a smoky outer line.

Expanse 1.40 inches = 35 mm.

*Hab.*—British Columbia.

A single male has been in my collection for some years awaiting a mate, and I have no memorandum of the original source of the specimen. The antennæ have the joints a little marked and furnished with short soft hair, hardly to be called tufts.

In its general appearance the species recalls *cuneata*, but is larger, much brighter in color and quite different in ornamentation. The yellow, powdery, s. t. line through the blue gray ground should identify the species.

The sexual species are somewhat imperfect, but indicate a type which does not agree well with any series. It certainly does not resemble *cuneata* in the least. The harpes are expanded at tip, the margin inwardly fringed with spines and the clasper consists of a long claw from a broad, somewhat flattened base.

***Mamestra cervina* n. sp.**

Ground color a fine mouse or fawn gray with a variable reddish suffusion. Head without markings. Collar black or brown tipped above a series of gray scales. Patagiæ gray, edged with a dusky or blackish submargin. Primaries with all the usual markings present: as a whole the costal region is a little darker and the median space is distinctly more reddish brown. Basal lines geminate, obscure, extending to a very narrow, short, black basal streak in the submedian interspace. T. a.

line geminate, the inner part vague, the interval gray, the outer blackish and with an even, moderate outcurve. T. p. line geminate, brown, not strongly marked, outcurved over the reniform, then almost parallel with the outer margin. The inner line is narrowly lunulate, the outer punctiform, the intervening space gray. Median shade vague, diffuse, outwardly bent between the ordinary spots where it is darkest, then inwardly oblique to the inner margin. S. t. line pale, even or only a little irregular, marked by a preceding brown shade on the costa and a following blackish shade during the rest of its course. This dusky tint shades into the ground color before it reaches the margin. The s. t. line is slightly more emphasized opposite the anal angle, forming a vague paler lunule. There is a broken blackish terminal line and the fringes are also interlined with smoky. Claviform very small, outlined with black scales, and beyond it the median space may be a little more reddish in tint. Orbicular moderate or large, oblique, ovate or sub-quadrate, outlined with darker or blackish scales within which is a paler annulus. Reniform large, kidney-shaped, paler than the ground color, outlined by dusky scales within which is a more obvious pale annulus. Secondaries fuscous, a little paler basally and with a vague trace of a median line. The fringes are paler, with a dark interline. Beneath gray, more or less powdery, with a variably evident discal line and spot on all wings.

Expanse 1-1.20 inches = 25-30 mm.

*Hab.*—Winnipeg, Manitoba.

Two males and one female from Mr. A. W. Hanham, numbered 297, 298, 299. This is a close ally to *M. lustralis*, of which it seemed at first, a small form. It is, however, a narrower winged species, coming nearer to *meditata* in this respect and with less well pectinated antennæ. The markings, while much the same in all essential points, are less distinct.

The sexual pieces of the male are much better developed than in the older species, a small accessory clasper coming out from below the large, obtuse, heavy main structure.

I think it more than probable that this species may be labelled *lustralis* in some collections, for I believe I have seen something very like this labelled "North Dakota" in a collection recently.

***Mamestra naevia* n. sp.**

Ground color dirty ash gray, with a smoky suffusion. Head blackish. Collar quite discolorous, yellowish gray, below a darker central line. Patagiæ with a blackish sub-margin, the disc and edges gray-tipped. Primaries with the maculation obscured. Basal line geminate, traceable chiefly by the gray included shade, and reaching to a narrow, short, black basal streak. T. a. line geminate, evenly outcurved, blackish, the included space gray, very imperfectly defined. T. p. line geminate, smoky, the included space gray; the inner line lunulate, the outer even;



sharply bent over the reniform, then rather evenly oblique to the submedian vein where there is another sharp outward tooth. Median shade feebly marked on the costa only and lost in the dusky shading between the ordinary spots. S. t. line narrow, pale, irregular, defined by a dark shading on both sides, which merges into the ground color in each direction: this shading is most obvious opposite the anal angle. A broken dark terminal line. The fringes have also a dark interline and are cut with dusky and pale. Claviform extending half way across the median space, black margined. Orbicular large, gray, oblique, oval, outlined by black scales and touching the t. a. line. Reniform large, upright, undefined, powdery, touching the t. p. line above and below. Secondaries smoky fuscous, with an indistinct discal lunule and a dusky line at the base of the fringes which are paler and have an almost white line at their base. Beneath gray, powdery, both wings with a discal spot and a somewhat crenulate outer dusky line.

Expanse 1.20 inches = 30 mm.

*Hab.*—Colorado, Bruce.

A single male specimen in good condition has been in my collection for some time. It is also an ally of *lustralis*; smaller, of the same general wing form, but with no trace of reddish or brown. There are a number of other minor differences in ornamentation, and the sexual pieces of the male are quite different: the clasper in this case being formed of a broad thick spatulate process.

**Mamestra ectrapela** n. sp.

Ground color a sordid fuscous gray, with more or less obvious whitish powderings. Head with a white line between the eyes; collar with a white central band and white tips; patagiæ with the disk gray and with a smoky or blackish submarginal line. Primaries with all the markings obvious, tending to become somewhat obscured. Basal line geminate, black, reaching to the submedian vein on which a black patch fills the line: included space more or less white powdered. T. a. line geminate, the inner line scarcely defined, the outer broken, black or blackish, included space with paler powderings. In course it is upright and only broken by a slight inward angle on the submedian vein. T. p. line geminate, the outer portion narrow, smoky, not well defined; the inner darker, marked with black scales below the cell and sometimes black marked throughout: the included space pale or whitish. As a whole the line has a strong outcurve over the cell, and is a little incurved below. S. t. line narrow, white, sometimes a little broken, irregularly marked by broken, smoky preceding shades, which fill the s. t. space on the costa. It is modified into more or less sagitate marks between veins 2, 3, 4, 5 and 6. The entire terminal space, except the apex, is a little darker, more powdery, cut by the paler veins. There is a series of blackish terminal lunules, and a yellow line at the base of the fringes, which are brown and

cut with yellow. A median shade line is obvious on the costa; but lost between the ordinary spots. The claviform is large, black-ringed and extends almost across the median space. The defining line is somewhat diffuse inwardly, so that nearly the entire spot is black filled. The orbicular is large, broadly oval, oblique, white ringed and powdery, the center being smoky. A somewhat paler shade extends below the orbicular, filling the median space to the claviform and lightening that part of the wing. The reniform is moderate in size, upright, kidney-shaped, defined by black and white scales, which are best marked on the inner border. There is a somewhat dusky shading along the inner margin to the t. p. line and, taken as a whole, the s. t. space gives the impression of being the palest part of the wing. Secondaries smoky, a little paler at the base, with a vague discal lunule. Beneath smoky gray, paler toward the base. Secondaries with the discal lunule well marked.

Expanse 1.05 to 1.15 inches = 26.5 to 29 mm.

*Hab.*—Agnes Lake, B. C., 6800 feet, August 21st, Mr. Bean. Garfield county, Colorado, 6000 feet, Mr. Bruce.

The Colorado specimen is a male the other a female, and the male is the larger of the two, as well as by all odds the most brightly marked. The species has the wing form of *ectypa* and the same general type of maculation; but it is of a somewhat sordid, dull brown and has none of the bright contrasts that led Mr. Grote to call the Eastern form *bella*. The s. t. line shows a slight tendency to angulate on veins 3 and 4; but does not seem to form a complete W mark.

***Mamestra sutrina* Grt.**

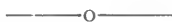
This species was unknown to me in 1891, and not until 1897 did I get two male examples which I felt safe in identifying with this name. The first specimen was received from Dr. Barnes, taken in Yellowstone Park, Wyoming, July 8–15, and this agrees well with Mr. Grote's comparative characterization. The second specimen was received from Mr. Dod, taken at Calgary, Canada, June 30th.

In the male sexual characters the resemblance to *cuneate* is very slight and they come closer to *quadrata* of another series with which the insect has not the least superficial resemblance. The harpes are bent, the tip oblique and fringed with spinules, the clasper corneous, very stout and clumsy, somewhat scoop-shaped.

***Mamestra ingravis* Smith.**

Several specimens have been seen since the original descrip-

tion was published, and I am not yet able to place the species to my satisfaction. The male genitalia do not closely resemble any other species, while yet not unlike several others in type. The harpes are very large, broad at base, abruptly narrowed toward the tip and somewhat bent, the tip itself small and with a fringe and pad of spinules inwardly. The clasper is double, and consists of longer, curved, pointed process beneath a shorter, stouter, beak-like structure.



## ADDITIONAL LIST OF INSECTS TAKEN IN ALPINE REGION OF MT. WASHINGTON.

By ANNIE TRUMBULL SLOSSON.

In the Summer of 1898 I made two visits to Mt. Washington, one in July when I remained two weeks, and another in August of a few days only. I captured many insects, and print herewith a list of 175 not included in former lists. I have been greatly aided, as usual, in the preparation of this list by Messrs. Coquillet, Liebeck, Ashmead, Banks, MacGillivray, Fernald and others. I am glad to acknowledge gratefully their assistance.

### ARACHNIDÆ.

#### Araneæ.

*Diplostyla nigrina* *Wst.*  
*Microneta* sp. ?

#### Acarinæ.

*Trombidium sericeum*  
*Laelaps* sp. ?

#### Pseudoscorpiones.

*Chelanops sanborni* *Hag.*

### NEUROPTERA.

*Psocus* n. sp. ?  
*Polymitarcys albus* *Say.*  
*Somatochlora forcipata* *Scud.*  
*Libellula pulchella* *Drury.*  
*Leucorrhinia glacialis* *Hag.*  
" *hunsonica* *Sely.*  
" *intacta* *Hag.*  
" *proxima* *Calvert.*  
*Chrysopa harrisii* *Fitch.*

*Neuronia dossuaria* *Say.*  
*Goniotaulius pudicus* *Hag.*  
*Neophylax concinnus* *McLach.*  
*Chimarrha aterrima* *Hag.*

### HEMIPTERA.

#### Heteroptera.

*Miris affinis* *Reut.*  
*Pæcilecapsus lineatus* *Fab.*  
" *goniphorus* *Say.*  
*Dicyphus agilis* *Uhler.*  
*Aradus lugubris* *Fall.*

#### Homoptera.

*Deltocephalus melsheimeri* *Fitch.*  
*Typhlocyba tenerrima* *H.-S.*  
*Aleurodes* sp. ?

### LEPIDOPTERA.

#### Heterocera.

*Crocota ferruginosa* *Walk.*  
*Pyrrharctia isabella* *S. and A.*

*Gluphisia trilineata* *Pack.*  
*Acronycta impressa* *Walk.*  
*Rhynchagrotis rufipectus* *Moor.*  
*Catocala cerogama* *Gn.*  
*Teras americana* *Fern.*  
*Tortrix albicomana* *Clem.*  
*Penthina septentrionana* *Curt.*  
*Pædisca transmissana* *Walk.*  
*Phoxopteris discigerana* *Walk?*  
*Incurvaria* sp?  
*Gelechia* sp.?  
*Gelechia* sp.?  
*Pyralid* gen. ? sp. ?

### DIPTERA.

*Sciophila* n. sp. ?  
*Mycetophila sigmoides* *Liv.*  
*Dynatosoma* n. sp. ?  
*Sciara* sp. ?  
*Chironomus viridis* *Macq.*  
*Limnobia* n. sp. ?  
*Cylindrotoma nodicornis* *O. S.*  
     " n. sp. ?  
*Tipula abdominalis* *Say.*  
*Pachyrrhina pedunculata* *Lw.*  
*Rhyphus alternatus* *Say.*  
*Tabanus trispilus* *Wied.*  
*Leptis hirta* *Lw.*  
*Scenopinus fenestralis* *Linn.*  
 \* *Ædalea* n. sp.  
*Empis luctuosa* *Kirby.*  
     " *rufescens* *Lw.*  
*Rhamphomyia* n. sp. ?  
*Chrysotus* sp.  
*Saucropus* n. sp. ?  
*Chilosia pallipes* *Lw.*  
*Melanostoma millina* *Linn.*  
*Mesograpta marginata* *Say.*  
*Sphegina lobatta* *Lw.*  
*Crorhina armillata* *O. S.*  
*Clausicella tarsalis* *Coqu.*  
*Exorista helvina* *Coqu.*  
*Siphona geniculata* *DeG.*  
*Phorichæta sequax* *Will.*  
*Thalaira leucozoma* *Panz.*  
*Lucilia* sp. ?

*Pegomyia* sp. ?  
*Hyetodesia* sp. ?  
*Cænoscia verna* *Fab.*  
*Blepharoptera biseta* *Lw.*  
     " *fuaterna* *Lw.*  
*Sciomyra nana* *Fall.*  
*Tetanocera pictipes* *Lw.*  
*Drosophila transversa* *Fall.*  
*Elachiptera nigricornis* *Lw.*  
*Gaurax montanus* *Cog.*  
*Chlorops proxima* *Say.*  
*Rhicnessa* n. sp. ?

### COLEOPTERA.

#### Carabidæ.

*Cymindis cribricollis* *Dej.*  
*Amara* sp.

#### Dytiscidæ.

*Hydroporus americana* *Aubé.*

#### Hydrophilidæ.

*Cymbiodyta blanchardi* *Horn.*

#### Staphylinidæ.

*Falagria dissecta* *Er.*  
*Homalota lividipennis* *Mann.*  
     " sp.  
*Aleochara bimaculata* *Grav.*  
*Myrmedonia* sp.  
*Quedius fulgidus* *Fab.*  
*Xantholinus cephalus* *Say.*  
*Tachinus memnonius* *Grav.*  
     " *nitiduloides* *Horn.*  
*Tachyporus scitulus* *Er. ?*  
*Bryoporus rufescens* *Lec.*  
*Oxytelus sculptus* *Grav.*  
*Trogophlæus subpunctatus* *Fauv.*

#### [MSS.

*Arpedium gyllenhalli* *Zett.*  
*Homalium* sp.  
*Megarthus americanus* *Sachse.*

#### Scaphidiidæ.

*Scaphisoma convexum* *Say.*

#### Phalacridæ.

*Phalacrus seriatus* *Lec.*

\* Genus new to America.

**Coccinellidæ.**Hippodamia 13-punctata *Linn.*Hyperaspis undulata *Say.*Scymnus americanus *Muls.***Cryptophagidæ.**Atomaria ochracea *Zimm.*

" sp.

**Nitidulidæ.**Ips confluentus *Say.*Nitidula bipustulata *Linn.***Elateridæ.**Athous fossularis *Lec.*Corymbites fulvipes *Bland.***Cerambycidæ.**Microclytus gazellula *Hald.***Chrysomelidæ.**Nodonota puncticollis *Say.*

Plagiodera sp.

**Anthicidæ.**Corphyra fulvipes *Newm.***Curculionidæ.**Hylobius confusus *Kirby.***Calandridæ.**Carphonotus testaceus *Casey.***Scolytidæ.**Pityophthorus materiarius *Fitch.***HYMENOPTERA.****Tenthredinidæ.**Cephaleia atrasomma *Mac G. n. sp.*" slossonia *Mac G. n. sp.*Bactroceros perplexus *Cr.*Pamphilius montana *Mac G. n. sp.*Strongylogaster tacitus *Say.*" pallicoxus *Prov.*Pæcilostoma albalineata *Mac G.*

n. sp.

Pæcilostoma maculata *Nort.*Emphytus inornatus *Say.*" mellipes *Nort.*Tenthredo rufopectus *Nort.*" semirubra *Nort.*" trinatus *Mac G. n. sp.*Kaliosphinga dohrnii *Tischb.*Pristiphora hyalina *Mac G. n. sp.*Pteronus mendicus *Nort.*" tricolor *Marl.*Euura orbitalis *Nort.***Cynipidæ.**Ceroptres tuber *Fitch.***Evanidæ.**Aulacus abdominalis *Cr.***Ichneumonidæ.**Ichneumon extrematatis *Cr.*" lividus *Prov.*" paratus *Say.*" seminiger *Cr.*" rufozonatus *Prov.*Phygadeuon pumilus *Cr.*Megaplectes blakei *Cr.*Exolytus concamerus *Davis.*Exochilum acronyctæ *Ashm.*" tenuipes *Nort.*Anomalon exile *Prov.*Mesochorus agilis *Cr.*Banchus superbus *Cr.*

Exochus sp. ?

Promethus elongatus *Prov.*Ephialtes occidentalis *Cr.*Theronia flavescens *Cr.***Stephanidæ.**

Stephanid gen. ? sp. ?

**Braconidæ.**Bracon xanthostigmus *Cr.*Doryctes cingulatus *Prov.*Ascogaster nigripes *Ashm. MS.*Macroplitis hyphantiæ *Ashm.*Aphidius washingtonensis *Ashm.*

n. sp.

**Chalcididæ.**Smicra albifrons *Walsh.*Megastigmus canadensis *Ashm.*Sympiesis nigrifemora *Ashm.*Chrysocharis albipes *Ashm.***Proctotrypidæ.**Pantoclis similis *Ashm.*Proctotrypes flavipes *Prov.*Aclysta subaptera *Ashm. MS. n. sp.*

## 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, three weeks before date of issue. This should be remembered in sending special or important matter for certain issue. Twenty-five "extras" without change in form will be given free when they are wanted, and this should be so stated on the MS. along with the number desired. The receipt of all papers will be acknowledged.—ED.

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PHILADELPHIA, PA., DECEMBER, 1898.

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A CORRECTION.—A direction given in the NEWS for November, p. 219, for sending insects by mail or express, requires correction. It is that the bristle passed into the abdomen of *Odonata* should be passed **through the head and thorax into the abdomen and not in the reverse direction**, so as to avoid injuring or concealing the important terminal abdominal appendages.

ANOTHER year has gone into the chrysalis state, and the NEWS expects to emerge as a beautiful imago—a finer specimen than ever. We have some regrets—the people who have not paid for '97—but we have many friends who appreciate our endeavors in their behalf. We have a few things to say to our friends and subscribers and they are as follows: Waste no time and at once fill in the blank form in this number and encourage us by sending your renewal of subscription promptly. *Don't* make out checks or money orders to the Academy of Natural Sciences, but to ENTOMOLOGICAL NEWS. Put the correct address on the envelope—*Entomological News, Academy of Natural Sciences, 19th and Race Streets, Philadelphia*. Also take notice that we cannot insert sale advertisements in the Exchange Column, as it is exclusively for free exchange notices. We wish all our friends a Merry Christmas and a Happy New Year.

## DEPARTMENT OF ECONOMIC ENTOMOLOGY.

Edited by Prof. JOHN B. SMITH, Sc.D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor, Prof. John B. Smith, Sc.D., New Brunswick, N. J.

**Preliminary Notes upon an Important Peach Tree Pest.**—In September, 1896, while inspecting the nurseries of Maryland, I found many peach trees dwarfed and stunted, and at first glance attributed it to the black peach aphid—*Aphis prunicola* Kalt. Later inspections proved conclusively that the trouble was not caused by that insect, but by some other creature. A lot of trees were examined in my laboratory and I discovered a minute mite (Phytophidæ) working behind and in the buds. In nearly every instance the terminal bud had been destroyed, thus forcing the laterals. These in turn would grow for a short time and were then killed. As a consequence, the trees were crooked, stunted and not salable, being less than three feet in height. They were, what I have termed, "dog-legged" trees, on account of their very crooked condition.

Over 125,000 peach trees were rendered worthless by the pest in this State in 1896 and '97. Not knowing of any reference to similar injury, I assumed the creature was new, especially in this country. Mentioning the matter to Prof. M. B. Waite, of the Division of Vegetable Pathology, U. S. Department of Agriculture, in his office, the Fall of 1897, I found that he had discovered the same pest several years ago, and had the original trees in his office upon which he made his observations; but, at that time, had published nothing upon the subject. The credit of the discovery of this pest therefore belongs to Prof. Waite, and to him the species will be dedicated should it prove new.

I have continued my observations this season, as Prof. Waite told me he did not intend studying its habits and life history.

From recent observations I am now thoroughly convinced that the mite is carried back to the nursery in buds. I have seen the same species, or one very closely allied, at work upon plum trees in the nursery row this season. It is also quite common in many old peach orchards and is doing much damage to buds upon bearing trees. I am at work upon remedies for its suppression and control, as it is of great economic importance, having seriously injured more than a hundred thousand peach trees this season. I have in preparation a more extended article on the pest.—W. G. JOHNSON, State Entomologist.

Md. Agr. Col., Oct. 1, 1898.

C. F. BAKER will leave Auburn, Ala., on Nov. 1, 1898. He goes on a two years' leave of absence as field botanist to the Herbert H. Smith Exploring Expedition, which will be engaged in biological work in North-western South America. All letters and packages for him should be addressed to St. Croix Falls, Polk Co., Wisconsin.

## Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS  
OF THE GLOBE.

"Sta. I," Cincinnati, O., Oct. 3, '98.

EDS. NEWS:—

I notice in Oct. '98 number some hints to subscribers which are doubtless timely, viz., that the NEWS cannot be "run on wind." This reminded me that it seemed quite a long while since I remitted. Please see if I am in your debt for the last year, or when my subscription will be again overdue. Always notify me when I owe anything. *I don't want the NEWS to die a premature death!*

CHARLES DURY.

MR. R. E. SNODGRASS, assistant in entomology in Leland Stanford Jr. University, sailed from San Francisco on November 1st for the Galapagos Islands. Mr. Snodgrass will spend six months on the islands collecting insects and other animals for the entomological and zoological departments of the University. Mr. Snodgrass is accompanied by Mr. Edmund Heller, student in the department of zoology of the University.

THE latest pictures received for the album of the American Entomological Society are from Philip Nell, Phila.; Dr. A. Fenyes, Pasadena, Cala.; Max Albright, Soldier's Home, Cala.; Andrew Bolter, Chicago; W. L. W. Field, Mass.; Chas. F. Goodhue Webster, N. H.; Charles C. Adams, Mass.; Chas. A. Blake, Phila.; C. Few Seiss, Phila.; J. A. Lintner, N. York; Wm. J. Gerhard, Phila.; F. M. Webster, Ohio; Otis E. Barrett, Vermont. We are always pleased to receive photographs of entomologists. Our collection is a remarkable one, and we desire to make it as complete as possible.

DURING a visit to Hinsdale, Mass., on Aug. 21st, 22nd and 23rd, I was surprised to find *Pieris oleracea* quite abundant. They were in some numbers in a turnip field, together with the common *P. rapæ* and I should judge were in the proportion of one to four or five of the latter. Unfortunately most of the specimens were damaged and only a very few good ones were secured. During my collecting here, in the Connecticut Valley, I have never been able to secure this species, though diligently looked for year after year. According to Dr. Geo. Dimmock it was quite common here before the advent of *P. rapæ*. Scudder in his "Butterflies of New England," speaks of the disappearance of *P. oleracea* from many localities where it was found before the introduction of *P. rapæ*, and says it is now "confined to the less cultivated and especially the hilly districts of New England." "I should be surprised to meet it elsewhere; and even in the recesses of the White Mountains I have never in recent years seen it at all abundant, or so common as *P. rapæ*." Another species seems also to have entirely disappeared from this region since the introduction of *P. rapæ*: *P. protodice* was regularly found here, according to Dr. Dimmock and sometimes abundant about Springfield, Mass.—FREDERICK KNAB, Chicopee, Mass.



## Entomological Literature.

Under the above head it is intended to note such papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the 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; \* denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in parenthesis.

**2.** Transactions of the American Entomological Society, xxv, 2, Philadelphia, Oct. '98.—**4.** The Canadian Entomologist, London, Ont., Nov. '98.—**5.** Psyche, Cambridge, Mass., Nov., '98.—**9.** The Entomologist, London, Nov., '98.—**12.** Comptes Rendus. L'Academie des Sciences, Paris, Oct. 24 '98.—**13.** Comptes Rendus. Societe de Biologie, Paris, Oct. 22, '97.—**15.** Biologia Centrali-Americana, London, parts cxlii, June, cxlii, Aug., '98.—**21.** The Entomologist's Record, London, Oct. 15, '98.—**22.**—Zoologischer Anzeiger, Leipsic, '98.—**34.** Proceedings of the Iowa Academy of Sciences, v, Des Moines, '98.—**35.** Annales, Société Entomologique de Belgique, xlii, Brussels.—**36.** Transactions, Entomological Society of London, '98, 3, Sept. 30.—**50.** Proceedings of the U. S. National Museum, Washington, '98.—**51.** Novitates Zoologicae, v, 3, Tring, Aug. 15, '98.—**58.** Revista Chilena de Historia Natural, ii, 7-8, Valparaiso, July-Aug., '98.—**60.** Anales, Museo Nacional de Buenos Aires.—**68.** Science, New York, '98.—**84.** Insekten Börse, Leipsic, '98.—**87.** Revue Scientifique, Paris, '98.—**92.** Illustrierte Zeitschrift für Entomologie, Neudamm, Oct. 15, '98.—**93.** Rendiconti, Reale Accademia dei Lincei, Rome, Oct. 2, '98.—**94.** Das Thierreich herausgegeben von d. Deutschen zoologischen Gesellschaft, Berlin, '98.—**95.** Memoires, Société Linnéenne du Nord de la France, ix, Amiens, '98.—**96.** Bulletin Trimestriel, Société d'Histoire Naturelle de Macon [France], '98.

**The General Subject.**—A non. Entomological subjects discussed at the International Zoological Congress, 1898, **21.**—Carret, A. M. F. Guillebeau and his entomological works, Revue Echange Linnéenne, Lyon, Oct., '98.—Claypole, A. M. The embryology of the Apterygota, Zoological Bulletin, ii, 2, Boston, Oct., '98.—Comstock, J. H. and Needham, J. G. The wings of insects, iv, American Naturalist, Boston, Oct., '98.—Crampton, H. E., Jr. An important instance of insect coalescence, Annals, New York Academy of Sciences, xi, 11, Aug. 13, '98.—Giesbrecht, W. and Mayer, P. Arthropoda in Zoologischer Jahresbericht für 1897. Berlin, '98.—Henshaw, S. The entomological writings of George Henry Horn (1860-1896) with an index to the genera and species of Coleoptera described and named, **2.**—Kenyon, F. C. The occurrence in great abundance of insects ordinarily merely common, **68.**, Oct. 21.—Knuth, P. Handbuch der Blütenbiologie unter Zugrundelege-

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A valuable paper by G. W. and E. G. Peckham, entitled "On the Instincts and Habits of the Solitary Wasps," has just been issued by the Wisconsin Geological and Natural History Survey, forming Bulletin No. 2 (Scientific Series No. 1), of that department. While written in a popular way, the work is full of facts for the scientific worker. It is fully illustrated with 14 plates, the figures as a whole being rather well done; but, strange to say, all specimens figured are given 13-jointed antennæ—a male characteristic—while it is well known that the building and storing of nests is always or usually done by the female. How impossible for the male of *Ammophila urnaria* to sting a caterpillar as is shown on Plate IV, and on Plate V we find the male sex of the same species represented pounding down dirt over its (?) nest with a stone! Plate VII shows a male of *Pompilus quinquenotatus* digging a nest, an impossible or extremely difficult operation for a male of that species. Aside from these artistic inconsistencies the paper is the most important relating to the habits of our wasps that has yet appeared.—W. J. F.

*Trypoxylon politum* and *T. neglectum* have recently been raised from the same nest by the Rev. Richard Kraus, of St. Vincent Abbey, Beatty P. O., Penna., thus showing them to be sexes of the one species as had been suspected.—Wm. J. Fox.

## Doings of Societies.

A meeting of the American Entomological Society was held October 27th, Dr. P. P. Calvert, Vice-President, in the chair. A vote of thanks was given to Mrs. Lewis Haehtlen for the presentation of diplomas which the late Dr. Horn had received from various scientific societies abroad. Dr. Calvert gave an account of a journey he had made across New Jersey to Ocean City in search of species of *Somatochlora*, as these had been seen at Tuckahoe and near-by places. So far as species in this genus were concerned the trip was a failure, but a new species of *Ischnura* was found which amply repaid for the journey.\* Mr. Seiss asked the speaker if the fauna of the brackish ponds differed materially from that of the local fresh-water ponds. Dr. Calvert said there was no very decided difference. Mr. Seiss spoke of *Schistocerca americana* being killed by flying against the statue of William Penn on the city hall tower. This is about 550 feet above the ground.

HENRY SKINNER, M.D., *Secretary.*

At the meeting of the Feldman Collecting Social held October 19th, 1898, at the residence of Mr. H. W. Wenzel, 1523 South 13th street, Philadelphia, fourteen members were present. Mr. Laurent spoke on the recent abundance of the larva of *Ceratonia catalpæ* near Moore's Station in Delaware County, Pa. He had searched carefully for the variety mentioned by Mr. Koebele (*Brooklyn Bulletin*, iv, p. 20), having white markings arranged so as to form two lines on the black dorsal stripe, and had found but three specimens approaching it. Photographs of catalpa trees completely defoliated by the larva were shown. The species had not before been recorded from the vicinity of Philadelphia.

Mr. H. Wenzel recorded the capture of eight specimens of *Cychnus stenostomus* on October 8th in pairs, copulating. The speaker had only found *Cychnii* copulating late in the year. He also recorded the capture of a specimen of *Panagæus fasciatus* on the same date. Mr. Laurent stated he had once found a pair of a species of *Cychnus* copulating early in the spring. He also

\* See last number of NEWS, page 211.

referred to a previous communication by Dr. Skinner on the distribution of *Argynnis atlantis*, and recorded the capture of a specimen in Pike County, Pa. He had also recently taken four additional specimens of the Mantis *Tenodera sinensis* in nurseries at Germantown. The same speaker also reported that on October 2nd, *Pyrgus tessellata* had been taken abundantly at Woodbury, N. J., by Mr. L. Schneider.

Prof. Smith exhibited newly hatched *Conotrachelus fissunguis* which had emerged early in October, thus proving that the species hibernates in the imago stage, contrary to the belief of some coleopterists. The specimens transformed from the larva to imago stage within four weeks.

Mr. H. Wenzel called attention to the unusually small size of the specimens and stated that he had never found a specimen of the species during Winter in spite of careful sieving in likely places.

Prof. Smith recorded the capture of *Mamestra laudabilis* in Cumberland County, N. J., on October 5th. It is a rare species, and, as far as he is aware, was not before recorded from New Jersey.

WILLIAM J. FOX, *Secretary*.

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A regular meeting was held by the Newark Entomological Society, at Turn Hall, Sunday, November 13th. Vice-President Brehme presided, with the following members present: Messrs. Broadwell, Seib, Bischoff, Angleman, Kircher, Rienecker, Kemp, Buchholz, Weidt, Brenson and Prof. John B. Smith.

Mr. Kemp exhibited the electric lamp he has adapted for night collecting. It would appear to be a convenient and reliable device for the purpose. Mr. Angleman and Mr. Weidt mentioned having seen its efficiency in practical use.

An invitation was received from Mr. Beutenmüller to have the members attend the next meeting of the New York Entomological Society.

Prof. Smith asked for the assistance of the members in furnishing him with data for the new list of Insects of New Jersey, and mentioned that in looking over Mr. Bischoff's collection of Coleoptera, he found over 100 species new to the New Jersey list.

Mr. Weidt read an article on *Schinia arcifera* as follows :

**Notes on *Schinia arcifera*.**

On September 5th, 1897, I took about thirty specimens of *S. arcifera* in an open field in the Orange Mountains, N. J. They were flying during the afternoon and were confined to a space of about two blocks. In their flight they closely resemble a bee, the motion of the wings being very rapid. The insect, however, flies slowly through, but never above the top of the high grass and flowers, unless disturbed. It was by accidentally seeing one alight on a flower that I discovered them at all. The specimens were badly rubbed and apparently had been flying for some time. Seven of the specimens taken were ♂ and twenty-three were ♀. This year I took a perfect ♀ at light in Newark, August 23rd, and the following Sunday, August 28th, I took another trip to the mountains with my friend Mr. Broadwell and from sixty to seventy specimens were taken, mostly fresh. Out of thirty-five specimens sixteen were ♀ and nineteen were ♂. A live ♀ was taken and kept in confinement, but died in a few days without laying eggs. The ♂ has yellow secondaries with a broad dark-brown band and in the ♀ the secondaries are entirely dark.—A. J. WEIDT, Newark, N. J.

Prof. Smith remarked that they were borers and would not lay eggs in confinement.

Mr. Kircher read an article on

***Empretia stimulea* and its Natural Check by Parasites.**

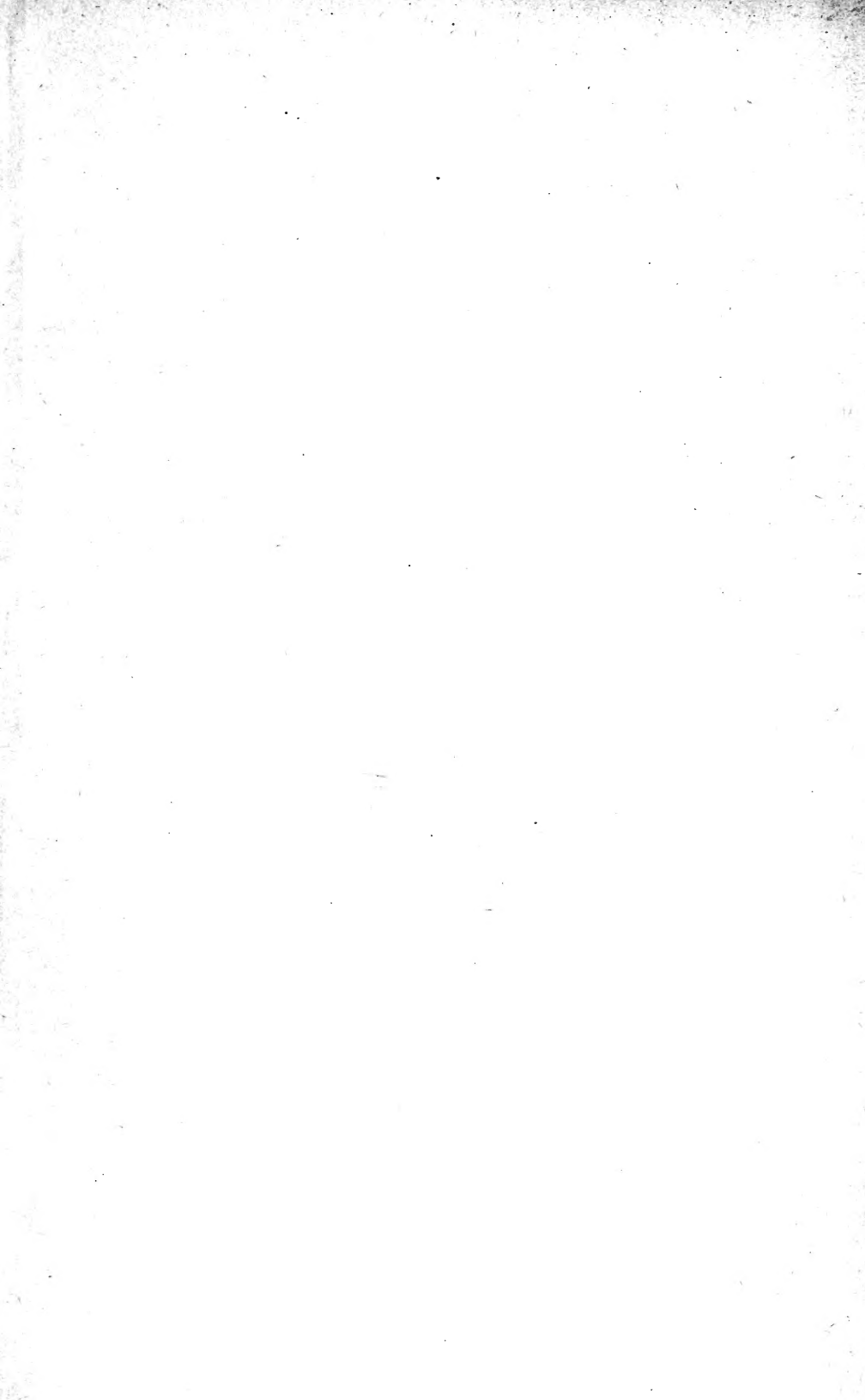
On September 18th, 1898, I took about 100 larva of *E. stimulea* at Greenville, N. J. They were full grown and appeared to be healthy. On arriving at home I placed them in a cage with their food plants. The following morning I found that most of the larva had left the food plant, apparently preparing to pupate. The next day I expected to see some cocoons, but was surprised to see about ten or more full of parasites. I removed the infected larva and left them until the next morning, when I found the same number of infected larva. By the following Sunday I had but few left and I went to the same place that I had taken the others and brought home 100 more, but with no better success. Out of over 200 larva I got but one cocoon. I noticed some very small flies in the cage later.—GEO. KIRCHER, Jersey City, N. J.

Prof. Smith remarked on the importance of recording and taking the different species of parasites found on larva during the season.

Meeting adjourned.

A. J. WEIDT, *Secretary*.







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