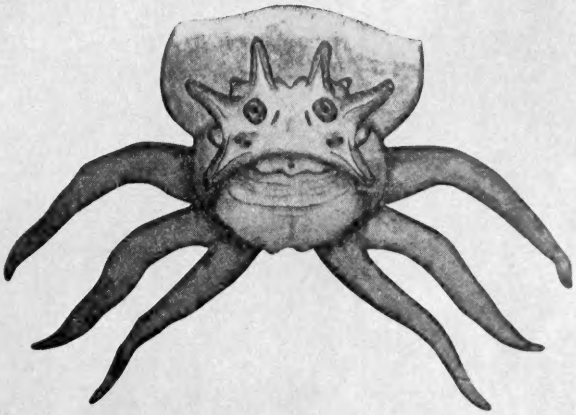
Vol. XIII. No. 1.

ENTOMOLOGICAL NEWS



Quisnam sexcaudatus?

JANUARY, 1902.

PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.

1902.

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Entomological News

AND

PROCEEDINGS

OF THE

ENTOMOLOGICAL SECTION

OF THE

Academy of Natural Sciences of Philadelphia.

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INDEX TO VOLUME XIII.

*Denotes new species, genus or variety.

GENERAL SUBJECTS.

ARACHNIDA.

COLEOPTERA.

DIPTERA.

HEMIPTERA.

HYMENOPTERA.

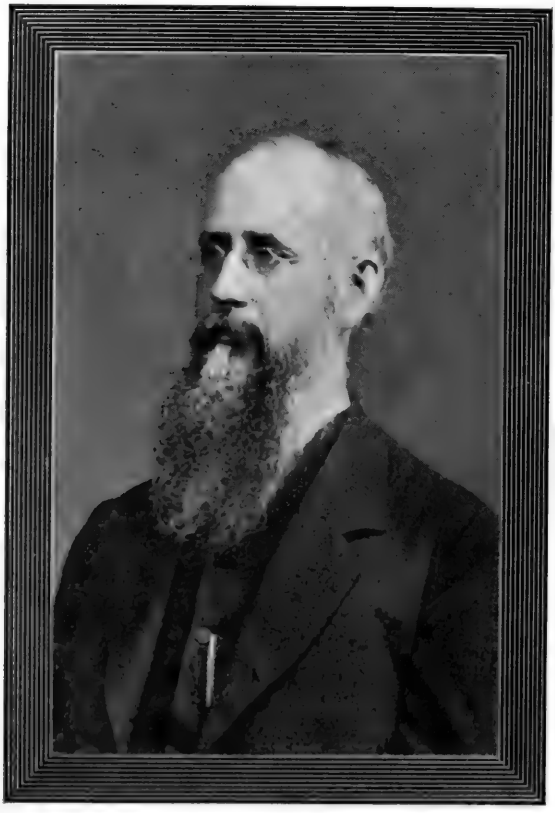
LEPIDOPTERA.

NEUROPTERA.

ORTHOPTERA.

* New species.

AUTHORS.



Herman Strecker
Born at Philada. Pa.
March. 24. 1836.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. JANUARY, 1902. No. 1.

CONTENTS:

Ferdinand Heinrich Herman Strecker.

Ferdinand Heinrich Herman Strecker died at 7.55 A.M., November 30th, at his home, 1325 Mineral Spring Road, Reading, Pa.

He was standing at 6th and Penn about 6 P.M., Friday, the previous evening, waiting for a car, when he was stricken with apoplexy and fell. Friends went to his assistance and placed him in a cab, in which he was removed to his home. He never regained consciousness.

Deceased was 65 years of age. He is survived by his widow and two children, Mrs. Edwin L. Hettinger and Paul Strecker.

He had not been in the best of health for some weeks.

Dr. Strecker was of German parentage, and was born in Philadelphia, March 24, 1836. He inherited his fondness for scientific studies, and evinced this inclination at an early age. On his mother's side were three naturalists of note. They were Benjamin, Edward and Richard Kern.

Dr. Strecker was an architect, designer and sculptor by profession. He located in Reading when a boy, having accompanied his father, who was a prominent dealer in marble and marble worker of Reading at that time. Since then he fol-

lowed the pursuit of his father. As a sculptor he gained a wide and enviable reputation, and he produced many praiseworthy works of art.

He began in his twelfth year at his work as artist and sculptor, and labored hard since. All his literary and scientific labor, the immense correspondence attending the collecting of his butterflies, was done at night, his vocation as sculptor taking up the daylight hours.

He travelled a great deal, and in 1855–56 visited the West Indies, Mexico and Central America, to examine the old Aztec monuments and add to his collection.

His father, Ferdinand H. Strecker, was, during a period of ten years from 1846, a well-known sculptor in Reading. He was a native of Germany, and had a practical experience in the business twenty-six years in Munich, Rome and other large cities in Europe, and in Philadelphia, before he came to Reading. His delicate execution and masterly treatment of marble were remarkable. He had studied ideal sculpture under Antonia Canova, the famous artist and founder of a new school of Italian sculpture, who died in Venice in 1822.

Mr. Strecker came to America about 1835, and located in Philadelphia, where he carried on business until 1846, when he came to Reading. He died in 1856, and his talented son, Herman Strecker, succeeded him in business.

Dr. Strecker owned the largest, most valuable, and, in every way, the most remarkable public or private collection of butterflies and moths on the American continent.

The Strecker collection comprises over 200,000 specimens, and includes butterflies and moths whose haunts in life are on every portion of the discovered globe, not excepting the regions close to the poles, the hearts of the wildest forests of Africa, India, Australia, South America, the smaller islands of the Indian and Pacific Ocean.

In consideration of his scientific knowledge, Franklin and Marshall College some years ago conferred upon him the degree of Doctor of Philosophy.

In his earlier days, during his holiday hours, he made trips to Philadelphia, studied at the Library of the Academy of

Natural Sciencee all branches of natural history, birds, mammals, insects, plants, etc., but later devoted all his time to insects, and, finally, to lepidoptera only.

He will be remembered in the entomological world by his work entitled Lepidoptera, Rhopaloceres and Heteroceres, Indigenous and Exotic, with Descriptions and Colored Illustrations, which was commenced in 1872. It was published and illustrated by the author, the drawings being made on stone and colored by hand. Between the years 1872 and 1878 fifteen parts, containing fifteen plates, were gotten out. There were three supplementary parts published in the years 1898, 1899 and 1900. A single sheet was also published April 21, 1900, containing the description of *Neophasia epyaxa*. This work was a most valuable contribution to the subject, as the plates were excellent and they were published at a time when good figures of American insects were none too numerous. The figures of the genus *Catocala* were especially valuable, as were also those of the Lycænidæ. The work was published under difficulties, as the lithographic stone was cleaned for each plate, to save expense. The author wielded a trenchant pen, and had a very direct way of expressing what he desired to say. Some parts of this work show considerable literary ability. The poetical description of the haunts of *Papilio marchandii* is quite beautiful. The defense of the name *Jehovah* also shows talent for writing. His influence on the work of some of his contemporaries was, doubtless, considerable, as matters might have been worse if his strenuous objections had not been made to what he was pleased to call the species mill of one author, the generic phantasies of another, and the colossal egotism of a third. This work is in demand at the present time, and will, doubtless, always be considered one of merit in the literature of American lepidoptera.

In 1878 he published his Butterflies and Moths of North America, with full instructions for collecting, breeding, preparing, classifying, packing for shipment, and a Complete Synonymical Catalogue of Macrolepidoptera, with a full Bibliography, to which is added a Glossary of Terms and an Alphabetical and Descriptive List of Localities.

This work had a very considerable sale and evinces painstaking and careful work in compiling the literature. It shows remarkable knowledge of specific values and was the best work of the kind in this respect. Dr. Strecker had an accurate knowledge of entomological technic, and his example should not be lost. His collection would be a marvel to many in this respect. He had an interesting and striking personality, and was cordial, affable and full of anecdote. He was frequently visited by scientific men from this country and abroad, and his correspondence was immense. In his chosen field he ranked deservedly high. He has been criticised by some on account of his more than great desire to add to his collection, but this may be ascribed to the fact that his love and enthusiasm for the study were intense and never flagged for a moment, and obscured every other thought. Two of his favorite expressions were that "It is human nature, you know, to think of ourselves first, last and always," and "I never let the right hand know what the left hand does." Had it not been for such traits, many fine things in the collection would have been converted into *Anthrenus* ere this, and their value to the world would have been lost and scattered.

He was a remarkable man, and will be greatly missed by his entomological friends. The final disposition of his wonderful collection is not at present known.

Additional List of Insects Taken in Alpine Region of Mt. Washington.

By Annie Trumbull Slosson.

I was unable to visit Mt. Washington in 1900 and my usual list of captures—published annually since 1893—was omitted. But in this last summer, 1901, I again made two visits to the Summit, one in early July and one in August. The list of insects taken, and not included in former lists, follows: There are nearly 250 species, several of these and at least one genus new to science.

I acknowledge gratefully the assistance, in the preparation

of this list, of Messrs. Coquillett, Ashmead, Liebeck, Van Duzee, Fernald, Banks and Scudder.

LEPIDOPTERA.

Arctia parthenice *Kirby*.
Lophodonta ferruginea *Pack*.
Cosmia paleacea *Esp*.
Ypsia undularis *Dru*.
Teras variana *Fern*.
Gelechia lugubrella *Fab*.
Choreutis marginella. *Clem*.

HYMENOPTERA.

Tenthredindæ.

Cephaleia sp.
Fenusa rubi *Forbes*.
Pteronus ventralis *Say*.
sp.
sp.
Strongylogaster sp.
Macrophya externa *Say*.
pannosa *Say*.
albomaculatus *Nort*.
Tenthredopsis 14-punctata *Nort*.
sp.
Tenthredo sp.
sp.

Apoidea.

Osmia simillima *Sm*.

Sphecoidea.

Crabro maculatus *Fab*.
Xylocrabro slossonæ *Ashm*. n. sp.
Stigmus americanus *Pack*.

Proctotrypoidea.

Chelogynus henshawi *Ashm*.
Pantoclis n. sp. ?
Aclesta rugosopetiolata *Ashm*.
Paramesius terminatus *Say*.
Hemilexodes rotundiceps *Ashm*. n. sp.
Galesus coxalis *Ashm*. n. sp.
Diapria erythropus *Ashm*.
Megaspilus alticola *Ashm*. n. sp.

Cynipoidea.

Periclistidea monticola *Ashm*. n. g. n. sp.
Andricus sp.

Chalcidoidea.

Monodontomerus eutechniæ *Ashm*.
Ormyrus ventricosus *Ashm*.
Chalcis tarsalis *D. T*.
Bruchophagus funebris *Haw*.
Homalotylus slossonæ *Ashm*. n. sp.
Roptrocerus xylophagorum *Ratz*.
Pteromalus fuscipes *Prov*.
Catolaccus tyloderma *Ashm*.
Cirrospilus immaculatus *Ashm*. n. sp.
Aprostocerus americanus *Ashm*.

Ichneumomoidea.

Trogus bolteri *Cr*.
Cratichneumon sp.
sp.
Amblyteles suturalis *Say*.
Notosemus sp.
sp.
Atractodes serpedontes *Ashm*.
Bathymetis sp.
sp.
Ephialtes gigas *Walsh*.
Glypta varipes *Cr*.
Exochus propinquus *Cr*.
Pammacra pallipes *Ashm*.
Scorpiorus flavopictus *Ashm* n. sp.
Hadrodactylus affinis *Ashm*. n. sp.
Scopasis monticola *Ashm*. n. sp.
Agrypon pædiscæ *Ashm*.
Atrometus flavifrons *Ashm*. n. sp.
Aperileptus clypeatus *Ashm*. n. sp.

Braconoidea.

Phænocarpa slossonæ *Ashm*. n. sp.
Aphæreta pallipes *Say*.
Meteorus gracilis *Prov*.

Macrocentrus longicornis *Prov.*
Urosigalphus armatus *Ashm.*
Chelonus sobrinus *Hald.*
Agathis femoratus *Prov.*
Microdus tricoloripes *Ashm.* n. sp.
latiannulipes *Ashm.* n.sp.
varipes *Cr.*
Apanteles glomeratus *Linn.*
Urogaster ensiger *Say.*

COLEOPTERA.

Carabidæ.

Calosoma calidum *Fab.*
Amara sp.
apricarius *Payk.*
chalcea *Dej.*
impuncticollis *Say.*
Lebia pumila *Dej.*
ornata *Say.*
Chlænius pennsylvanicus *Say.*
Acupalpus carus *Lec.*

Dytiscidæ.

Hydroporus modestus *Aubé.*
Agabus seriatus *Say.*

Silphidæ.

Silpha noveboracensis *Forst.*
Colon bidentatum *Sahlb.*

Pselaphidæ.

Tyrus humeralis *Aubé.*
Bryaxis propinqua *Lec.*

Staphylinidæ.

Homalota alpigrada *Fauv.* MSS.
sp.
sp.
Aleochara gracilicornis *Fauv.* MSS.
Philonthus fusiformis Melsh.
Xantholinus obscurus *Er.*
Euæsthetus sp.
Lathrobium simplex *Lec.*
Tachyporus nanus *Er.*
Boletobius dimidiatus *Er.*
cincticollis *Say.*
longiceps *Lec*
Acidota subcarinata *Er.*

Phalacridæ.

Phalacrus simplex *Lec.*
politus *Melsh.*

Coccinellidæ.

Scymnus caudalis *Lec.*

Mycetophagidæ.

Typhœa fumata *Linn.*

Histeridæ.

Hister lecontei *Mars.*

Latridiidæ.

Corticaria serrata *Payk.*
americana *Mann.*

Byrrhidæ.

Byrrhus pettitii *Horn.*

Dascyllidæ.

Macropogon rufipes *Horn*
Prionocyphon discoideus *Say.*

Elateridæ.

Deltometopus amœnicornis *Say.*
Hypocœlus terminalis *Lec.*
Adelocera obtecta *Say.*
Elater pedalis *Germ,*
luctuosus *Lec.*
Cryptohypnus sp. ?
Pityobius anguinus *Lec.*
Asaphes memnonius *Hbst.*

Buprestidæ.

Buprestis fasciata *Fab.*
striata *Fab.*
Agrilus anxius *Gory.*
masculinus *Horn.*

Lampyridæ.

Podabrus extremus *Lec.*

Cleridæ.

Thaneroclerus sanguineus *Say.*
Hydnocera tabida *Lec.*
pallipennis *Say.*
Phyllobænus dislocatus *Say.*

Ptinidæ.

Trypopitys sericus *Say*.

Scarabæidæ.

Aphodius leopardus *Horn*.
Odontæus cornigerus *Melsh*.
Macrodactylus subspinosus *Fab*.

Chrysmelidæ.

Chlamys plicata *Fab*.
Haltica bimarginata *Say*.
Glyptina brunnea *Horn*.
Dibolia borealis *Chev*.
Psylliodes punctulata *Melsh*.

Lagriidæ.

Arthromacra ænea *Say*.

Melandryidæ.

Orchesia castanea *Melsh*.

Pythidæ.

Priognathus monilicornis *Rand*.

Œdemeridæ.

Asclera puncticollis *Say*.

Anthicidæ.

Anthicus spretus Lec.
Notoxus anchora *Hentz*.

Rhynchitidæ.

Rhynchites cyanellus *Lec*.

Curculionidæ.

Sitones flavescens *Marsh*.
Magdalis alutacea *Lec*.
Proctorus armatus *Lec*.

Scolytidæ.

Dryocœtes? sp?
Crypturgus atomus *Lec*.

DIPTERA.

Mycetophilidæ.

Macrocera inconcinna *Lw*.
Ceroplatus clausus *Coq*.
Polylepta leptogaster *Winnertz*.
Neoglaphyroptera ventralis *Say*.
Leja sororcula *Lw*.

Simulidæ.

Simulium venestum *Say*.

Bibionidæ.

Bibio gracilis *Walk*.
Plecia heteroptera *Say*.

Culicidæ.

Corethra plumicornis *Fab*.

Chironomidæ.

Chironomus modestus *Say*.
Orthocladius nivoriundus *Fitch*.

Tipulidæ.

Dicranomyia n. sp.?
Dicranomyia hæretica *O. S.*
Trichobola argus *Say*.
Linnophila adusta *O. S.*
Cylindrotoma americana *O. S.*
Tipula suspecta *Lw*.
Pachyrrhina nobilis *Lw*.

Stratiomyidæ.

Sargus decorus *Say*.

Dolichopodidæ.

Dolichopus calcaratus *Ald*.
cuprinas *Wied*.
n. sp.?
n. sp.?
Gymnopternus phyllophorus *Lw*.
Neurigona floridula *Wheeler*.
rubella *Lw*.
Hydrophorus glaber *Walk*.

Syrphidæ.

Rhingia nasica *Say*.

Pipunculidæ.

Pipunculus fuscus *Lw*.
nigripes *Lw*.
Chalarus spurius *Walk*.

Tabanidæ.

Tabanus astutus *O. S.*
microcephalus *O. S.*

Asilidæ.

Leptogaster badius *Lw*.

Bombylidæ.

Anthrax lateralis *Say.*

Empidæ.

Euhybus subjectus *Walk.*
Empis varipes *Lw.*
Rhamphomyia gilvipes *Lw.*
Hilara gracilis *Lw.*
femorata *Lw.*
Leptopeza flavipes *Meig.*

Platypezidæ.

Platypeza n. sp.
n. sp?

Tachinidæ.

Masicera chætoneura *Coq.*
Winthemia 4-pustulata *Fab.*

Anthomyidæ.

Phaonia sp.
sp.

Cordyluridæ.

Scatophaga nana *Lw.*

Helomyzridæ.

Leria fraterna *Lw.*

Psilidæ.

Psila frontalis *Coq.*

Trypetidæ.

Tephritis albiceps *Lw.*

Lonchœdæ.

Palloptera superba *Lw.*

Heteroneuridæ.

Heteroneura melanostoma *Lw.*
Clusia spectabilis *Lw.*

Sepsidæ.

Themira putris *Linn.*

Ephydridæ.

Dichæta caudata *Fall.*
Hydrellia obscuriceps *Lw.*
Hydrina debilis *Lw.*
fuscicornis *Lw.*

Oeomyzidæ.

Anthomyza terminalis *Lw.*

Drosophilidæ.

Drosophila amoena *Lw.*
Scaptomyza apicata *Thom.*

Scinidæ.

Oscinis dorsalis *Lw.*
Chlorops procera *Lw.*

Phoridæ.

Phora fungicola *Coq.*

HEMIPTERA.

Heteroptera.

Geocoris borealis *Dallas.*
Crophius disconotus *Say.*
Trapezonotus n. sp.?
Megalonotus unus *Say.*
Lopidea marginata *Uhl.*
Lygus pabulinus *Linn.*
invitus *Say.*
sp.?
Orthops scuttellatus *Uhl.*
Aradus sp.
Nabis ferus *Linn.*
Salda humilis *Say.*
reperta *Uhl.*

Homoptera.

Gypona striata *Burm.*

NEUROPTERA.

Ephemerella sp.?
Anabolia bimaculata *Walk.*
Agapetus obscura *Walk.*
Mystacides nigra *Linn.*

ORTHOPTERA.

Nemobius fasciatus *Scudder.*

Letters from Thomas Say to John F. Melsheimer, 1816–1825.—X.

Philad^{a}. May 9th 1822—

Dear Sir !

Your much esteemed letter came duly to hand, & afforded me much pleasure I assure you ; communications respecting the insects the United States yield me the highest gratification & therefore your letters are more acceptable than those of any of my correspondents. I should have reciprocated that letter long since, had I not been busily occupied with a portion of the labour of compiling the narrative of our journey to the Rocky Mountains. In addition to contributing my aid in the ordinary diatribe of the work, it falls to my lot to describe the new Quadripeds, birds & reptiles which we met with, as well as to give an account, both moral and physical, of the natives of the country through which we passed. The arranging and recording of the Meteorological observations, made chiefly by myself, also falls to my share of the duties, though the general narrative is written by our companion D^{r}. James. It will occupy two octavo volumes.*

The description of *Brentus dispar* as recorded in the books, corresponds very well with our species, when we take into view your excellent observations on the thoracic colour of the latter ; but notwithstanding this coincidence, I am still perplexed with doubt as to their specific identity for the following reasons, viz. The *B. dispar* has been always acknowledged (I mean in the books), to be a South American insect, & I do not know that it has been, by any European Author, expressly stated to have been received from N. Amer^{a}.. Latreille particularizes its native country to be Cayenne. Now Cayenne lies in the 4th or 5th degree of N. latitude, which is 36 degrees

* *Account of an expedition from Pittsburgh to the Rocky Mountains . . . . . under the command of Major Stephen H. Long. From the notes of Major Long, Mr. T. Say, ... compiled by Edwin James, ... ; 2 vols., Philadelphia, 1823.* Beyond his connection with the zoological data of this work, it does not seem to have been known that Say contributed such a large portion of it. In the preface he receives credit for his notes in a general way only.—W. J. F.

south of Pennsylvania, & in the geographical distribution of insects, we are led to believe that 30 degrees of latitude produces a total change in the insect species of countries, thus remote from each other. It would be proper to observe, however, that we have other insects which seem to be also inhabitants of S. America & I may here particularize those two species of *Phileurus* mentioned in our last letters.

Another cause of doubt to my mind, arises from the inspection of a figure of the *dispar* on plate 236 of the Encyclop. Methodique; this figure represents that insect to be more than double the size of our specimens, & of an entirely different form as respects proportional length, being much wider and more robust than our insect. If I could implicitely rely upon the accuracy of all the figures engraved in that work, I should have no hesitation in pronouncing upon the subject, & declaring our *Brentus* to be a distinct species; but, unfortunately those engravings, are, in many instances, very indifferent, & some of them convey false images of the species which they are intended to elucidate. The descn. which Fabr. gives of the *dispar* does not state the size of the insect (a defect which in a great degree reigns throughout his works) & is besides very brief; & as I have no other figure than that above referred to, nor a more copious description than that of Fabr. to which I can refer, I must stiil draw upon your familiar acquaintance with the writings of the German authors, as well as upon your own knowledge for further information respecting the specific identity or discrepance of the North & South American Insects which have been regarded as the *dispar*. I will only further remark on the characters of our specimens that the portion of the Fabrician description of "elytris acuminatis" which he attributes to the *dispar*, certainly does not accord with our insect—

* * * * * * *

I am perfectly convinced of the justice of your reasoning respecting *Lytta cinerea* & that it would be improper to separate it from the genus.

I have sent you the numbers of the Journal of the Acad. Nat. Sciences regularly as they were published; did they all

come to hand. The 6th N° of the second volume is completed and shall be sent.

I remain as usual most respectfully
your friend & obedient Servent
Thomas Say

A Note on the Insect Collection of Thomas Say.

In 1834, Thomas Say left his collection of insects to the Academy of Natural Sciences of Philadelphia by verbal bequest. Subsequently, it was sent to Dr. Thaddeus William Harris, of Cambridge, Mass., presumably that it might receive the necessary care that only an experienced entomologist can give. This was prior to 1837.* Under date of July 16, 1838, in a letter to Dr. S. G. Morton, of the Academy, Dr. Harris says: "I have been obliged to *bake* a considerable part of the insects lately belonging to Mr. Say *twice*, and some of them *three times*, in order to destroy the vermin with which they are infested."

In March, 1842, the Say and other collections were returned to the Academy "in such a state of ruin and dilapidation as to be almost useless."†

Whether the collection was infested when first received by the Academy, or became so while in its possession prior to its transmission to Harris, or while under the care of this gentleman, it is now impossible to state. The collection remained in Mr. Harris's possession for at least five years, 1836, or 1837 to 1842, and in 1838, he stated that "a considerable part of the insects" were infested, necessitating baking.

The above facts are presented to refute the oft-repeated charge that Say's collection was allowed to go to ruin at the Academy of Natural Sciences of Philadelphia, and, in justice to Dr. Harris, it is probable that the collection was partially infested when sent to him. The responsibility for the loss of

* "Mr. Say's collection was catalogued by Dr. Harris in the same manner. Most of this sort of work was apparently done in 1837."—*Entomological Correspondence of Thaddeus William Harris, M.D., Edited by Samuel H. Scudder.*

† *A Notice of the . . . . . Academy of Natural Sciences of Philadelphia, by W. S. W. Ruschenberger. 1852.*

the collection should not be placed with the Academy—at least from the facts now at hand.

There is now but one insect type of Say's in the collection of the Academy, a specimen of *Chionobas semidea* [= *Hipparchia semidea* Say], being the one from which the illustration (Plate 50) of the *American Entomology* was made by T. R. Peale. With the specimen is this inscription: "*Hipparchia semidea* Say, Am. Ent. v. 3, No. 5. The sp^{n} is the one drawn for my friend T. Say. 1828—T. R. Peale."—W. J. F.

A List of the Hemiptera Heteroptera of the Vicinity of Wood's Holl, Massachusetts.

By Thos. H. Montgomery, Jr.

University of Pennsylvania, Philadelphia.

The following list is based upon a collection made by the author from the middle of July to the middle of August, 1900. All the collecting was done upon the mainland within a two-mile radius of the town of Wood's Holl. Wood's Holl is situated at the most southern point of the peninsula of Cape Cod, at the point of union of Buzzard's Bay and Vineyard Sound.

I am indebted to Dr. Philip R. Uhler of Baltimore and Mr. Charles W. Johnson of Philadelphia for aid in the determination of a number of the species; indeed, without the help of these entomologists I could not have determined all the species, since my own interest in the collection lay in the anatomical rather than the faunistic standpoint.

The list is probably very far from being a complete one, yet I believe it will be found to contain all the commoner species found during the time when the collection was made, so that it may be of some value to students of the geographical distribution of the group, particularly since to my knowledge no list has been published for this region.

SCUTELLERIDÆ.

Eurygaster alternatus *Say.*

PENTATOMIDÆ.

Perillus confluens *H. S.*
Podisus spinosus *Dall.*
Mormidea lugens *Fabr.*
Euchistus tristigmus *Say.*
E. variolarius *Pal. Beauv.*
Cœnus delius *Say.*
Trichopepla semivittata *Say.*
Pentatoma saucia *Say.*

COREIDÆ.

Corynocoris distinctus *Dall.*
Anasa tristis *DeG.*
Aldyus eurinus *Say.*
A. pilosulus *H. S.*
Protenor belfragei *Hagl.*
Harmostes reflexulus *Stal.* var.
Corizus alternatus *Say.*
C. lateralis *Say* var.

BERYTIDÆ.

Jalysus spinosus *Say.*

LYGÆIDÆ.

Belonochilus numericus *Say.*
Ischnorhynchus didymus *Zett.*
Cymus luridus *Stal.*
C. angustatus *Stal.*
Ischnodemus falicus *Say.*
Blissus leucopterus *Say.*
Geocoris fuliginosus *Say.*
Œdancala dorsalis *Say.*
Ligyrocoris silvestris *Linn.*
L. constrictus *Say.*
Myodocha serripes *Oliv.*
Ptochiomera nodosa *Say.*
Cnemodus mavortius *Say.*
Eremocoris ferus *Say.*
Peliopelta abbreviata *Thl.*
Lygæus turcicus *Fabr.*
Lygæosoma parvula *Uhl.*

CAPSIDÆ.

Brachytropis calcarata *Fall,*
Trigonotylus ruficornis *Fall.*
Leptopterna dolabrata *Linn.*
Collaria meilleurii *Prov.*
oculata *Keut.*
Resthenia insignis *Say.*
Lopidea media *Say.*
Phytocoris eximins *Reut.*
Compsocerocoris annulicornis *Ren.*
Calocoris rapidus *Say.*
Lygus pratensis *Linn.*
Lygus sp.
Poeciloscytus basalis *Reut.*
Hyaliodes vitripennis *Say.*
Diommatus congrex *Uhl.*
Oncotylus decolor *Fall.*
Macrotylus n. sp.?
Plagiognathus politus *Uhl.*
Coquillettia amoena *Uhl.*
Tuponia n. sp.?
Sericoplanes occulatus *Rent.*

ACANTHIIDÆ.

Triphleps insidiosus *Say.*
Acanthia lectularia *Linn.*

TINGITIDÆ.

Tingis clavata *Stal.*
Corythuca fnssigera *Stal.*
Leptostyla oblonga *Say.*

PHYMATIDÆ.

Phymata sp.

NABIDÆ.

Coriscus ferus *Linn.* var.
annulatus *Reut.*

LIMNOBATIDÆ.

Limnobates lineata *Say.*

HYDROBATIDÆ.

Limnotrechus marginatus *Say.*

NAUCORIDÆ.

Pelocoris femorata *Pal. Beauv.*

BELOSTOMATIDÆ.

Zaitha aurantiacum *Leidy* (fresh-water pond near Falmouth).

NEPIDÆ.

Ranatra fusca *Pal. Beauv.*

NOTONECTIDÆ.

Notonecta undulata *Say.*

CORISIDÆ.

Corisa verticalis *Fieb.*
harrisii *Uhl.*
signata *Fieb.*

A New Aptenopedes from Florida.

By JAMES A. G. REHN.

Aptenopedes clara n. sp.

Type, ♂; Miami, Dade County, Florida; January 18, 1899. Collected by S. N. Rhoads. Collection of James A. G. Rehn.

Allied to *A. sphenarioides* Scudder and *A. rufovittata* Scudder, but differing from the former in the very much abbreviated furcula and the much more elongate cerci, and from the latter in the longer and more decidedly falcate cerci.

Size medium; body moderately elongate. Head somewhat produced; frontal costa extending to the clypeus, sulcate through the entire length; eyes elongato-ovate, separated by a very narrow interspace; antennæ somewhat heavy, uniform, terminal joint blunt. Pronotum cylindrical, expanding somewhat posteriorly, above heavily punctate, the lateral lobes moderately punctate, anterior margin convex, posterior triangularly emarginate; median carina well marked; lateral carinæ subobsolete, represented by a callous ridge; lateral lobes longer than high, the anterior and lower margin bearing a heavy, thickened margin. Tegmina lanceolate, reaching to the end of the first abdominal segment. Abdomen moderately elongate. Subgenital plate large, rotundate in outline viewed from above, border hemispherical, internally with a median longitudinally placed tuberosity, the anterior portion being considerably elevated; inferiorly considerably excavated. Supranal plate with sinuous borders, the basal half narrowly sulcate in the central portion, the whole plate bearing a pair of laterally placed deep sulcations extending to near the apex; furcula hardly recognizable. Cerci elongate, basal half tapering, apical half decurved, falcate, bent inward, displaying a very marked internal shoulder. Legs stoutly built, posterior femora just exceeding the extremity of the abdomen. General color apple green (Ridgway's Nomenclature, Pl. X), ranging much lighter green on the sides and lower surface; a line on each side extending from the eye to the tip of the tegmen and the lower border of the lateral lobe of the pronotum creamy-white, one from the posterior border of the pronotum to the extremity of the abdomen pinkish; each stripe inferiorly bordered by a blackish line, the median carina and the superior borders of the lateral stripes on the pronotum marked with black. Face and antennæ dull purplish; anterior and median limbs ferrugineous; posterior femora with the superior external section blackish-purple; tibiæ violaceous. Measurements:

Length of body	20.5 mm.
Length of pronotum	4.5 "
Greatest width of pronotum	3.5 "
Length of tegmina	4.5 "
Length of posterior femora	11 "

Four specimens examined, all males from the type locality. Of these specimens three were collected by Mr. Rhoads in the winter (January) of 1899, and are now in the author's collection, and the remaining one, collected by Mr. Philip Laurent in the spring of 1901, was submitted to me for examination by Mr. C. Few Seiss.

New Species of Rhopalocera.

By HENRY SKINNER.

Lycaena neurona n. sp.

♀.—Expands 20 mm. to 25 mm. Primaries black, with the nerves of the wing orange. The nerves terminate in swellings or slight expansions parallel to the outer margin. In two specimens these swellings coalesce. The costa is orange in two specimens. Secondaries black, with a border of orange 2 mm. in width. This border has five small black dots on it parallel to the margin. The nerves extending toward the base are orange for a short distance.

Underside.—Primaries are of a light ash color, with a marginal row of six spots, but much better defined. Still further in is a "dipper"-like row of spots, six in number. There is a spot in the cell and one at its end. Secondaries are of same color, and have a marginal row of five spots surrounded by rings of silver. Interior to these is a row of five orange crescents edged on the inner side with black. In the central area of wing are ten black spots and a comma-like dash in the cell.

Hab.—Doble, San Bernandino County, Cal., August.

Received through the courtesy of Prof. John B. Smith. This species resembles the female of *Lycæna acmon*, but is smaller and easily differentiated by the character of the neuration. There is one specimen in which the nervures are devoid of orange.

Lycaena chlorina n sp.

♀.—Expands 32 mm. Primaries and secondaries of a fawn color; this is true, at least, where the wing has been somewhat rubbed. Overlying this fawn color is an iridescent, very light green. The primaries are immaculate and the secondaries have a marginal border of orange 2 m. in width. This border has on it five black dots parallel to the margin.

Underside.—Primaries sordid white, with the usual disposition of black spots. Secondaries have a marginal row of five black spots surrounded by black on the inner side. There are ten spots in the central area and a dash at end of the cell.

Hab.—Tehachapi, Cala. July 6th.

Chrysomphalus agavis as a Pest.—This scale, which infests the *Agave* in Mexico was discovered by Koebele, and only published in 1893. I have just received specimens of it from Mr. A. L. Herrera, with the statement that it is quite a pest in the State of Puebla, so much so that they are obliged to take measures for its destruction.—T. D. A. COCKERELL.

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 a 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., JANUARY, 1902.

Editor ENTOMOLOGICAL NEWS:

I have been much interested in your numerous articles in regard to the importance and scientific value of *exact locality* and date labels on specimens, and heartily endorse your efforts to persuade collectors to be more careful in this direction; but are you not aware that there is more than carelessness at the bottom of this matter in some, if not a great many, cases? I have specimens that I had sent out with *printed* New Brighton, Pa., labels on them, come back to me later with West Pa., and others with simply Pa. written on them.

As it requires more *carefulness* to exchange the labels than it does to *let them alone*, I fear you must look for some other cause than *carelessness* to account for *some*, at least, of these indefinite labels.

Can it be possible that we have some among us who are so *selfish*, so illiberal, so *small* that they fear their correspondent will ascertain by whom the specimen was taken, and go direct to headquarters for such species in future, cutting out *his smallness* as a *stand between*, collecting toll from both parties? I sincerely hope not, yet the mutilated labels on exchange specimens would indicate that such there be.

Liberality in dealing in our beautiful and most fascinating study, as well as all other pursuits in life, is the "winning card." Let us hope it will in the near future be universally followed.

HARRY D. MERRICK.

It seems incredible that people calling themselves entomologists should be guilty of such a crime against science. This thing is practiced to prevent their entomological friends from knowing whence the specimens come. We sincerely hope that the people who adopt such methods will give up natural history and collect old shoes and hats, as they are certainly not interested in the advancement of entomology. A knowledge of the exact spot where an insect is found and the date of capture are most important and absolutely essential for the elucidation of many entomological problems.

We are glad to say that in Philadelphia, when an entomologist discovers a new or interesting locality or takes an unrecorded species, his first impulse is to make it known to his fellow-students and collectors. We are sorry to say this is not the case in some other places. We may also say, in passing, that we have coined a new word, "Sloppydoptera," which has reference to specimens captured with a baseball bat or temporarily loaned to the new baby as playthings before being "sent out."

NOTICE.—If you find a subscription blank in your NEWS and you have not paid your subscription for 1902, use the blank at once, or else write us that you do not care to continue your subscription. If you have already paid your subscription give or send the blank to some friend interested in entomology.

MR. WM. J. FOX, librarian of the American Entomological Society, reports that the library contains 3,160 volumes. This does not include the fine entomological library of the Academy of Natural Sciences of Philadelphia. These libraries, in the same building, contain the best and most complete collection of entomological works on this continent.

MYTILASPIS BECKII IN CALIFORNIA.—Last July, at Downey, Los Angeles County, California, I had an opportunity to examine an orange orchard. I was greatly interested to find *Mytitaspis beckii* (which, it used to be said, would not live in California) excessively abundant and injurious on the leaves and fruit. On the same trees the old California pests *Saissetia oleæ*, *Aspidiotus aurantii* and *Icerya purchasi* were also present, but in such insignificant numbers that all three combined would not do any appreciable damage. I had difficulty in getting enough of the *Icerya* for certain identification. I do not know how widespread this condition of affairs may be; Dr. Howard, to whom I mentioned it, told me it was new to him.—T. D. A. COCKERELL.

Entomological Literature.

COMPILED BY HENRY L. VIERECK AND JAMES A. G. REHN.

Under the above head it is intended to mention 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, 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 brackets.

3. The American Naturalist, Cambridge, Mass., '01.—**4.** The Canadian Entomologist, London, Ont., Nov., '01.—**5.** Psyche, Cambridge, Mass., Nov., '01.—**8.** Entomologists' Monthly Magazine, London (2), xii, '01.—**9.** The Entomologist, London, xxxiv, '01.—**11.** Annals and Magazine of Natural History, London, '01.—**14.** Proceedings of the Zoological Society of London, '01, pt. 2.—**21.** The Entomologists' Record and Journal of Variation, London, xiii, '01.—**22.** Zoologischer Anzeiger, Leipsic, '01.—**25.** Bolletino dei Musei di Zoologica ed Anatomia Comparata d. R. Universita di Torino, xvi, '01.—**50.** Proceedings of the United States National Museum, Washington, xxiv.—**55.** Le Naturaliste, Paris (2), xxiii, '01.—**58.**—Revista Chilena de Historia Natural, Valparaiso, v, '01.—**62.** Konglike Svenska Vetenskaps-Akademiens: Handlingar, Stockholm, xxxiv.—**68.** Science, New York (new series), xiv, '01.—**81.** Biologisches Centralblatt, Erlangen, xxi, '01.—**89a.** Zoologische Jahrbücher, Abtheilung für Anatomie, Jena, Bd. xv, Heft 3, '01.—**97.** Zeitschift für Wissenschafliche Zoologie, Leipsig, Bd. lxx, Heft 2, '01.—**103p.** Occasional Papers of the California Academy of Sciences, San Francisco, viii, '01.—**112.** Bulletin of the New York State Museum, Albany, ix, '01.—**125.** The British Bee Journal, London, xxix, '01.—**132.** Popular Science, New York, '01.—**140.** Proceedings of the Washington Academy of Sciences, iii, '01.—**152.** Bulletin of the Agricultural Experiment Station of the University of California, Sacremento, Bull. 135, '01.—**153.** Bulletin of the American Museum of Natural History, New York, xiv, '01.—**154.** Annual report of the Smithsonian Institution, Washington, '01.—**155.** Nova Acta Academiæ Cæsareæ Leopoldius Carolinæ Germanicæ Naturæ Curiosorum, Halle, lxxvii, '01.

THE GENERAL SUBJECT.—Brunetti, E. On labelling insects, **25,** no. 386.—**Burr, M.** A faunistic island—Orthoptera at Oberweiden, **21,** Nov.—**Cockerell, T. D. A.** Some insects of the Hudsonian Zone in New Mexico, **5,** Dec.—**Comstock** and **Kellogg.** Elements of Insect Anatomy. Third Edition, Revised. See Review Post.—**Curreri, G.** Upon the respiration in some aquatic insects. Bollettino Societa Zoologica Italiana, Rome, ser. 2, vol. II, fasc 2.—**Hertwig, O.** The growth of Biology in the nineteenth

century, **154.**—**Linden, Gräfin von.** The Wing Markings of Insects, **81,** no. 22.—**Marshall, Guy A. K.** Some Experiments in Seasonal Dimorphism, **11,** Nov.—**Needham, J. J.** and **Betten, C.** Aquatic insects in the Adirondacks, pls., **112.**—**Radl, Em.** Researches in the light-reaction of Arthropods. Archiv für die gesammte Physiologie der mensche und der Thiere, Bonn, Nov. 1, 1901.—**Shelford, R.** Exhibition of a series of lantern-slides illustrative of mimicry amongst Bornean insects, **14.**—**Wasman, E.** Are there matter of fact species which at the present time are still in the grasp of the line of development? Conjointly with general remarks on the development of Mymerophilidæ and Termitophilidæ and on the existence of Symphilidæ, **81,** no. 22.

ECONOMIC ENTOMOLOGY.—**Fletcher, J.** Farm Pests—Fodder Grasses. Select Standing Committee on Agriculture and Colonization, Ottawa, '01. Advance sheet Committee's Final Report.—**Fletcher, F.** Report of the Entomologist and Botanist. Canada Dept. of Agric. Central Experimental Farm, from Ann. Rep. on Experimental Farms for the year 1901, Ottawa, '01.—**Gillette, C. P.** Report of the Entomologist for 1900. Thirteenth Annual Report of the Colorado Agricultural Experiment Station, Fort Collins.—**Henshaw, S.** Report on the Entomological Department, Annual Report, Museum of Comparative Zoology, Harvard College, 1900-1901, Cambridge, Mass.

ARACHNIDA.—**Banks, N.** Some spiders and other Arachnida from Porto Rico, * 1 pl., 50.—**Cambridge, F. O. P.** A Revision of the Genera of the Araneæ or Spiders, with reference to their Type Species, **11,** Nov.—**Peckham, G. W.** On spiders of the family *Attidæ* found in Jamaica, **14.**—**Pocock, R. T.** Exhibition of, and remarks upon, nest of a tree Trap door Spider from Rio Janeiro, **14.**

MYRIOPODA.—**Chamberlin, R. V.** List of the Myriopod family *Lithobiidæ* of Salt Lake County, Utah, **50.**—**Richardson, H.** Papers from the Hopkins Stanford Galapagos Expedition, 1898-1899. Entomological Results (6). The Isopods, **140.**—**Verhoeff, K. W.** Contributions to a knowledge of the Palæarctic Myriopoda, xvi. Essay on comparative Morphology System and Geography of Chilopoda, Pl., **155.**—**Verhoeff, K. W.** Upon the occurrence of the skin in Diplopods, **155.**

THYSANURA.—**Banks, N.** Papers from the Hopkins Stanford Galapagos Expedition, 1898-1899. Entomological Results (5). Thysanura and Termitidæ, **140.**

EPHEMERIDA.—**Needham, J. G.** Ephemerida in Adirondacks. See General Subject, **112.**

ODONATA.—**Needham, J. G.** Odonata in Adirondacks. See General Subject, **112.**

ORTHOPTERA.—**Scudder, S. H.** Distribution of *Cryptocercus punctulatus*, **5,** Dec., 1901.—**Terry, F. W.** Daplication of the auditory organs in Thamuotrizon cinereus L., **21,** Nov.

NEUROPTERA.—**Bank, N.** A new genus of Myrmeleonidæ, Dec., **4.**—

Banks, N. Neuropteroid insects. See General Subject—**Needham, J. G.** Neuroptera in Adirondacks. See General Subject, **211.**

PLECOPTERA.—Needham, J. G. Plecoptera in Adirondacks. See General Subject, **112.**

ISOPTERA.—Sjostedt, Y. Monograph of the African Termites. Pls., **62.—Banks, N.** Papers from the Hopkins Stanford Galapagos Expedition, 1898-1899, v. Entomological Results (5). Thysanura and Termitidæ, **140.**

PHYSOPODA.—Webster, F. M. The Onion Thrips. Journal of the Columbus Horticultural Society, Vol xvi, No. 3, Nov., 1901.

HEMIPTERA.—Cockerell, T. D. A. A new Mealy-bug on grass-roots, **4,** Dec.—**Conradi, Albert F.** Toads killed by Squash-Bugs, **68.—Felt, E. P.** Scale insects of importance and list of the species in New York State, **112.—Foex, J.** The Phylloxera (in Spanish), **58,** no. 10.—**Hempel, Adolph.** A Preliminary Report on some new Brazilian Hemiptera, **11,** Nov.—**Imhof, O. E.**—Anatomy of Cicada, **81,** no. 22.—**King, G. B.** The Coccidæ of British North America,* **4,** Dec.—**Kirkaldy, G. W.** Notes on the Division Veliiaria (= Subfam. Velidæ, Leth. and Sev.), **9,** Nov.—**Verrill, A. H.** The birth of a *Cicada* figs, **132,** Dec.—**Webster, F. M.** An eight year study of Chinch bug outbreaks in Ohio. Proc. Twenty-second Annual Meeting of Soc. for Promotion Agric. Sci., Nov., 1901.

TRICHOPTERA.—Betten, C. Trichoptera in Adirondacks. See General Subject, **112.—Zander, Von Enoch.** Contribution to the morphology of the male genitalia of Trichoptera, **97.**

COLEOPTERA.—Aaron, S. F. The cadelle beetle (*Tenebrioides mauritanicus*), **132,** Oct.—**Davis, C. A.** Insects of Rhode Island (Coleoptera), 1901.—**Fall, H. C.** List of the Coleoptera of Southern California, with Notes on Habits and Distribution and Descriptions of New Species,* **03p.**—**Fall, H. C.** A change of name, **4,** Dec.—**Lewis, G.** On New Species of Histeridæ,* **11,** Nov.—**Tournier, G.** Leg and antennæ regeneration by beetles, and their attendant appearances, **22.—Tutt, J. W.** Migration and dispersal of Insects : Coleoptera, **11,** Nov.

DIPTERA.—Coquillett, D. W. Original descriptions of new Diptera, **112. Escherich, K.** Concerning the formation of "Keimblätter," in the Muscidæ, **155.—Needham, J. G.** Diptera in Adirondacks. See General Subject, **112.—Osten Sacken, C. R.** Mosquito swarms responsive to sound, **8,** Dec.—**Osten Sacken, C. R.** The two methods of determining Diptera, **8,** Dec.—**Sternberg, Geo. M.** Transmission of yellow fever by mosquitoes, **154.—Wahl, Von Bruno.** Upon the development of the "hypodermalen Imaginalscheiben" in the thorax and abdomen of the larva of *Eristalis* Latr., **97.—Wasman, S. J.** Termittoxenia, a new wingless Diptera genus from Termite nests. Part II, **97.—Winn, A. F.** Attack of Asilus fly on Colias philodice **4,** Dec.

LEPIDOPTERA.—Beutenmüller, W. Descriptive Catalogue of the Noctuidæ found within fifty miles of New York City, **153.—Butler, Arthur G.**

On Names Applied to Certain Species of the Pierid Genus *Catasticta*, **9,** Nov.—**Clarke, W. T.** The Potato Worm in California, *Gelechia operculella* Zell., **152.**—**Dognin, Paul.** Description of New South American Lepidoptera, **55,** Nov. 1.—**Dyar, H. G.** Life Histories of North American Geometridæ, xxvii, **5,** Dec.—**Gibson, A.** Life History of Arctia virguncula, **4,** Dec.—**Gillette, C. P.** How to Fight the Codling Moth. Press Bulletin, No. 11, Colorado Agric. Exper. Station, Fort Collins, Apr. 1901.—**Grote, A. R.** Note on the generic title Burtia, **4,** Dec.—**Lyman, H. H.** A new *Gortyna*, and notes on the Genus, Dec. **4.**—**Packerd, A. S.** On the larval forms of several exotic Ceratocampid Moths, **5,** Dec.—**Pagenstecher, A.** Lepidoptera Rhopalocera family Libytheidæ. Specimen Sheet Genera Insectorum.—**Stitz, K.** The Genital apparatus of Microlepidoptera. **89a.**—**Weeks, A. G.** Description of seven new butterflies from Bolivia. Proc. of the New England Zool. Club, vol. ii, Nov. 22, 1901.—**Weeks, A. G.** New diurnal Lepidoptera from South America, **4,** Dec.

HYMENOPTERA.—Anon. Why it must be dark in the bee-hive, **84,** no. 46.—**Ashmead, W. H.** Description of five new Parasitic Hymenoptera, **112.**—**Brice, H. W.** Bees, Wasps and Bacilli. Some notes, **125.**— **Cockerell, T. D. A.** Species of Brachycistis from S. California. Apoidea.* See General Subject, **4,** Dec.—**Correspondence.** The brains of the bee, **125.**— **Correspondence.** Wasps and their nests. American Bee-Keeping, **125.**— **Hamlyn-Harris, R.** Biology of the honey-bee, **125.**—**Hamlyn-Harris, R.** Biology of the honey-bee ; its development during the Nineteenth Century, **125.**—**Harrington, W. H.** Note on Bacus, **4,** Dec.—**MacGillivray.** List and two new species of saw flies, **125.**—**Sladen, F. W. L.** Bee-Keeping in America. The Pan-American Expositon at Buffalo, **125. Wheeler, W. M.** The Parasitic Origin of Macrœrgates among Ants, **3,** Nov.

The Elements of Insect Anatomy. An Outline for the Use of Students in Entomological Laboratories. By John Henry Comstock, Professor of General Invertebrate Zoology in Cornell University, and Vernon L. Kellogg, Professor of Entomology in Leland Stanford, Jr., University. Third Edition, Revised. Comstock Publisbing Co., Ithaca., N. Y., 1901. This is a work of 139 pages and index. The fact that two editions have been exhausted speaks well for the value of the book. The modern terms used for denoting the position of various parts are a decided advance over the former ambiguous terms, and we hope all entomologists will adopt the newer system. The external anatomy of a common locust is given in detail. The cockroach is also used to illustrate the external parts. *Corydalis cornuta* is used as an example in studying the internal anatomy of an insect. A valuable feature is the using for study insects that have a wide distribution, or in some cases species are selected from both the eastern and western parts of the United States. There is an important chapter on insect histology which gives methods of staining and imbedding for sections. The work is evidently the outcome of a

ripe experience in teaching this part of anatomy and we can heartily recommend it. More text illustrations would be useful for beginners who take up the work without the aid of a teacher.—H. S.

In the December NEWS we noticed an important paper on one of the chief groups of aquatic insects, the Odonata Anisoptera of Illinois. Now a still more extensive article, dealing with these and other fresh-water hexapods, is presented to us in Bulletin 47 of the New York State Museum, under the title "Aquatic Insects in the Adirondacks, a study conducted at the Entomologic Field Station, Saranac Inn, N. Y., under the direction of E. P. Felt, State Entomologist," by James G. Needham and Cornelius Batten. Albany, 1901. Pp. 383-596, 42 text figures, 36 plates, 6 of them colored.

In partial fulfillment of instructions "To collect and study the habits of aquatic insects, paying special attention to the conditions necessary for the existence of the various species, their relative value as food for fishes, the relations of the forms to each other, and their life histories," the authors report that they have added extensive and important collections, especially of life-history material, to the State Mnseum at Albany; made some study of the place of aquatic insects in natural societies by application of qualitative and qnantitative methods (Part II, pp. 400-410); gathered a few data on the reproductive capacity of insects (p. 394) and on the food relations of insects and fishes (pp. 395-6). But their print cipal achievement has been the working out, by rearings, with more or less completeness, of the life histories of about one hundred species of aquatic insects, the immature stages of most of which are described in Part III (pp. 410-589), viz., 2 stone-flies (Perlidæ, pp. 412-418), 7 may-flies (Ephemeridæ, pp. 418-429) representing all the genera found in New York, 62 dragonflies (Odonata Anisoptera, pp. 429-540), 4 Neuroptera (2 Sialidæ, 2 Hemerobiidæ, pp. 540-561), 4 caddis-flies (Trichoptera, pp. 561-573), 5 Diptera, (pp. 573-582) and 2 beetles. There are keys to orders of aquatic insect larvæ, to genera of nymphs of Ephemerida, to families, subfamilies, genera and species of images and nymphs of Odonata Anisoptera and Neuroptera, and to families of larvæ of Trichoptera. In the Odonata one new variety (*Gomphus descriptus borealis*) and two new genera (*Helocordulia* for *Cordulia uhleri* Selys and *selysii* Uhler, *Dorocordulia* for *C. libera* Selys, *lepida* Selys and *lintneri* Hagen), in the Neuroptera two new species (*Sisyra umbrata*, *Climacia dictyona*) are founded by Prof. Needham, the characters of both imagos and nymphs or larvæ being given. Messrs. Macgillivray, Coquillett and Ashmead furnish descriptions of new species of saw-flies (Tenthredinidæ), Diptera and Hymenoptera, respectively, based on imagos (pp. 584-589); Mr. Betten wrote the chapter on Trichoptera; all the rest of the bulletin is by the senior author. The figures are mostly very good and useful, but either artist or lithographer is inexcusable for the wretched reproduction of the venation on Plate 10.

As will be seen from the above summary, the largest part of the work deals with the Odonata Anisoptera. This is the only part which the writer is able to discuss, but space forbids more than pointing out these features; Nymphs representing every genus, excepting *Gomphæschna* and *Micrathyria*, and of 62* out of 80 species occurring in New York are described. New characters are used in many instances to define the various groups. Considerable differences exist between the terminology of the larger groups and the keys here used and those employed in the Illinois bulletin; thus, Macromiinæ here apparently corresponds to Synthemiinæ there. All these innovations must be studied by comparison with material from other regions and of other groups.

Prof. Needham has unquestionably done more for the knowledge of the early stages of the Odonata than any other who has ever paid attention to this subject. May he succeed in a like treatment of the Odonata Zygoptera!—P. P. CALVERT.

NOTE ON ARADUS NIGER STAL.—On September 22d, 1901, while collecting in the woods about ten miles south of Buffalo, I came across a little colony of a small black *Aradus* under the loose bark of a partially rotten log of the white pine. As the species seemed a little different from any *Aradus* ordinarily found here, I searched the whole log, and took two adults and about half a dozen young in various stages of development. On reaching home I looked up the identity of my capture, and was surprised to find that the species was *Aradus* (*Quilnus*) *niger* Stal. This species was described by Stal in the Enumeratio Hemipterorum about twenty-five years ago, and, as I could find no mention of its having been observed by later students, I thought it an interesting capture, and made a few notes for future publication; but on receipt of the October ENTOMOLOGICAL NEWS, I saw that Mr. Otto Heidemann had just published a notice of this insect in the Proceedings of the Entomological Society of Washington. This paper probably gives all I had intended to say in regard to the species; so I will merely add the present note, believing it may be of interest as extending the known range of the species well to the north of its recorded habitat. It may be added to the list of Aradidæ taken about Buffalo, published in the Bulletin of the Buffalo Society of Natural Sciences, Vol. V, p. 181.—E. P. Van DUZEE.

I HAVE to record the capture of *Hydrobius tessellatus* Ziegl. at Roberts, Chester Co., Pa., on June 19, 1901. I secured one specimen in a rapidly running stream. This interesting beetle, rare at all places, has not before been recorded from this region, so far as I know.—J. CHESTER BRADLEY.

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* It is but fair to state that 18 of these were previously made known by Hagen and Cabot.

Aspidiotus sacchari in Java.—This sugar-cane scale insect was described from Jamaica in 1893. In 1897 (Bull. 6, Tech. Ser., Div. Ent.) I expressed the opinion that that it was introduced from the tropics of the old world, though it has never been found there. I have just received from Dr. L. Zehntner a pamplet entitled De Plantenluizen van het Suikerriet op Java." in which is a full description, with beautiful figures, of *Aspidotus sp.* found on sugar cane on that island. It is with much interest I recognize in this *Aspidiotus sacchari*, now for the first time reported from the eastern hemisphere.

I may add that the insect described and figured in the same paper as *Planchonia sp.* is, in reality, a species of *Antonina*, apparently distinct from the species found on bamboo.—T. D. A. COCKERELL.

Doings of Societies.

A regular stated meeting of the Feldman Collecting Social was held November 20th, 1901, at the residence of Mr. H. W. Wenzel, 1523 S. 13th Street, Philadelphia.

Twelve members present. Visitors: Mr. Stewardson Brown, of this city, and Mr. E. A. Schwarz, of Washington. The president, Mr. Charles W. Johnson, in the chair. The minutes of the last meeting were read and approved. Professor Smith recorded *Tenodera sinensis* from Elizabeth, N. J., but could not find any egg masses.

Mr. Laurent stated that last year all the female *Tenodera* which he had seen had green wings, but this year he had found a number with the wings shaded brown like those of the males.

Dr. Skinner stated that the eggs of *Tenodera* hatch in June and the young mature in the latter part of September or the early part of October. He also exhibited a butterfly which he had captured in Sapello Canon, New Mexico, he was inclined to consider it only an aberation of *Melitæa nubigena*.

Mr. Seiss exhibited four new species of Hemiptera which Mr. Laurent had taken at South Jacksonville during his last trip in Florida.

Mr. Daecke exhibited a specimen of an undescribed species of *Somatochlora* which had been taken July 16th at Dacosta, N. J. This is the second specimen known, the first having been taken by Dr. Calvert in 1892. He also records *Sympetrum albifrons* taken at Belleplain, N., September 16th, 1901. Previous records were from Massachusetts, Georgia, Missouri,

Texas, Illinois and Indiana. He also exhibited a specimen of *Gomphus nævius* from Castle Rock, Delaware County, Pa., which has never before been taken in the vicinity of Philadelphia.

Mr. Schwarz spoke of the abundance of dragonflies in Arizona around the water which was obtained from artesian wells, and wherever there was a little pool of water it teemed with insect life. He stated that at the top of the Grand Canon the fauna was boreal and ended abruptly at the brink ; at the bottom were large forests and a great deal of vegetation existed and the fauna was tropical. The dragonflies seemed to be the only insects flying from the bottom to the top of the canon, which is about forty miles wide and one mile deep.

Professor Smith stated that the species which he had recorded from New Jersey as *Epicauta callosa* was *Epicauta batesii*.

Mr. Laurent stated that owing to the fact that the streets and roads in the vicinity of Miami, Florida, were constructed of the white coral formation that underlies this part of Florida, if was very trying on the eyes when the sun shines, and to get relief he generally wore smoked glasses while travelling on the roads. He exhibited a large series of photographs which he had taken around Miami, and showed the wood from which he had raised specimens of *Lagochirus araneiformis* Linn., a rare *Cerambycid*.

Mr. Schwarz said he thought longicorns laid their eggs singly, but recently received them in large clusters. He also stated that in Arizona a party made a collection of micro-lepidoptera, and, not having the necessary small pins, they substituted the spines of a cactus which was growing in the vicinity, he thought they might turn out to be better than insect pins, because they do not corrode.

Mr. Johnson exhibited specimens of *Apocephalus pergandei*, the fly found in the ant's nest, and mentioned at the last meeting. The ant proved to be *Camponotus ferruginea*.

A resolution was passed and seconded to hold the minutes over for publication until they had been read at the next meeting, for further correction. Passed. Mr. Wenzel moved that

a vote of thanks be given to the secretary for the able manner in which he entertained the members of the social at the last meeting. Passed.—WM. R. REINICK, *Secretary*.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held November 21st, Mr. Philip Laurent, Director, in the chair. Fifteen members and associates were present.

Mr. Herman Horing presented a collection of blown larvæ, Mrs. Chas. Schaffer a small collection of insects from Glacier, B. C., and Mr. Lancaster Thomas a number of insects from Tennessee and North Carolina.

Dr. Philip P. Calvert exhibited the dragonflies collected by Dr. Skinner in Sapello Canon, New Mexico. The species are mostly of wide distribution. *Lestes disjunctus* extends from the Atlantic to the Pacific. *Enallagma calverti* is also rather widely distributed. *Ischnura verticailis* is a common eastern species. *Æschna clepsydra* is a circumpolar species and New Mexico is the southernmost place from from which it has been recorded. *Æschna multicolor* is a common western species. There was a species of *Argia* which is probably new. Mr. Seiss said he had been presented with a specimen of *Anasa armigera* which had an abnormal, peculiarly spiked antennæ, but in other respects the specimen was normal.

Mr. Viereck showed specimens exhibiting remarkable resemblance between some Braconids and certain Hemiptera from British Guiana.

Mr. Huntington remarked that the specimen of *Sphyracephala brevicornis* exhibited at the last meeting came from Ithaca, New York, a locality with no skunk cabbage near by. It usually occurs about this plant.

Mr. Laurent exhibited alcoholic specimens of the early stages of *Tenodera sinensis* and also some spread specimens of the adults.

Dr. Calvert spoke of the classification of the smaller dragonflies. He thought that they should be arranged in families according to their evolutionary development. *Calopteryx* represents the oldest type and the Agrions probably come next. The venation was considered the best guide for this purpose.

The venation in the legions proposed by Dr. Selys was explained and illustrated. The speaker also called attention to the wings of the nymph of *Tenodera sinensis*, which he compared to those of an Odonat, and pointed out the differences.

Carl W. Fenninger, George M. Greene and Dr. W. M. Van Atter were elected associates of the section.

HENRY SKINNER, *Recorder.*

The nineteenth regular meeting of the Harris Club was held at 35 Court St., Boston, on the evening of September 20, 1901. President Newcomb presided, and sixteen persons were present. Mr. Harry Mitchell was unanimously elected to membership.

Mr. Newcomb entertained the club with an account of the discovery and capture of *Chionobas katahdin* n. sp. in June last, and later exhibited some interesting portions of the collection of Lepidoptera made by the late A. F. Chatfield.

On behalf of Mr. A. H. Clark, Mr. Newcomb reported the occurrence of *Papilio cresphontes* in Newtonville, Mass., September 13th.

Mr. Low exhibited a fine specimen of *Anartia jatrophæ* captured on Atlantic Ave., Boston, near the fruit wharves, June 29th.

The twentieth regular meeting was held on the evening of October 18, 1901. President Newcomb presided, and nineteen persons were present. Messrs. Oliver B. Coe and C. L. Schwartz were unanimously elected to membership. It was voted that hereafter the regular meetings should be held on the second Tuesday of each month.

Butterflies of the genus *Argynnis* were exhibited and discussed by various members. Mr. R. W. Denton called attention to the fact that the males in this genus are usually distinguished by the fringe of long hairs close to the subcostal vein of the hind wing.

Mr. Kirkland spoke of finding the English scale insect, *Asterodiaspis quercicola*, on imported English golden oaks in the Middlesex fells. It appears to be spreading to the native

white oaks. It is very difficult to kill, the ordinary contact insecticides, such as whale-oil soap, kerosene emulsion, etc., having little effect. There is reason to hope, however, that it will not multiply to an injurious extent, since it is accompanied by its natural check, a minute hymenopterous insect, which was probably introduced at the same time. Mr. Kirkland showed photographs of the scales on the twigs. The same speaker also showed an interesting hermaphrodite specimen of *Ocneria dispar*, the left half having the characteristic markings of the light ♀, the right half those of the dark ♂.

Mr. A. H. Clark gave an interesting account of some of his adventures on a recent collecting trip in Venezuela.

These notes are taken from the records of Mr. A. P. Hall, secretary *pro tem.*

The twenty-first regular meeting was held on the evening of October 12th. President Newcomb presided, and fourteen persons were present. Mr. F. S. Cutting was unanimously elected to membership.

Exhibits of butterflies of the genera *Melitæa* and *Phyciodes* were made by various members.

Mr. W. L. W. Field exhibited two specimens of *Chionobas katahdin* which were captured by Mr. M. L. Fernald, of the Gray Herbarium of Harvard University, in the course of his botanical exploration of the mountain in 1900.

Mr. Morse discussed the use of blocks of standard sizes in the arrangement of museum collections, and Mr. Clark concluded his account of his South American experiences.

W. L. W. Field, *Secretary.*

Minutes of meeting of the Brooklyn Entomological Society held at the residence of Mr. George Franck, 1040 DeKalb Avenue, Brooklyn, N. Y.

December 6, 1900.—Twenty-two persons present. President John B. Smith in the chair. Mr. Gustav Beyer was reinstated as a member. Thirteen new members were elected.

Mr. Wasmuth exhibited a fine aberration of *P. philenor*, the nearly matured larva of which had been captured by him

in front of his residence in Brooklyn, and which emerged about September 15th last. On both the upper and under sides of the wings there appeared a deep border of sagittate or subguadrate indentations caused by the invasion of the interior by the white marginal lunules to such an extent as to entirely or nearly comprehend the submarginal white spots, with more or less diffusion, particularly at the apex. Mr. Wasmuth stated that there was nothing in the appearance of the larva nor its subsequent treatment, so far as he was aware, to cause the deviation. It bears the same relation to *philenor* that *calverleyi* does to *asterias*. Mr. Wasmuth also exhibited a nearly full-grown larva of *P. asterias* which he had taken during the present month feeding on parsley, and which, favored by the absence of snow, had survived the frosts.

Mr. Franck exhibited some light and dark forms, with intergrades of *Halisidota cinctipes* and *edwardsii* from Vera Cruz, Mexico, and Colorado, and claimed that these species should be considered identical.

January 3, 1901.—Tweniy-six persons present. President Smith in the chair. Prof. Frank F. Harding was elected a member.

Paper by Mr. E. L. Graef, on the history of the several associations which had finally resulted in the organization of the Brooklyn Entomological Society, together with some facts relating to the efforts of the society to promote the purposes of its organization. At first it was particularly difficult to obtain identification of species in the Lepidoptera, because so many were undescribed, and his friends and himself were several times greatly disgusted on discovering that some of the entomological wiseacres to whom they applied for aid made a practice of manufacturing names *ad libitum* without regard to existing nomenclature.

Paper by Prof. Smith, upon the Development and Spread ot Entomology in Recent Years, showing that this branch of science has kept pace with the general progress which has made the nineteenth century unparalleled in history. This was particularly in the growth and general diffusion of entomological learning and literature, the improvement in system-

atic investigation and the establishment of experiment stations. The demand for skilled entomologists was for a time greater than the supply, and the enormous increase in the number of well-identified and more or less extensive collections both public and private made the work of professional and amateur much easier.

February 7, 1901. — Twenty persons present. President Smith in the chair. Messrs. W. D. Kearfoot and F. E. Watson were elected members.

Letter from Prof. F. G. Schaupp, a former member of the society, relating the collecting experiences of his boyhood days in Germany, and the nomenclature adopted by himself and his companions to distinguish some of the familiar forms.

Paper by Mr. Geo. Franck upon collecting *Catocala* and and *Argynnis diana* at Evansville, S. Ind. Despite a brief but violent storm which ditched his horse and wagon, scattering his implements and thoroughly drenching him, he captured in a piece of virgin forest, in a few hours, hundreds of specimens of *Catocala* embracing 38 species, many of them rare, with fine variations. Near the same locality, on the following day, he took 20 ♀ *Argynnis diana*. They were readily taken, being sluggish in flight and not easily disturbed.

Mr. Jacob Doll recalled his finding *Catocalæ* so numerous at Bayonne, N. J., that in a short time he took 187 specimens, 5 of which were *marmorata*, and including in all 27 species. Also a similar instance in Arizona, where hundreds of specimens clustered on sugar upon 5 or 6 trees, but including only two species, *verriliana* and *chelidonia*. In none of the instances above related were any of the insects to be seen upon the following day, and in subsequent years they were found but rarely in these localities.

Dr. Meeske related his finding these insects fairly plentiful in one piece of woods in Cypress Hills, L. I., upon one day, their total absence the next, and his subsequent discovery of them in a wood at some little distance.

Mr. Weeks suggested that these disappearances might be explained in one case by the fact that these insects are strong and rapid in flight, and probably migrate from place to place,

and in the other that an inordinate multiplication of any one species almost invariably creates a corresponding increase of its parasitic foes, which not only check any surplus production, but may render any species unusually rare for a number of years. Allowances must also be made for climatic influences, and probably not one season in ten was wholly favorable to insect life.

Prof. Smith displayed some *Scolytids*, including specimens of *Dendroctonus* n. sp., *T. Calligraphus* and *cacographus*, *Gnathotrichus materarius* and *Crypturgus alutaceus*, taken in or under pine bark at Lahaway, N. J., on November 21, 1900, also portions of the burrowed bark showing that it was possible to identify the species by the larval galleries. Whenever a pitch patch appeared on the exterior, *Dendroctonus* in the last three stages would generally be found. *Gnathotrichus materarius* did not tunnel in the bark, but made deep and intricate galleries in the wood.

Mr. Franck exhibited a fine series of *Callimonpha lecontei* and *confusa* showing gradations which seemed to prove beyond question the identity of the species.

March 7, 1901.—Twenty-five persons present. President Smith in the chair. Mrs. Annie Trumbull Slosson was reinstated as a member, and Dr. R. Ellsworth Call and Mr. John Frederick Steinbrecher were elected members.

Mr. Wm. Beutenmuller, President of the New York Entomological Society, exhibited some interesting colored lantern slides of local lepidoptera with larvæ photographed in natural positions upon their respective food plants. Discussion approbative of this method by Messrs. Call, Smith, Frank and Weeks.—ARCHIBALD C. WEEKS, *Recording Secretary.*

The regular quarterly meeting of the California Entomological Club was held on the evening of November 15, 1901, at the residence of the President, Chas. Fuchs, 212 Kearney St., the members being his guests. The meeting was called to order at 8 o'clock by President Fuchs. The minutes of the last meeting were read and approved.

The reading of Prof. H. C. Fall's paper on the Coleoptera

of Southern California then followed. It was discussed by Messrs. Letcher, Ehrhorn, Grundel, Fuchs and Blaisdell.

It was agreed that an interfaunal line should be decided upon, separating Northern and Central California. The migration of insects was discussed by Messrs. Letcher and Ehrhorn in particular.

It was finally agreed that each member of the club should consider himself a member of a committee to look up and report on the distribution of insects, especially the order in which he is interested, for the purpose of correlating such distribution with certain geographical boundaries, as may be best for on interfaunal line, and to report at the next meeting of the club.

Mr. Letcher then presented the following resolution, which was read and unanimously accepted :

Resolved : That the California Entomological Club recognizes the value of Prof. H. C. Fall's contribution to our knowledge of the Coleoptera of California, and that, on behalf of the entomologists of the State, our thanks for his work are extended.

Dr. Blaisdell then read a paper on the Frons in *Bembidium*, with descriptions of five new species from California.

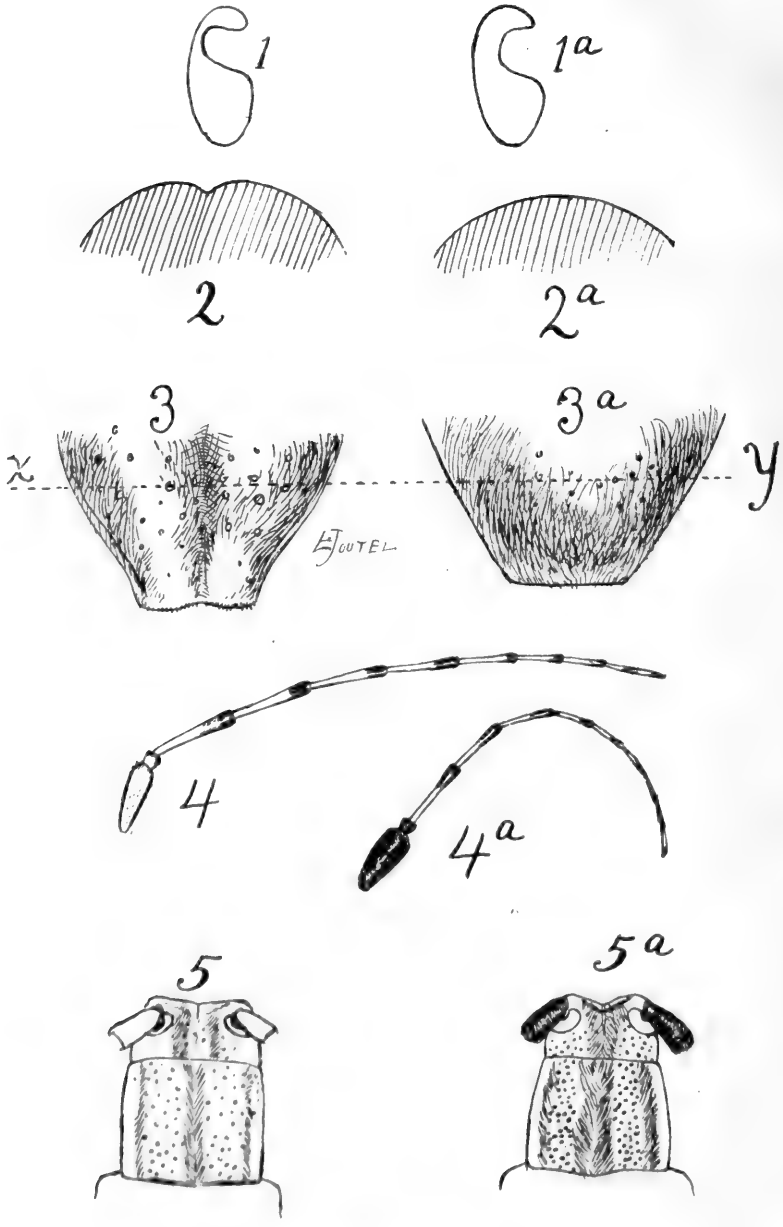
F. E. Clark exhibited a block of Hymenoptera and Diptera collected about Napa, Cal.; Edward Ehrhorn, three large photographs of Exotic Scarabæidæ ; Dr. Blaisdell, ink drawings of *Bembidium inæquale*, *littorale* and *punctatostriatum*, of the larva and pupa of *Cicindela 12-guttata*, pupa of *Eleodes dilaricornis* and mouth parts of *Platynus brunneomarginatus ;* Mr. Fuchs, two boxes of Scarabæidæ ; Mr. Nunenmacher, a box of native and exotic Coccinellidæ, and Mr. Grundel a specimen of *Lycæna sonorensis* collected near Alma, Santa Clara County, California.

Then followed a debate by Messrs. Letcher and Ehrhorn on the effect of altitude on the variation of species.

Eleven members and three visitors present. Seven new members were elected.

Social discourse. Adjournment.

F. E. BLAISDELL, M.D., *Secretary.*



SAPERDA (JOUTEL).

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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CONTENTS:

A New Species of Saperda.

By LOUIS H. JOUTEL.

On a recent visit to Philadelphia to examine and study the material in the collections of the late Dr. G. H. Horn and the American Entomological Society, for a forthcoming paper on the genus *Saperda* by Dr. E. P. Felt and myself, I found in the collection of Dr. Horn several females of an undescribed species having characters of both *calcarata* and *mutica*, but specifically distinct from either. The specimens in the Horn collection were isolated by Dr. Horn who evidently considered them as different.

Since then I have received material from the National Museum, Washington, D. C., and found in it a fresh male of the same species. I take pleasure in naming it in memory of Dr. Horn.

Saperda hornii, sp. nov.

Black; shining, entirely covered with a dense layer of light yellowish gray hair lighter beneath and diversified above with irregular blotches and streaks of dark yellow, arranged on the elytra in broken and irregular longitudinal lines; the line nearest the outer margin and just below the

humeral angle unbroken, except by the punctures, and continuing nearly to the tip. Elytron obliquely narrowed at apex. Thorax cylindrical with a longitudinal stripe of dark yellow hair on each side and on top, underside yellow. In the male the thorax is very long, being about one-third longer than wide; in the female as long as wide. Scutellum yellow. Entire insect covered by rather large and deep glabrous punctures slightly smaller beneath; they are much larger than those of *mutica* and only about one-half as numerous. Head; hairs yellow, changing to gray at the labrum. Legs and underside of body light yellowish gray, with glabrous punctures; antennæ annulate except the first joint, which is entirely covered with light gray hairs, and is moderate in thickness, not being enlarged as in *obliqua* and *mutica*, rest of antennæ quite robust with basil two-thirds of each joint covered with light gray hair, remainder black. The pygidium of female has a deep longitudinal depression along the median line, dividing it into two lobes, tip also bilobed. Eyes nearly divided. Size, ♂ 16 mm. ♀ 20 mm.

Types, one female (Calif.) collection Dr. Horn. One alem (Yosemite, Calif.), collection Coquillett, National Museum. Male and female concolorous.

This insect can be readily separated from *mutica* by the bilobed last dorsal segment (Figs. 2 and 3), which in *mutica* is very convex (Figs. 2*a* and 3*a*) and, therefore, highest in the middle; also by the first joint of the antennæ being gray and moderate in thickness, while in *mutica* the joint is swollen and black, the rest of the antennæ in *mutica* is also thinner and shorter (Figs 4 and 4*a*). The eyes are much more divided than in *mutica* (Figs. 1 and 1*a*); the thorax is about as wide in front as back, but in *mutica* the front is narrowed (Figs. 5 and 5*a*).

It is very desirable for the monograph on *Saperda* by Dr. Felt and myself mentioned above, that we see more material in the genus from all parts of the West, and all material sent me for study will be returned.

EXPLANATION OF FIGS.

Fig. 1. Eye of *hornii*, showing degree of divison compared with Fig. 1*a*, eye of *mutica*.

Fig. 2 and 2*a*. Transverse section of last dorsal segments of *hornii* and *mutica* at dotted line shown in Fig. 3 and 3*a*.

Fig. 4. Antennæ of *hornii*; Fig. 4*a*. Of *mutica*.

Fig. 5. Head and thorax of *hornii*; Fig. 5*a*. Of *mutica*.

All figures greatly enlarged.

The Eumaeus Debora.

By Prof. Luis Murillo, Jalapa, Mexico.

The beautiful Mexican Lepidopteron, known here under the name of Guinea butterfly, visits us nearly every season even in winter, always in the afternoon and never in the morning. Its flying is apparently very slow and it seems not to rest on any plant. But if in our garden there is a *Dioon edule*, or *Macrozamia*, or the graceful and worthy Japanese specimen called *Cycas revoluta*, then it hastens its flying around a plant until it sits on the reverse of its tender leaves.

The cycads to which the mentioned vegetable belongs are very interesting plants. They form a link between the monocotyledones and the dicotyledones. They are like conifers, and they are considered by some botanists as a subdivision of the same family, but their features are so clear that there is no doubt but that the *Gymnosperma* class can be divided into three families—*Cycadea*, *Coniferæ* and *Gneteæ*.

The flora prior to ours exhibited giantlike specimens of *Cycadea*, as testified by the 250 species of fossils that have already been classified.

They appear in the pit-coal terrane represented by the *Næggerathia* and the *Pterophyllum*, but they are yet rare in the beginning of the Trias. At the end of the Triassic epoch they are plentiful; however, in the middle of the Jurassic period is when they reach their largest development. Once these have been classified: in the Rhætic about fifteen species, in the Lias seventeen, in the Oölite sixty-three, in the Superior Jurassic sixteen, in the Wealdian thirty; then they diminish sensibly in the Cretaceous, and increase as we ascend in the Tertiary layers. At present this family has been reduced, and its representatives live preferably in tropical climates. Perhaps the *Eumæus debora* guest of the actual *Cycadea* is one of the most ancient Lepidoptera.

Now I just remark that in the same way these plants have a great vitality, for if a trunk of one of them is got without leaves and roots, and left abandoned for one year, it is not a long time before it is covered with tufts of leaves, and in a few years the plant recovers its ancient vigor. So the *Eumæus*

debora is shown to have great vitality, for if it is kept in a dark box some hours after being born, it can remain even for twenty-six days without taking any food, and, if left free at the end of this time, flies swiftly without showing any exhaustion. I do not know any Lepidoptera that can bear so many days of captivity and abstinence. Is there any relation between the vitality of the insect and the vegetable it feeds on? I do not know it.

When the female of the *Eumæus debora* has already chosen the tender leaf of a Cycad, it lays, one by one, on the under side of one of the most tender small leaves about 50 or 60 spherical eggs, with half-millimetre diameters, of white color, covered by a resistant skin and invested by a sticky substance that makes them adhere to the surface of the leaf.

If time is propitious—I mean if days are warm—after a while and by sunlight action the shells are broken, and some small worms of reddish color appear, which begin to gnaw the tender part of the leaf nearest them. Thirty or forty days after, the caterpillars have reached their full development. The caterpillar presents an elongated body, half-cylindrical, with the flat part toward the extremities, 20 millimetres long by 5 in diameter, divided transversely by nine red bands that are white-striped on their superior part. All the skin is full of short and sparse hairs. The caterpillar has sixteen legs disposed in pairs, being the three forelegs, real ones and the others false.

The first three segments of the caterpillar's body present greater consistence than the others. The real legs are the ones which the animal will conserve at last.

The false legs are short and fleshy processes which in their apex contain a cavity that, acting as an air-tight cell, assists the animal admirably with its locomotion movements. It has a dark-gray head and is endowed with great mobility; eyes are small and simple. The mouth is provided with powerful jaws with which it cuts the strong leaves of the plant it lives on. The caterpillar undergoes during life even three changes, and, to leave its old tegument, remains inactive without taking any food until two or three days.

At the end of forty-five days the caterpillar loses its brightness of color and associates with its neighbors to seek for the

reverse of a hard and strong leaf, that can keep it from the rains and its enemies, which are chiefly the birds. Having chosen the spot, they lay a long silk net, made by themselves. This being finished, they each choose a place side by side and remain very quiet, without taking food, about two days, and the third day they are suspended vertically from the extremity of the abdomen, and then, by means of the belt which they make with very fine threads, become suspended horizontally. Once the insect is in this position, it removes its caterpillar garment and begins its chrysalis life. The chrysalis is about 18 millimetres in size, of a dark-red color, black-spotted. Two or three months, according to the time of the year, the *Eumæus debora* remains in a chrysalis state, and when this time is up, on a warm morning, between nine and ten, it breaks the antero-superior part of the cover in which it was closed, and the butterfly comes out in such a state of weakness that it can hardly stand.

At this moment the colors of the butterflies are opaque and the wings are folded against the body.

The animal gets a very bright aspect by the action of the sunbeams, spreads its wings and commences to fly slowly. Two hours after, it enjoys full movements, expelling through the anus a yellowish liquid of a particular odor, and rushes into the world of adventures.

The male, after accomplishing the copulations, flies about for a time, and the female, once fecundated, hunts anxiously for a Cycad to deposit its eggs in, dying some hours after.

The *Eumæus debora*, in its perfect state, is a Lepidopteron, 30 millimetres long, with its four round wings of velvet aspect, bright black color, full of numerous and symmetrical golden spots, on its inferior side, and blue and green, with metallic reflections, on the superior part. The posterior borders of the wings are fringed with a very fine white flounce that takes a tint intensely black on the abdominal region. This is also of a very black color and is covered with thin filiform scales. The thorax shows on the back, a blue spot, with golden reflections. The head shows two great compound eyes bordered by a circle of white, and small scales and two soft and flexible antennæ. The palpi (lips) are prominent.

The *Eumæus debora* in its perfect state, feeds on sticky substances which flow from the trunks, leaves and fruits of the *Cycadea*.

Letters from Thomas Say to John F. Melsheimer, 1816–1825.—X, XI.

Philad^{a} April 26th 1823

My Dear Sir !

I duly received y^{r} excellent letter & more recently the valuable box of insects you were so good as to send me. I beg you to accept my most sincere and hearty thanks for them, as well as for the excellent remarks with which they were accompanied. Most interesting as they truly are, I have to regret to say that I have not yet had leisure to examine them as closely & attentively as I wish to do. My time has recently been fully occupied with preparations for another western Exped^{n} under the orders of the Secretary of War, for the exploration of the St. Peter's river & the 49° of lattitude. We expect to depart on that service on tuesday next, & if our estimate of distance & time is accurate, we shall return here next autumn, if no unforeseen casualty occurs. I am sorry that our correspondence which is so interesting to me, is thus so much & so frequently interrupted, but we must endeavour, by & by, to compensate for the hiatus by longer and more frequent letters. I have begun to publish pretty largely on insects, & shall endeavour to send you the commencement of a paper on the Carabii, now printing for our Philosophical Transactions ; you will observe that I have taken the liberty to mention your name not unfrequently in that paper as well as elsewhere, as in duty bound as well as inclination & justice. I have also quoted your catalogue for every species that I could identify, that is, for every species you or your father sent me. I have also appropriated Mss. enough to supply our Journal during my absence, this little work I have directed to be regularly sent to you. It will afford me great pleasure to learn that these several essays interest you. In the mean time I remain as ever

truly & affectionately your friend
Thomas Say

Philad^{a} Novemb^{r} 30th 1823.

My Dear friend !

In my last letter I informed you of the reception of the very valuable box of insects with which you favoured me, & stated at the same time that my haste of preparation for another journey through the wilderness prevented my making any remarks at that time upon the interesting individuals it contains. I am happy to say that this journey has been successfully performed, & we have all returned to our families & friends. Our rout was as follows, viz. We departed from this place & arrived at Wheeling by way of the great national road ; thence to Columbus, Fort Wayne, & Chicago at the southern extremity of Lake Michigan ; making another outfit at that place, we struck across the country by rout till then untravelled excepting by Indians & their associates to Prairie des Chiens on the Mississippi. We then ascended the Mississippi to the Falls of St. Anthony, thence along the St. Peters to its source ; thence directly north, by way of Sioux river & Red river to Pembinaw, a settlement formed by Lord Selkirk ; there we established the north boundary line of the United States & took possession of that part of the country with the customary military ceremonies. We then descended the river into the British territories, passed through the lower portion of Lake Winnepec, through the Lake of the woods which is thickly studded with charming islands, through Rainy lake & Dog river to Lake Superior. Within about fifty miles of this lake the whole river is precipitated over a ledge of rock into a rocky chasm to the depth of 130 feet, the concussion of the water is terrific & causes a very sensible trembling of the earth around. We were under the necessity of crossing Lake Superior from West to East in an open flat bottomed batteau during the equinoctial storm. This we accomplished in fifteen days. We then went to Mackinaw, then passed through Lakes Huron & Erie, & visited the falls of Niagara ; at the Genesee river we entered Clinton's grand Canal & after a voyage through it of the most agreeable kind, at the rate of four miles an hour night & day, we arrived at Albany.

On this extensive round we suffered but little for want of

food, & our dangers from Indian hostility were far less than those of our former expedition. We passed over that immense country in six months so that you will be well aware that we had not much leisure to make very abundant collections ; nevertheless I obtained some insects that are of some interest.

You will observe by the number of the Journal that I now send, my commencement to describe our Coleopterous insects. This paper is to include such as were obtained during our expedition to the Rocky mountains. It will be succeeded by a description of the insects of this country generally. You will observe that I have carefully quoted your "Catalogue" for all such species as I have been favoured with from you & from your father. I hope to send you soon an extensive paper on the families of Carabus, Dytiscus & Gyrinus ; it is already printed off. Also a paper on the Hymenoptera, & another on the Neuroptera which I have had published and of which I expect soon to have some extra copies. Whatever I publish shall be submitted to your inspection & I beg in return your candid opinion and usual critical observations upon them. I have the ambition to do as much as possible & to perform my work as well as I can, I must therefore task the acumen of my friend to correct my errors when he perceives them, & to teach me to do better when he perceives the way open to amendment.

* * * * * * * * *

I remain truly & cordially
your friend & Obd^{t} Serv^{t}
Thomas Say

[NOTE.—In a footnote appended to the first of these letters, F. E. Melsheimer is said to have probably represented the third generation of the family in America. I now learn that he was the brother of J. F. Melsheimer.

This last letter brings this series to a close, as the following two or three letters, dated 1824–25, are not thought of sufficient general interest to justify their publication here.—W. J. F.]

MR. S. H. HAMILTON of the Academy of Natural Sciences, of Philadelphia, is about to visit Cuba on a collecting trip. He will be pleased to hear from any one wishing Cuban insects. His address will be Santiago, care of "General Delivery."

Some New Coccidae.

By GEO. B. KING, Lawrence, Mass.

To-day, April 11th, I have just received a very pretty and distinct ant-nest species of coccid from Prof. Cockerell, for which he suggests the name *Ripersia fimbriatula*, giving also some descriptive names.

Ripersia fimbriatula n. sp. Ckll and King.

♀.—Small, oval, 1½ mm. long, 1 broad, of a light yellow color, with a marginal fringe of cottony filaments and the entire body coated with white powder. Placed in alcohol, they are light, delicate yellow tinged with green. Boiled in caustic potash, they turn to a bright red-brown color. The internal juice being removed, the derm is colorless; mouth-parts, antennæ and legs light yellow. Antenna six jointed, with the sixth longest, then three. One + two next and equal. Five is a little longer than four, which is the shortest. Formula, 63(12)54. Measurements of the several joints: (1) 40, (2) 40, (3) 56, (4) 20, (5) 32, (6) 76. All of the joints have short, thin hairs, those on the sixth being somewhat longest. Legs stout, quite bristly; middle leg, coxa 48 long. Femur, with trochanter, 160; tibia, 88; tarsus, 76; claw 20, broad; coxa, 100; trochanter, 60; tibia, 36; tarsus, 28. Claw thin, sharp, not much curved. Digitules of tarsus and claw minute, indistinct, with small knobbed ends. Anal ring normal, with the usual six but thin bristles. Caudal tubercles small, with one short hair.

Hab.—Las Vegas, New Mexico, April 7, 1901, in nest of *Lasius americana* Em. under rocks; collected by Mrs. Wilmatte P. Cockerell. Also found last year at Santa Fe, N. M., by Mr. T. D. A. Cockerell, but the material too scanty for description. This species is quite different from a yellow species found in ant nests in Massachusetts, *Ripersia flaveola* Ckll., which has practically seven jointed antennæ and is larger, although we find some individuals with only six joints, measuring as follows: joint (1) 40, (2) 44, (3) 44, (4) 36, (5) 28, (6) 72. *R. fimbriatula* seems to be nearer to a species with six jointed antennæ, which was mixed with a lot of coccids from ants' nests in Massachusetts found by me and described by Prof. Cockerell in Can. Entom., 1896, p. 223, as *R. lasii*, the latter having jointed antennæ. I propose to call this six jointed form, which is certainly distinct, *Ripersia candidata* King. Although the antennal formula of this species is nearly the same as that of *Ripersia fimbriatula*, the respective

lengths of the joints are very different, as will be seen from the following measurements: joint (1) 32, (2) 28, (3) 40, (4) 16, (5) 20, (6) 68. Formula 631254. The antennæ are also very much smaller and, in fact, the smallest of our American species. Prof. Cockerell remarks that in its marginal fringe of cottony filaments *R. fimbriatula* resembles the New Zealand *R. formicicola* Maskell.

Ripersia cockerellae n. sp.

♀.—Red-brown, oval, 2 mm. long, 1½ broad, with two caudal cottony filaments. The insect is covered with a thin coating of white powder, which gives it the appearance of being a light pink color when alive. After being put in alcohol it soon turns to a cinnamon brown and quite translucent. Boiled in caustic potash, they turn to a dark claret color.

Mounted specimens colorless. Legs, antennæ and mouth-parts ochreous. Mentum elongate, dimerous, thickly beset with short, fine hairs. Antennæ seven jointed, short, not stout. Joint seven is longest, then one, two and four next and equal, then six, which is very little larger than 5. Joint three is the shortest. Formula: 71(24)653. All of the joints have several short hairs. Measurements of the antennal joints: (1) 40, (2) 36, (3) 24, (4) 36, (5) 28, (6) 32, (7) 64.

Front leg ordinary, with the coxa 96 long. Femur, with trochanter, 180; tibia, 132; tarsus, 72; the width of coxa, 84; trochanter, 64; tibia, 28; tarsus, 28. The claw is 28 long and decidedly thinner than in any of the genus known to me. As to the digitules of the tarsus and claw, I was unable to find these. If these are present in this species they must be very minute indeed. Anal ring normal, with the usual six hairs and not very long or stout. Caudal tubercles with one not very long bristle and two short spear-shaped spines and several short, thin hairs.

Hab.—In nest of *Lasius americanus* Em., at Beulah, Sapello Canon, New Mexico. Altitude, 8000 feet. This is the highest altitude where a mealy bug has been known to live. Found by Mrs. and Prof. Cockerell, and named after Mrs. Cockerell, who was the first lady to write to me on a biological subject. The species is easily known from *R. kingii* Ckll., to which it is most allied, by its antennæ of seven joints, with the third shortest; by the leg, which has the tibia and tarsus much shorter and both equal in width; the very thin, sharp claw, the central loop being much thinner and shorter and the mentum well covered with short, fine hairs.

Phenacoccus simplex n. sp.

♀.—Oval in shape, 3 mm. long, 2 broad, of a reddish-brown color,

Body thinly covered with a white secretion. Segmentation distinct. Boiled in KOH, cleared and mounted in balsam, practically colorless except around the area of the grouped spines, which is tinged with yellowish-brown. These groups are variable in size and the spines are conical in shape, short, stout and placed close together. The dorsum is quite thickly beset with short conical spines and thin, not at all long, hairs. These not uniform in length. Legs, mouth-parts and antennæ yellowish-brown. Legs long and stout, quite hairy. Middle leg coxa 320 long; femur, with trochanter, 560; tibia, 500; tarsus, 200; claw, 60. Antenna nine jointed, measuring as follows in length: (1) 120, (2) 120, (3) 140, (4) 76, (5) 80, (6) 88, (7) 80, (8) 92, (9) 140. Formula: (39) (12) 86 (57) 4. All the joints have short, thin hairs. Segments well marked by suture. Mentum large, apical half with several long hairs.

Hab.—Lone Pine, California, on *Atriplex*. Collector unknown. Sent to Prof. Cockerell, who turned it over to me. Superficially it looks very much like a *Dactylopius*. On the same plant were some *Ceroplastes*, probably *C. irregularis* Ckll. new to California.

Aspidiotus Hederae in Australia.

By James Lidgett.

In September, 1899, I forwarded some species of Coccidæ collected in Victoria to Dr. L. O. Howard, including a species of *Aspidiotus* in situ, which was quite unknown to me and distinct from any of our Australian species. This material was subsequently handed over to Mr. C. L. Marlatt to work up, and recently I received from that gentleman a communication, in which he recognized the insect as *Aspidiotus hederæ* Vallot.

This is the first time *A. hederæ* has been discovered in the Australian region, and is, therefore, another illustration of how civilization is scattering over the earth's surface many kinds of insects. I have not yet been able to ascertain the name of the host plant, which is an exotic tree resembling American ash. It was planted fourteen years ago from Melbourne nursery stock. The trunk, branches and leaves were infested, the ♂ scales being confined to the latter.

By way of illustrating how scale insects may be—and, indeed, often are—disseminated, it may here be remarked that

the tree referred to above is growing quite close to a butter factory, and I myself have often seen drivers of milk carts cutting switches therefrom to use instead of a whip, and on the return journey cutting off the twigs and leaves, leaving them scattered along the road, the switch, no doubt, ultimately reaching the homestead.

The range of distribution of *hederæ* is evidently extending. Mr. G. B. King reports it from Bermuda (Psyche, p. 350, April, 1899) on *Cycas revoluta*, and says it is a very common scale throughout the United States, and in his "Contributions to the Knowledge of Massachusetts Coccidæ," III, it is stated to be "a very common pest in all greenhouses at Lawrence." Now that it has established itself in Australia, it will be interesting to compare it minutely with *Aspidiotus carpodeti* of Maskell, a New Zealand species infesting *Carpodetus serratus* and *Vitex littoralis*, and which Professor T. D. A. Cockerell has put down as a synonym of *hederæ*. But I cannot quite follow Prof. Cockerell. In January, 1899, in the "First Supplement to the Check-List of the Coccidæ," *Asp. carpodeti* is one of 23 synonyms of *hederæ*; yet in May of the same year the same author, in "The Industrialist," identifies a species from Oregon as *Asp. hederæ* var. *carpodeti*, Mask., on oleander and pandelon.

Quite recently I had an opportunity of examining the type of Maskell's *A. carpodeti*, and compared it with specimens of *A. hederæ* as determined by Mr. C. L. Marlatt. I am now quite satisfied that *carpodeti* is a very distinct species, with four lobes, median pair unusually large, second pair very similar to *nerii*. Four groups of spinnarets or ventral glands, cephalolaterals 4 to 6 orifices, caudolaterals 8 to 12. ♀ puparium convex, brown in color; exuviæ central, quite blackish. Maskell says that some specimens are slightly elongated. Average diameter 1.75 mm. ♂ puparium narrower, parrell-sided, brownish in color. Average length 1.58 mm. Adult ♂ of normal form. Antenna of ten joints, the fifth, seventh, eighth and ninth longest. Abdominal spike excessively long, at its base a large tubercle.

The very prominent median lobes are distinctly unlike the abdominal extremity of *hederæ*.

♀ puparium of *hederæ* is convex, circular, grayish-brown in color. Exuviæ yellow, central or nearly so. Adult ♀ with six large and very distinct lobes, which alone clearly separates *hederæ* from *carpodeti*.

I am very sorry that any confusion should have arisen as to the validity of Maskell's species, and I would take this opportunity of protesting against the practice of invalidating another author's species unless really warranted, more particularly so when the author of that species is dead. The practice is becoming intolerable, and the sooner it is checked the better, if our classification "as a means to an end" is to be successful.

Photographs of Entomologists.

The following is a list of the photographs of entomologists contained in the albums of the American Entomological Society. They are a source of great interest to the members of the Society and also to many visiting entomologists. It is our desire to make the collection as complete as possible, and if your name is not in the list please send us your photograph. There are quite a number of persons not represented, and we sincerely hope they will have their pictures taken at once.

HENRY SKINNER.

Abbott, W. L.
Adams, C. C.
Agassiz, Louis.
Aich, Hermann.
Akhurst, John.
Albright, Max.
Aldrich, J. M.
Alwood, W. R.
André, Ernest.
Angus, James.
Ashmead, W. H.
Ashton, T. B.
Baird, S. F.
Banks, Nathan.
Bang Haas, A.
Barrett, O. W.
Bassett, H. F.
Beales, E. V.
Beutenmuller, Wm.
Bergroth, E.
Bethune, C. J. S.
Billings, B.
Blaisdell, F. E.
Blake, C. A.
Bland, J. H. B.
Boerner, C. R.
Bolter, Andrew.
Brackett, G. E.
Breed, W. P.
Brendel, E.
Britton, W. E.
Bruce, David.
Burrison, H. K.
Calder, E. E.
Calverley, Stephen.
Calvert, P. P.
Cassin, John.
Castle, D. M.
Chatfield, A. F.
Clemens, Brackenridge.
Cockerell, T. D. A.
Conradi, A.
Coquillett, D. W.
Cottle, J. E.
Couper, Wm.
Cresson, E. T.
Cunningham, B. L.
Dagget, F. S.
Danby, W. H.
Davis, G. C.
Davis, John.
De Vesey, J. X.
Dietz, W. G.
Dyar, H. G.

Edwards, Henry.
Edwards, W. H.
Ehrhorn, E. M.
Ehrmann, G. A.
Elrod, M. J.
Evans, J. D.
Evett, Wm.
Fall, H. C.
Fay , H. T.
Feldman, Henry.
Felt, E. P.
Fenyes, Adelbert.
Fernald, C. H.
Field, W. L. W.
Fitch, Asa.
Fox, W. J.
French, G. H.
Fuchs, Charles.
Fyles, T. W.
Gerhard, W. J.
Gillette, C. P.
Goding, F. W.
Goodhue, C. F.
Grey, Wm.
Grote, A. R.
Gundlach, Juan.
Hagen, H. A.
Haldeman, S. S.
Hamilton, John.
Hancock, J. L.
Harris, T. W.
Harvey, F. L.
Heiligbrodt, L.
Helmuth, C. A.
Hill, George.
Hillman, F. H.
Holland, W. J.
Hopkins, A. D.
Horn, G. H.
Hornig, Herman.
Huard, V. A.
Hubbard, H. G.
Hudson, G. H.
Hulst, G. D.
Huntington, W. S.
Johnson, C. W.

Kayser, Wm.
Kellicott, D. S.
Kincaid, Trevor.
King, G. B.
Kirtland, J. P.
Klages, E. A.
Knaus, W.
Knight, J. F.
Kraft, L.
Kunze, R. E.
Laurent, Philip.
Le Baron, Wm.
Le Conte, John.
Le Conte, J. L.
Lembert, J. B.
Lewis, Samuel.
Loew, H.
Longley, W. E.
Linne, Carl von.
Lintner, J. A.
Lyman, H. H.
Martindale, I. C.
Mengel, L. M.
McKnight, C. S.
McAllister, J. W.
Michel, John.
Moffat, J. A.
Monell, J. T.
Morgan, H. A.
Morris, J. G.
Muller, A.
Nason, W. A.
Nell, Philip.
Newcomb, H. H.
Neumoegen, B.
Newman, Edw.
Norton, Edw.
Orne, John.
Osburn, Wm.
Osborn, Herbert.
Oslar, E. J.
Osten Sacken, Baron.
Owen, E. T.
Patton, W. H.
Peale, T. R.
Pearsall, R. F.

Pergande, Theo.
Pilate, G. R.
Pine, W. S.
Piper, C. V.
Poey, F.
Pool, Isaac.
Popenoe, E. A.
Provancher, L.
Putnam, J. D.
Radaszkowski, ——
Rathvon, S. V.
Rauterberg, F.
Reakirt, Tryon.
Reinick, W. R.
Ricksecker, L. E.
Ridings, J.
Ridings, J. H.
Riley, C. V.
Roberts, C. H.
Robertson, Charles.
Robinson, C. T.
Say, Lucy W.
Say, Thomas.
Sanborn, F. G.
Sartorius, C. W.
Saunders, Wm.
Schafhirt, F.
Schneider, Louis.
Scudder, S. H.
Seiss, C. F.
Sharp, Alda M.
Sheriff, F. A.
Shimer, Henry.
Skinner, Henry.
Slingerland, M. V.
Slossons. A. T.
Smith, Emily A.
Smith, Frederick.
Smith, J. B.
Smyth, E. A.
Snyder, A. J.
Sonne, C.
Southwick, E. B.
Stainton, H. T.
Studinger, Otto.
Stauffer, Jacob.

Strecker, Herman.	Walsingham, Lord.	Westwood, J. O.
Stromberg, C. W.	Walton, L. B.	Wickham, H. F.
Sumichrast, F.	Watson, John.	Wilson, T. B.
Toumey, J. W.	Webster, F. M.	Williston, S. W.
Townsend, C. H.	Weed, C. M.	Wilt, Charles.
Twogood, F. D.	Weed, H. E.	Wingate, J. D.
Ulke, Henry.	Weidmeyer, J. W.	Wolloston, ——
Van Duzee, E. P.	Welles, C. S.	Wood, W. C.
Wadsworth, Miss M.	Wenzel, H. W.	Wood, W. H.
Walker, Francis.	Wenzel, W. F.	Young, D. B.
Walsh, B. D.	Westcott, O. S.	

A New Species of Gomphus (Odonata) related to G. fraternus.

By E. B. Williamson.

In eastern North America the hitherto recognized species—*externus*, *fraternus*, *crassus*, *dilatatus* and *vastus**—constitute a group of the genus *Gomphus* characterized by the form of the postanal cells, the color pattern of the thorax, and especially by the abdominal appendages of the males. *Dilatatus* and *vastus* have the fronto-nasal sature black, and the eighth abdominal segment immaculate above, the face being unmarked and segment eight having a basal yellow or yellowish spot in *externus*, *fraternus* and *crassus*. The following species which appears new finds its nearest ally in *fraternus*. Dr. Calvert's recent critical study of *fraternus*, *externus* and *crassus* (Ent. News, March, 1901, pp. 65–73, pl. iii, 18 figures) makes it possible to describe this species without indicating at length points of difference and similarity. What is here said constitutes a fourth vertical column as an addition to the three vertical columns of descriptive matter in Dr. Calvert's paper.

Gomphus hybridus n. sp.

Abd. ♂, 35–37; ♀, 35–36. H. w. ♂, 27–8; ♀. 29.

(1). Superior abdominal appendages viewed from above not as robust as *fraternus* and *crassus*, with the apices slenderer, separated by a distance greater than the length of one appendage;

(2). inner edge of each appendage concave in general direction, straight

*I know *ventricosus* and *consanguis* only from descriptions. They seem to be most closely related to *vastus* and *dilatatus*.

or slightly convex from about its middle to near the apex; the outer edge straighter than in *fraternus*, particularly at base, not angulate;

(3). in profile upper edge convex;

(4). the lower edge tapering to the apex in its apical fourth or fifth, a small tubercle (larger than in *fraternus* or *crassus*) where the tapering begins, at which point the appendage is hardly thicker than elsewhere in its post-basal portion; between this tubercle and the apex the edge is concave without a convexity as in *fraternus;*

(5). viewed obliquely from above at 45° with the horizontal plane the appendage shows no tubercle basally to the one seen in profile.

(6). Branches of inferior appendage with the apices barely outside of or just at the outer edge of the superior appendages;

(7). undivided portion when viewed from below with the edge between the branches forming an undulating curve, less than a semicircle, or with a short portion at the middle straight, in either case a distinct concavity before the apex of each branch.

(8). Vulvar lamina less than half as long as the sternum of the ninth segment, widened at its base as in *fraternus;* from this widened portion the sides extend parallel to the apices of the two contiguous branches, the incision between which has usually an angle of almost 90°, with the sides straight or slightly convex.

(9). Third femora of female without external yellow stripe.

(10). Dark stripe on first lateral suture in both sexes not interrupted.

(11). Vertex of female with a brown or whitish spine at either end of the transverse ridge.

(12) In both sexes tibiæ black, the superior surface with a pale yellow stripe, usually extending from the base to about the middle, rarely to the apex, and rarely reduced to a basal spot or streak.

(13). Dorsal spot on seventh abdominal segment of male one-half to three-fifths as long as the segment.

(14). Second femora of female beneath dull brownish, obscure green towards apex.

(15). In both sexes the tenth abdominal segment is obscure brown, paler than segments eight and nine, with a round, yellow, median, dorsal spot, which may be so obscured as to be almost invisible.

(16 and 17). Segments seven, eight, nine and ten are obscurely marked and shaded with black, brown and yellow, their general color being lighter than the segments before them, ten being the palest one; the color pattern on these segments is not as sharply defined as in related species, being in general, like *fraternus*.

(18). Margin of occiput similar in outline in both sexes; slightly higher in the female, high, uniformly convex or, more rarely, with the sides straightened or very slightly concave.

(19, 20 and 21) See (16 and 17) above.

Suture between nasus and frons obscure, slightly darker than the adjacent parts, best shown in very teneral individuals which also show

the same dusky color on the anteclypeus. Prothorax largely yellowish. United mid-dorsal thoracic stripes wider than in *fraternus*, widening below, as in *vastus*, to a greater or less extent, so that the pale area between the antehumeral and median stripes is greatly reduced, as compared with *fraternus*; humeral and antehumeral distinct, rarely fused for a short distance above; stripes of lateral sutures complete, the area between more or less obscured. Femora reddish brown, paler below; second tarsal joint yellowish dorsally, most distinct and sometimes evident only on last tarsi, rarely obscured throughout. Abdominal segments two to six black, marked with yellow and green. Accessory genitalia of male pale brown; the hook of the second hamule, bounded apically and basally by a small black tooth, shorter and weaker than in *fraternus* and *crassus*.

Referring again to the items in the description above, numbered (1) to (12), *hybridus* is separated from *fraternus* by (4), (7), (8), (9), (10) and (12); from *externus* by (1), (2), (3), (4), (6) and (7); from *crassus* by (2), (4), (5), (8), (9), (10), (11) and (12). Or *fraternus* and *hybridus* are alike, with possible slight differences, in (1), (2), (3), (5), (6) and (11); *externus* and *hybridus* in (5), (8), (9), (10), (11) and (12); *crassus* and *hybridus* in (1), (3), (6) and (7). *Hybridus* differs most widely from *crassus*; the male is very closely related to *fraternus*, while the female has more resemblances to *externus*—a condition which justifies the specific name proposed.

Described from 32 specimens—15 ♂ and 17 ♀:

Cumberland River, Nashville, Tennessee, below the State Penitentiary: May 12, 1901, 1 ♂; May 15, 1901, 1 ♂, 1 ♀; May 19, 1901, 1 ♂, 1 ♀; May 22, 1901, 1 ♂, 3 ♀; May 23, 1901, 6 ♂, 5 ♀; May 30, 1901, 1 ♀; June 2, 1901, 1 ♂; June 6, 1901, 1 ♀; June 7, 1901, 2 ♂, 2 ♀.

Cumberland River, above mouth of Stone River: May 16, 1901, 1 ♂, 3 ♀.

Stone River, near Cumberland River: May 16, 1901, 1 ♂.

Unfortunately much of this material is so teneral as to be of little or no value, and for this reason doubtless some variations have been overlooked. Exuviæ of the species were collected. Specimens of these have been sent to Prof. Needham. The types of the species are placed in the Museum of Comparative Zoölogy, Cambridge, Mass.

A New Bumble Bee from Colorado.

By Wm. H. Ashmead.

Bombus titusi n. sp.

♂.—Length 17 mm. Black and clothed with a black pubescence, the thorax anteriorly with a pale yellowish pubescence, the abdomen *above* clothed with a dense, dark sulphur yellow pubescence, with a slight greenish tinge, the two terminal segments reddish, mixed with a few black hairs, the fringe on the ventral segments black mixed with pale hairs, the middle and hind femora with whitish or pale yellowish hairs.

The head, seen from in front, is a little longer than wide, clothed with black hairs intermixed with a few pale hairs and with some moderately coarse, sparse punctures above and below the ocelli; the malar space smooth, a little longer than wide, less than one-third the length of the eye. The first and second joints of the flagellum are sub-equal, united about as long as the third, the latter being a little shorter than the fourth.

Type.—Cat. No. 5784, U. S. N. M.

Hab.—Lamar, Colorado, September 10, 1898.

Taken by Prof. E. G. Titus.

Pests and Grease.

By F. H. Wolley Dod.

I trust I may be excused for raking up such an old and somewhat hackneyed subject as the treatment of cabinet pests and grease, but there are, doubtless, many entomologists who, like myself, are still unable to cope with them to their entire satisfaction. Of all the acknowledged common enemies to a collection of Lepidoptera, grease is the only one which has ever been a serious nuisance to me amongst the boxes. I am not sure that I have ever been troubled at all with mites on verdigris nor with mould, except such as has appeared on specimens whilst in the relaxing time. The larger insect pests—Dermestidæ (?) and Tineidæ—have sometimes troubled me a little, chiefly amongst papered specimens. One hairy-looking wriggly creature, which has never told me his name nor even made mention of his family, and which, like most insects in the larval stage, appears to divide his time between eating and changeing his skin, is an old enemy of mine who has a habit of boring an almost completely round hole through the paper, and, visiting papered specimen after specimen, has sometimes continued in his wickedness for weeks without discovery.

A pinful of butterflies transfixed sideways is another favorite point of attack of this brute's, and though he used often to bother pinned and set specimens when I employed short English pins, on long Carlsbad pins they seem to be out of his reach, as the grapes were from Æsop's fox in the fable.

I never use naphthaline now in my store boxes, as high setting seems to render it unnecessary except, perhaps, with some of the larger moths, whose bodies or wing tips cannot be kept entirely off the cork. I find naphthaline, however, almost indispensable amongst papered specimens.

Another difficulty I have never been able to overcome—though it scarcely comes under the head of cabinet pests—is the persistent and unsightly way specimens have of springing after being set. I refer to those that have dried unset, and then been relaxed and set, as those set fresh are undoubtedly far less liable to spring, provided they are given time to *thoroughly* dry before being removed from the boards. But I find, even in this so-called dry atmosphere of Alberta, that a very large percentage of insects which have been relaxed will spring sooner or later—upwards, downwards or backwards—as often one way as another, though presumably they have a tendency to reassume the position they had previous to the relaxing. It is true that a slight deviation from the conventionally orthodox style of setting does not in the least detract from its scientific value, which is, of course, the most important point to be considered; but still, if some way could be discovered of preventing the springing which did not involve a large amount of labor (as does applying cement to the bases of wings beneath, which does *not* increase the value of the specimen), I think a great many collectors would gladly employ it. As to mould in the relaxing tins, a few drops of carbolic acid will usually prevent it, though I am always afraid of its acting on the colors of the specimens, especially in the case of non-metallic greens. Some of these, indeed, are so fleeting that it is absolutely impossible (so far as I know) to relax them at all without completely ruining the colors. As an instance of such species I may mention that pretty little Geometrid, *Eucrostis viridipennata*. I have seen this fact mentioned before in these pages with reference to the same species.

But "grease" is my great bugbear of all. It was from the Rev. Joseph Greene's Insect Hunter's Companion (first published in England over thirty years ago) that I originally learned my method of treating against this nuisance. I believe that the methods advised by Dr. Greene were at the time entirely original. He used to remove the contents of the abdomen from the under side, by means of a sharp penknife, as soon as they were firm, but before they were hard and dry. Not only is that a most unnecessary amount of labor, but it entails the necessity of treating each specimen within a fixed time after killing, which—in my own case, at least—is rarely convenient. It may be a good thing in the case of the very largest insects, but the only advantage I can see is that it uses up less of the grease-absorbing agent used afterwards, as it seems impossible to remove all trace of grease without soaking in benzine, naphtha, ether or something such. Amongst the moths the most persistent greasers seem to be the internal feeders, and many of these I find almost certain to become saturated to the wing tips in a marvellously short space of time. These I usually treat as soon as possible, whether they have begun to show signs of greasing or not, but the majority I leave until signs of exudation become evident.

Of all the preparations I have ever tried for the extraction of grease from the bodies ether has certainly given the best results, though, of course, the vessel used must be as nearly air-tight as possible. After removing the abdomen—of course carefully labeled, with corresponding labels on the owners —I usually soak in ether for two or three days, and in clean ether again for two or three more, and with the Sphinges, Bombyces, Geometridæ and Butterflies this is usually sufficient. With many of the Noctuidæ, however, especially if taken at treacle, in particular, the Cucullias and Plusias, which in this district do *not* come to treacle, no amount of ether will completely prevent or remove all the discoloration due to internal juices. The bodies of these I usually soak previously once or twice for 12 or 24 hours in clean warm water; distilled water would doubtless be the best. These genera are, it seems, particularly heavy feeders, and the sugary

substances with which the bodies must be filled are not soluble in ether. Ordinary brown shellac is the handiest thing I know for refixing the bodies. In the case of a badly-greased specimen total immersion is the only remedy I have seen tried. Though I always clean a greasy abdomen of a good specimen in my series, however common or ordinary in type, it is hardly worth while treating any but really valuable forms if the grease has once extended to the wings, except, of course, as an experiment. The most successful result of total immersion, in my experience, was in a unique *Cossus*. It had greased, to use a vulgar expression, "from its teeth to its toe nails;" but after repeated and lengthy baths in methylated ether—I really forget how often I changed the ether—became as clean and fresh-looking as the day it was taken. It still remains a unique, and really no one not in the swim would ever suspect it had been soaked. I recently removed grease completely from the wings of a dozen or more specimens of *Argynnis edwardsii* and *A. halcyone* by merely dipping them (after removing the abdomen) for a *few seconds only* in ether, and then waving them through the air till dry. In some species, however, notably in *Cucullia* and its allied genus *Rancora*, once the grease has extended to the wings, I am baffled. There seems to be carried with the grease that sticky substance previously mentioned, insoluble in ether. I have tried total immersion first in warm water—"an original method," I thought to myself. It seems likely to remain original, as the result is scarcely to be recommended. It certainly removes the trouble, but the cure is every bit as bad and more "widely distributed" than the disease, and subsequent ether baths completely fail to renovate the specimen, which has evermore a plastered and crumpled appearance. The day may come when I may wish to clean a particularly valuable though badly-greased specimen, and I cannot help thinking that there must be some more successful method than the above. Pure distilled water might meet with good results; I have never tried it.

I write to learn rather than to teach, and trust some one will come forward and tell us, through the pages of the NEWS, of some better method of renovating greased specimens, and also of their experience with cabinet pests.

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 a 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, 1902.

With the advent of the New Year I looked hopefully for the first issue of the new volume of the NEWS. I little expected to be jarred by the unseemly figure which adorns the first page of the cover of the January issue, bearing the absurd name of *Quisnam sexcaudatus?* Of course, Mr. Editor, if the NEWS intends to supersede some of our comic weeklies, I suppose my protest, for such this is, is out of place. But for an entomological journal, whose aim should be not to cast ridicule on the study but to frown down such, to present an absurdity on its front page is too much for my dignity. But if I am mistaken in the object of this levity, pray pardon me. Perhaps the figure has been adopted as a sort of trade-mark of your otherwise excellent journal. But, if you will allow me, the anal aspect of even a dipterous larva is far from being an edifying sight. SUBSCRIBER.

This note was received from a distinguished Hymenopterist, and of course merits our attention. If he were "jarred by the unseemly figure," it was because it was not a hymenopterous insect, and the more chagrined because he evidently took it to be a "fake" insect, which it is not. He was evidently jarred when he found out that what he took for a [name], "*Quisnam*," means what is it? and "*sexcaudatus*," six tailed. Now, inasmuch as the figure is not a fake, it is not out of place in a dignified entomological journal, and therefore a comic weekly would not want it. It is an interesting and valuable study in

comparative anatomy and cannot, therefore, be an "absurdity" in any sense of the word. Our object in putting a fanciful name on the figure was to lead people to find out for themselves what it is. The figure on the cover of the NEWS is merely to designate the volume and is not permanent, and is destroyed when the ten numbers are bound. Our friend, the Hymenopterist, was informed what the figure is by an Orthopterist. If the anal aspect of a dipterous larva is not an edifying sight, we must warn all our writers against sending us any figures of genitalia, especially those of the Hymenoptera; but perhaps our Hymenopterist excepts these. This gentleman's remarks also apply to Bulletin 47, New York State Museum. The Regents of the University of the State of New York, Prof. Needham and Dr. Felt will please take notice.

Entomological Literature.

COMPILED BY HENRY L. VIERECK AND JAMES A. G. REHN.

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, 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. The titles of all papers will be quoted in the original and not translated.

2. Transactions of the American Entomological Society, Philadelphia. —**3.** The American Naturalist, Cambridge, Mass.—**4.** The Canadian Entomologist, London, Ont.—**5.** Psyche, Cambridge, Mass.—**6.** Journal of the New York Entomological Society.—**11.** The Annals and Magazine of Natural History, London.—**15.** Biologia Centrali-Americana, London.—**22.** Zoologischer Anzeiger, Leipsic.—**35.** Annales Societé Entomologique de Belgique, Brussels.—**53.** Transactions and Proceedings of the New Zealand Institute, Wellington.—**55.** Le Naturaliste, Paris.—**61c.** Comunicaciones del Museo Nacional de Buenos Aires.—**68.** Science, New York. —**81.** Biologisches Centralblatt, Erlangen.—**82.** Centralblatt für Bakteriologie, Jena.—**84.** Insekten Börse, Leipsic.—**89.** Zoologische Jahrbücher, Jena.—**104.** Mittheilungen Naturhistorisches Museum, Hamburg.—**119.** Archiv für Naturgeschichte, Berlin.—**136.** Stettiner Entomologische Zeitung.

THE GENERAL SUBJECT.—Anon. Proceedings of the New York Entomological Society. Jour. N. Y. Ent. Soc., ix, N. Y., Dec., 1901.—**Anon.** Thierischer Kampher, **84,** Dec., '01.—**Ball, F.** Notes sur l'effet de la temperature sur les Chrysalides, **35,** Dec., '01.—**Comstock, J. H.,** and **Kochi,**

C. The skeleton of the head of insects, **3,** Jan., '02.—**Coupin, H.** Le Chant des Insects. Revue Scientifique, Paris, 4e ser., xvi, Dec. 21, 1900. L'industrie des Insectes, **55,** Dec. 1, '01.—**Hine, J. S.** Observations on insects. The Ohio Naturalist, vol. ii, Dec., 1901.—**Kraepelin, K.** Uber die durch den Schiffsverkehr in Hamburg eingeschlepten Tiere, **104,** xvii, '01.—**Leggett, F. W.** Insect Vision. Journal of the New York Microscopical Society, July, 1901.—**Linden, Dr. G.** Die flugelzeichnung der Insekten, ii, Concl., **81,** Dec., 1901.—**Morgan, T. H.** Regeneration in the Egg, Embryo and Adult, **3,** Dec., '01.—**Sch., S.** Insekten als lebenden Nahrboden für Züchtung von Krankheitskeimen, **84,** Dec., '01.—**Van Dyke, E. J.** Observations upon the faunal regions of California from the standpoint of a Coleopterist (abstract), **6,** Dec., 1901.—**Wasman, S. J.** Giebt es thatsachlichen Arten die heute noch in der stammesentwicklung begriffen sind? Zugleich mit allgemeinen bemerkungen über die entwicklung der *Myrmekophile* und *Termitophile* und über das Wesen der *Symphilie* (118). Beitrag zur Kenntnis der *Myrmekophilen* und *Termitophilen*, iii, concl., **81,** Dec., '91.—**Zimmermann, A.** Sammelreferate über die tierischen und pflanzlichen Parasiten der tropischen Kultur pflanzen, ii, Die Parasiten des Kakaos, **82,** Dec., '01.

ECONOMIC ENTOMOLOGY.—Anon. Catalogue of collections of Pests and Insecticides. Commission of Agricultural Parasitology of the secretary for public promotion, Mexico, 1901.—**Britton, W. E.** The San José scale insect; its appearance and spread in Connecticut, Connecticut Agric. Experim. Sta., New Haven, Conn., Bull., 135, Dec., 1901.—**Eysell, A.** Der Malaria parasit und seine Ubertragung auf den Menschen, figs., Abhanlungen und Bericht des Vereins für Naturkunde zu Kassel, xlvi, 1901. —**Slingerland, M. V.** The scientific name of the cherry fruit-fly, **4,** Jan., '02.—**Smith, J. B.** Concerning Certain Mosquitoes, **68,** Jan. 3, 1902.—**Underwood, W. L.** Goldfish as destroyers of mosquito larvæ, **68,** Dec. 27, '02.

ARACHNIDA.—Banks, N. Notes on some spiders of Walkenaer, Koch and others, **6,** Dec. 1901.—**Cambridge, F. O. P.** Arachnida Araneidea (Mexico and Central America), 2 pls., **15,** Arachnida Araneidea, ii.—**Kobert, Dr. R.** Beitrag zur Kentniss der gift-spinnen, Stuttgart, 1901.—**Leonardi, A. B. G.** *Acari* sud americani, **22,** Dec. '01.—**Pocock, R. I.** Some new and old Genera of S. American Aviculariidæ,* **11,** Dec. '01.—**Soar, C. D.** Larval Water-mites on Aquatic Animals. The American Monthly Microscopical Journal, xxii, no. 12, Dec. 1901.

MYRIOPODA.—Attem, C. F. Neue Polydesmiden des Hamburger Museums, **104,** xvii, '01.—**Attem, C. F.** Neue, durch den Scheffsverkehr in Hamburg eingeschleppte *Myriopoden*, **104,** xvii, '01.

PLATYPTERA.—Enderlein, G. Neue deutsche und exotische Psociden, sowie Bemerkungen zur Systematik, **89,** '01.

ODONATA.—Calvert, P. P. Neuroptera (Odonata), (Mexico and Central America),* **15,** Neuroptera.

ORTHOPTERA.—Anon. The Destructive Migratory Locust of the Argentine Republic. The Agricultural Journal, Cape Town, Nov. 7, 1901.—**McNary, J.** Variability of the Venation in Grasshoppers, **68,** Dec. 27, '01.—**Rehn, J. A. G.** Random Notes on North American Orthoptera, **2,** xxvii.—**Scudder, S. H.** The species of Gryllus found in the United States east of the Sierra Nevadas,* **5,** i, Jan., 1902.—**Waker, E. M.** The Canadian species of Trimerotropis,* **4,** Jan. '02.

HEMIPTERA.—Ball, E. D. West Coast and other Jassidæ (Homoptera),* **4,** Jan. '02 —**Buckton, G. B.** A Monograph of the Membracidæ, ii,* Monographiæ Entomologicæ, Part ii, London.—**Distant, W. L.** Rhynchotal Notes, xi, Heteroptera: Fam. Lygæidæ, **11,** Dec. '01.—**King, G. B.** A new species of Saissetia (Coccidæ) with notes on some of the species of the genus not well understood (ill.), **5,** i, Jan., 1902.—**Kirkaldy, G. W.** Some systematic work published during the last five years upon North American Auchenorrhynchus Homoptera (Rhynchota), The Entomologist, xxxiv, Dec. 1901.—**Lyman, H. H.** *Eulecanium Lymani,* **4,** Jan , '02.—**Newstead, R.** Monograph of the Coccidæ of the British Isles, vol. i, London.—

COLEOPTERA.—Berg, C. Silfidos Argentinos, **61c,** i, No. 9.—**Bernhauer, M.** Neue exotische Arten der gattung *Aleochara* Gravh., **136,** No. 7-12, '01.—**Clouët des Pesmches, L.** Essai monographique sur le genre Rhyssemus (Coleopteres lamellicornes-Tribu des Aphodiides). Memoires de la Societe Entomologique de Belgique, viii, Bruxelles, '01.—**Enderlein, G.** *Meropathus chuni* nov. gen., nov. spec., eine neue Helephorinengattung von der Kerguelen-Insel., **22,** xxiv, Mar., '01.—**Klages, H.** Supplement to Dr. John Hamilton's List of the Coleoptera of Southwestern Pennsylvania. Annals of the Carnegie Museum, i, No. 1, Oct., 1901. —**Knaus, Warren.** Additions to the list of Kansas Coleoptera for the years 1899 and 1900. Trans. Kans. Acad. Science, xvii, 1899, 1900.—**Lyman, H. H.** Synonymic notes, **4,** Jan., '02.—**Ohaus, Fr.** Revision der Heterosterniden,* **136,** No. 7-12, '01.—**Pic, M.** Descriptions de Coléopteres Nouveaux del 'Amerique Méridionale, **55,** Dec. 1, '01.—**Tutt, J. W.** Migration and dispersal of insects: Coleoptera. The Ent. Record and Jour. of Variation, xiii, Dec., 1901.—**Van Dyke, E. J.** Faunistic studies in the Coleoptera of California (Abstract). See General Subject.

DIPTERA.—Anon. *Eristalis tenax,* Longitudinal Section of Halter. *Sarcophaga carnaria,* Longitudinal Section of Halter. Anterior Thoracic Spiracle of Blow-fly. The American Monthly Microscopical Journal, xxii, No. 11, Nov., 1901.—**Chagnon, G.** The Syrphidæ of the Province of Quebec. Le Naturaliste Canadien, Nov. 1901.—**Dyar, H. G.** Descriptions of the larvæ of three mosquitoes. The life-history of *Uranotænia sapphirina,* **6,** Dec., 1901.—**Enderlein, G.** Zur kenntniss der Flöhe und Sand flöhe, Neue und wenig bekannte *Puliciden* und *Sarcopsylliden,* **89,** '01.—**Hine, J. S.** Collecting Tabanidæ. The Ohio Naturalist, vol. ii, Dec., 1901.—**Wheeler, W. M.** An Extraordinary Ant Guest, **3,** Dec., '01.

LEPIDOPTERA.—Berg, C. Namensänderung zweier Lepidopten-Gat-

tungen, **61c,** i, No. 9.—**Beutenmuller, W.** The larva of *Catocala illecta*. The larva of *Homoptera edusa*, **6,** ix, Dec., 1901.—**Dyar, H. G.** Life Histories of North American Geometridæ, xxix, **5,** ix, Jan., 1902.—**Ghidini, A.** Le Ver a soie de l'Ailante daus le Tessin (*Attacus cynthia*). Bulletin de la Société Nationale d'Acclimatation de France, xlviii, Nov., 1901.—**Gibson, A.** Notes on the larvæ of *Arctia virgo* L., **4,** Jan., '02.—**Godman, F. D.** Lepidoptera Rhopalocera (Mexico and Central America),* **15,** Lepid. Rhopal., ii.—**Joutel, L. H.** Note on *Sesia sigmoidea*. Larva of *Isochætes beutenmülleri* on Staten Island, N. Y. A self-decorating Geometrid larva, **6,** ix, Dec., 1901.—**Lyman, H. H.** Synonymic notes, **4,** Jan., '02.—**Major, W.** Proboscis of Butterfly. The American Monthly Microscopical Journal, xxii, No. 11, Nov., 1901.—**Quail, A.** Embryological structure of New Zealand Lepidoptera, **53,** Part 1, July, '01.—**Soule, C. G.** The hatching of *Eacles imperialis*. **5,** Jan., 1902.—**Weeks, A. G.** Descriptions of ten new butterflies of the genus *Pamphila*. Proc. N. E. Zoological Club, ii, Dec. 23, 1901.—**Slingerland, M. V.** The scientific name of the cherry fruit-fly, **4,** Jan., '02.

HYMENOPTERA.—**Cockerell, T. D. A.** Catalogo de las Abejas de Mexico, Biblioteca Agricola de la Secretaria de Fomento.—**Dickel, Ferd.** Über Petrunkewitsch's Untersuchungs ergebnisse von Bieneneiern, **22,** Dec., 1901.—**Enderlein, G.** Neue *Evaniiden*, *Stephaniden Mutilliden* (*Apterogyna*), *Proctotrupiden* und *Chalcididen*, mit einer bestimmungstabelle der Afrikanischen *Stephaniden*, **119,** '01.—**Forel, A.** Varietes Myrmecologiques,* **35,** Dec. '01.—**Forel, A.** Nouvelles especes de *Ponerinæ* (Avec un nouveau sous genre et une espece nouvelle d' *Eciton*), Revue Suisse de Zoologie, Annales de la Societe Zoologique Suisse et du Musse D'Hist. Natur. de Geneve, Geneva, Dec., 1901.—**Forel, A.** Formiciden des Naturhistorischen Museums zu Hamburg, Neue *Calyptomyrmex*, *Dacryon*, *Podomyrma* und *Echinopla* arten, **104,** xvii, '01.—**Forel, A.** Fourmis termitophages, Lestobiose *Atta tardigrada*, sous-genres d' *Euponera*,* **35,** Dec, '01—**Harrington, W. H.** Fauna Ottawænsis. Hymenoptera (Sphegoidea), The Ottawa Naturalist, xv, no. 10, Jan., 1902.—**Viereck, H. L.** New species of the subfamily Pseninæ,* **2,** xxvii.—**Wheeler, W. M.** An Extraordinary Ant-Guest, **3,** Dec., 01.

Insects Injurious to Staple Crops. By E. Dwight Sanderson, B. S. Agr., Entomologist, Delaware College Agric. Exper. Station; Assoc. Prof. of Zoology, Delaware College. John Wiley and Sons, New York. Price, $1.50. This is a work of 295 pages devoted to economic entomology. Its author has had a considerable experience as a practical entomologist, and has designed a work of reference for the farmer or others who do not have access to the scattered literature of this branch of entomology. The work has a distinct reason for its production, and can't fail to be of direct value to those for whom it is intended. The illustrations are numerous and the treatment non-technical, and a farmer of ordinary intelligence should have no difficulty in understanding it.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

In the June NEWS I note an article on the collecting regions around Las Vegas, N. M., and would like to add a few remarks with regard to the regions which lie to the west of Springer, and are known as the Moreno Valley and Ute Creek districts. In the month of February I made a visit to Elizabethtown, and, judging from the indications at that time, and from information gathered from the natives, I believe these regions will prove very rich in new material.

Elizabethtown is situated near the head of the Moreno Valley, at an elevation of over 8000 feet, and is practically surrounded by mountains that range in height from 10,000 to 14,000 feet. The only way of access to this valley that I know of is through a narrow canon some 15 miles in length.

This valley is so completely shut off from the surrounding country that a great deal of the fauna of the adjacent district is not represented here.

The railroad journey ends at Springer, on the Atcheson, Topeka & Santa Fe R. R. From here you begin a stage journey of 57 miles to Elizabethtown. The first 21 miles is from Springer to Cimarron, and passes through a rolling country consisting of meadows, irrigated lands and one or two small lakes.

At Cimarron you will have to stop over night, and the first place will be at Mr. Hawkins', the owner of the stage line.

From Cimarron to Ute Creek (12 miles) the road begins to enter the foothills; from Ute Creek to Elizabethtown (20 miles) then entering the canon shortly after leaving Ute Creek and emerging into a beautiful valley about five-eighths of a mile from Elizabethtown.

The elevations of the posts on this trip are: Springer, 5800 feet; Cimarron, 6500 feet; Ute Creek, 7500 feet; Elizabethtown, 8500 feet. So you see that there is considerable altitude. The snows are never very heavy at Elizabethtown; when I left, the last of February, there was about six inches on the level, and at Springer none at all.

At Elizabethtown there is a family from Philadelphia by the name of Lynch, and I feel sure that one could get accommodations here; for they are very pleasant, and are always glad to receive strangers. They have been here for years, and are well acquainted with the country.—M. C. HOAG, Maxwell, Iowa.

TO COLLECT PAIRS OF DRAGONFLIES. POISONING SPECIMENS.—Pairs of dragonflies, papered with a single pair in an envelope, are often valuable in rendering the specific determination of the female certain, and such material may have a further value for the student of variation. If a vial of small insect pins is carried into the field, each pair, as it is taken, may be impaled on a pin and dropped into the cyanide jar. Two cyanide jars may be used, and a distinction made between those pairs

taken in copulation and those in which the female was being only held by the male. In papering material this should be noted on the envelope, and when a male and female, taken separately, are placed in the same envelope, it should be clearly indicated that they were not associated at the time of capture.

At times it may be a convenient way of placing naphthaline in insect boxes to dissolve the crystals or moth balls in gasoline or carbon bisulphide, and pour the solution in the box. The gas poisons the contents thoroughly, and the naphthaline is left in the box in a form which cannot injure the specimens, as sometimes happens when cones or crystals are used.—E. B. WILLIAMSON, Bluffton, Ind.

A GREEDY INSECT.—While collecting insects on the Prairie near Golden, Colorado, on the 27th of July I caught a half-grown female Mantid. I put it in a glass jar, and left it without food till noon the next day, when I gave it eight living house flies. Then did it not only demonstrate that it was hungry, but also illustrated the proverb that "He who grasps too much looses all." It immediately seized a fly with each foreleg, and, transferring one to its mouth, caught the third. Still unsatisfied, it, with inexcusable greediness, attempted to seize a fourth fly. But it was a disastrous attempt; for, instead of getting the coveted fly, it lost one of those already captured. With a disgusted look, it then gave up the attempt to catch more than it could handle, and went to eating ravenously. Within an hour it caught and devoured seven of the flies and tried to catch the eighth.—A. N. CAUDELL, Washington, D. C.

"REPORTS from the orange country say that the imported lady bugs are still running up and down the San Jose scale in a manner that threatens to drive that pest on the high C."

I send the above clipping from the *Minneapolis Journal*, which I think is worthy of a place in the "funny column" of the NEWS.—RAYMOND OSBURN, Fargo, N. D.

Doings of Societies.

A regular stated meeting of the Feldman Collecting Social was held December 18, 1901, at the residence of Mr. H. W. Wenzel, 1523 S. 13th St. Eleven persons present. Visitors, Messrs. Joutel and Schaeffer of New York. President Charles W. Johnson in the Chair.

Prof. Smith said that he had taken some very fine photographs of the mouth and anal parts of mosquito larvæ. These parts of the larvæ can be used in their determination. A specimen of the larva of *Culex sylvestris* which he had examined had the breathing tubes which are found in the pupa

state. This seems to indicate that the tubes are formed in the larvæ before transforming ; the connection between the tracheæ and the breathing tubes was severed, showing that the larvæ use these tubes before changing.

Mr. Schaeffer spoke of *Europs pallipennis* taken at Fort Lee, N. J., some years ago, but of which he has since found quite a number of specimens in June, on the gummy excretion of hickory. Specimens were submitted to Mr. Schwarz, who considered it very strange to find this species so far north, which before had not been recorded north of Florida.

Mr. Daecke exhibited a specimen of *Polypleurus perforatus* taken at Manumuskin, N. J., April 24, 1901, as a species new to New Jersey.

Dr. Castle exhibited some specimens which he had collected in the Blue Mountains, Pennsylvania, among which was a specimen of *Lebasiella pallipes* Klug, of which there are only two specimens in this city, the other being in the collection of Dr. Horn, from Texas.

Mr. Joutel stated that Dr. Felt and himself were working upon *Saperda*, and made the following remarks upon the genus: He said that they divided the larvæ into two groups —one living in the dead wood and the other in the living trees —and that the larvæ of each species had a different way of working in the wood by which means they could be separated better than by any characters of the larvæ themselves, as they seemed to be very much alike. They have found two new species, one related to *Saperda tridentata* and the other to *S. calcarata.*

Mr. Johnson exhibited a specimen of *Dasyllis* taken by Mr. Daecke at Mamumuskin, N. J. The specimen agrees well with Macquart's description of *affinis.*

WILLIAM R. REINICK, *Secretary.*

The twenty-second regular meeting of the Harris Club was held at 35 Court Street, on the evening of December 10, 1901. President Newcomb presided ; twelve persons being present. Exhibits of Graptas were made by Messrs. Newcomb, Low and Rogers. There was a general discussion of dimorphism

as exhibited in this genus. Mr. Field showed a few Geometridæ taken on Mt. Katahdin. Several members commented on the unusual abundance of cocoons of the Saturniidæ this year. W. L. W. FIELD, *Secretary.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia, was held December 26, 1901, at which the following officers were elected :

Director, Philip Laurent ; *Vice-Director*, H. W. Wenzel ; *Treasurer*, E. T. Cresson ; *Recorder*, Henry Skinner ; *Conservator*, Henry Skinner ; *Publication Committee*, J. H. Ridings, C. W. Johnson ; *Secretary*, C. W. Johnson.

HENRY SKINNER, *Recorder.*

A meeting of the American Entomological Society was held December 26, 1901, at which the following officers were elected :

President, Philip P. Calvert ; *Vice-President*, H. W. Wenzel ; *Treasurer*, E. T. Cresson ; *Rec. Secretary*, Henry Skinner ; *Corres. Secretary*, C. W. Johnson ; *Curator*, Henry Skinner ; *Librarian*, W. J. Fox.

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

Executive Committee.—P. Laurent, Charles Liebeck, H. W. Wenzel.

Finance Committee.—J. W. McAllister, C. C. Cresson, C. S. Welles.

Mr. Laurent said *Tenodera sinensis* seems to be holding its own at Mt. Airy, Philadelphia. He had gathered about half a barrel of egg masses. The species likes blackberry and briar bushes as a place of abode and avoids low ground with low herbage. Dr. Calvert stated that he had distributed some egg masses at the Botanical Garden of the University of Pennsylvania, but had seen no result. The difference in the character of the vegetation in the Botanical Garden would probably account for their absence. The Curator reported that the Society and the Entomological Section of the Academy had received 103,988 insects during 1901.

HENRY SKINNER, *Secretary.*

OBITUARY

THE DEATH OF TWO EMINENT LEPIDOPTERISTS.

The sad intelligence has just reached me of the death of Lionel de Nicéville, of Calcutta, who fell a victim on the third of December to malarial fever. Mr. de Nicéville was the foremost lepidopterist of India. His great work on the Butterflies of India, Burmah and Ceylon, three volumes of which have been published, will constitute an enduring monument to his learning. The fourth volume has engaged his time and thought for many years past, and lepidopterists have been earnestly looking for its appearance. It is to be hoped that his untimely death will not prevent its publication.

Mr. de Nicéville had endeared himself greatly to all those who came into relations with him as a friend or as a correspondent. The science of entomology has lost in him one of its brightest ornaments.

The death of Mr. William Doherty in Uganda, where he was engaged in collecting for the Hon. Walter Rothschild and the writer, has created another great vacancy in the ranks of those who have been occupied during the last twenty years in fostering biological research. Details as to Mr. Doherty's death are not as yet available. All that is known is that he was seized with a fatal illness when in camp, was taken by his faithful lepchas, whom he brought with him from Darjeeling, and who had been the companions of his wanderings for many years in the islands of the Indo-Malayan Archipelago, to the nearest military station, where he could receive medical attention, and there died. The vast collections which he made throughout India, Burmah and the islands of the East as far south as New Guinea are distributed in many hands, but the bulk of them are in the possession of the Hon. Walter Rothschild and the writer of these lines. The story of his life, if it could be told, would furnish one of the most fascinating and brilliant chapters in the annals of scientific exploration. The writer hopes to be able to furnish material enough from lettters and other sources of information to give a picture of his long-continued and earnest labors in behalf of scientific research. It is probable that no

man during the past century has traveled more widely in little known parts of the Orient than Mr. Doherty, and no man has discovered more species new to science than he within the last two decades. His death has brought a keen sense of personal affliction and of loss to those who knew him and respected him for his magnificent attainments as well as for his intrepid courage.—W. J. HOLLAND, Carnegie Museum, January 7, 1902.

Mr. Ottomar Dietz, of New York City, died on Wednesday, December 25, 1901, at his house, 679 East 141st Street. He had been ill only twelve days and only six days confined to his bed. The first signs of his illness were noticeable on December 12th, which were considered an attack of malaria. Later, the physicians found some heart trouble, and during the last two days typhoid pneumonia set in. A hemorrhage of the lungs brought the sudden end at 5.30 A.M. He leaves a widow and a daughter. Born in Bremen, Germany, April 21, 1854, his parents later removed to Konigsberg where he received his early education. He came to America in 1880, living in Milwaukee and Cincinnati and later settled in New York, where he was engaged in the newspaper advertising business. In Milwaukee he made the acquaintance of Mr. F. Rauterberg, and seeing his collection became so much interested that he decided to form a collection for himself. As a collector of Coleoptera he was well known, was one of the founders of the New York Entomological Society and member of same. He left a large and valuable collection of Coleoptera, on which he had worked for many years, and in regard to neatness in mounting and arrangement it is one of the best. His last collecting trip in June, 1901, took him to Brownsville, Texas, and in previous years he had visited Virginia and Florida for the same purpose. He was a very enthusiastic collector and had a large circle of entomological friends who will deeply regret his sudden and untimely end.

Charles Caleb Cresson, for many years a member of the American Entomological Society, and one of its Finance Committee, died January 9th in his eighty-sixth year.

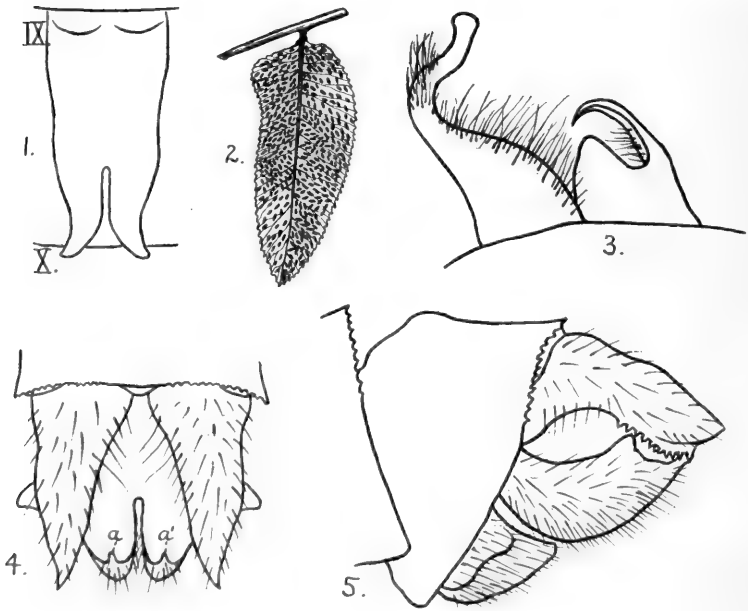

Fig. 1. Gomphus viridifrons Hine.
Fig. 2. Pinnule of Osmunda regalis with eggs of Argia putrida.
Figs. 3-5. Ophiogomphus johannus Needham.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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CONTENTS:

A List of the Dragonflies Observed in Western Pennsylvania.—(Plate III.)

BY E. B WILLIAMSON.

The following list of 68 species is certainly not a complete one for the region considered, but may serve as a basis for further work by other collectors. The unlikelihood that the writer will do any more field work in western Pennsylvania justifies the publication of the following notes. I have given various collectors credit for their records throughout the paper. Mr. J. L. Graf, Mr. D. A. Atkinson and the writer usually collected in company, and nearly all of the records to which no collector is ascribed were established by this collecting party. Mr. H. D. Merrick has done some collecting in Beaver County; Mr. Atkinson collected at Conneaut Lake; the other records come from Alleghany, Westmoreland, Fayette and Somerset counties. Dr. Calvert writes me that *Gomphus albistylus* has been taken at Lehigh Gap. With the exception of this record and the record of *Pantala flavescens* I have examined the specimens in every case. The first male of *Gomphus parvulus* taken by Mr. Graf was identified by Dr. Calvert, who has also helped with the determination of *Gomphus brevis*.

LOCALITIES MENTIONED.

Aspinwall, a suburb of Allegheny City, on the Alleghany River.

Chartiers Creek, a tributary of the Ohio, Alleghany County.

Confluence, Somerset County; the Yough, Castleman and Laurel Hill Creek join here to form the Youghiogheny River.

Idlewild, Westmoreland County, on the Loyalhannah Creek.

New Brighton, Beaver County.

Ohio Pyle, Fayette County, on the Youghiogheny River.

Pine Creek, a tributary of the Allegheny River in Alleghany County.

Rockwood, Somerset County on the Castleman River.

Schenley Park, Pittsburg.

Silver Lake, a pond within the city limits of Pittsburg.

Squaw Run, a tributary of the Allegheny River in Alleghany County.

Turtle Swamp, along the Ohio River near Pittsburg, almost filled at the present time.

1. **Calopteryx maculata** Beauvois.

Alleghany County, June and July (C. Daggette, A. S. Brent, J. L. Graf, R. F. Foerster, and D. A. Atkinson); Chartiers Creek, May 28, 1899; Squaw Run, August 28, 1898; New Brighton, May 28, 1899 (H. D. Merrick); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson); Ohio Pyle, June 18, 1899, and June 25, 1900; Rockwood, June 29, 1900; Confluence, June 30, 1900. A widespread species but less common in Fayette and Somerset counties, at least along the streams, than the next.

2. **Calopteryx angustipennis** Selys.

Ohio Pyle, June 18 and July 2, 1899, and June 24–July 1, 1900; Confluence, June 30, 1900; Rockwood, June 29, 1900. A female of this species was taken feeding on a teneral male of *Enallagma exsulans*. On two occasions males were seen to seize females by the prothorax. Each male after alighting and resting for a few seconds, still holding the female, then proceeded to fill the seminal vesicle, an operation requiring ten or

fifteen seconds. In the case also of *Calopteryx maculata*, *Argia putrida*, and *Enallagma exsulans* about the same time was required for the transfer of sperm.

3. **Hetærina americana** Fabricius.

Alleghany County, July (J. L. Graf and D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Alleghany County, August 8 and September 12, 1898; Ohio Pyle, June 28, 1900.

4. **Lestes unguiculatus** Hagen.

Alleghany County, July, 1899 (D. A. Atkinson): Turtle Swamp, July 31 and Aug. 21, 1898; Conneaut Lake, August 6, 1899 (D. A. Atkinson).

5. **Lestes forcipatus** Rambur.

Turtle Swamp, June 3, 1899; Boston, Alleghany County, May 7, 1899; Pine Creek, May 21, 1899.

6. **Lestes rectangularis** Say.

Alleghany County, July (R. F. Foerster and D. A. Atkinson); Turtle Swamp, July 31, 1898, and June 3, 1899; Idlewild, July 10, 1900 (D. A. Atkinson).

7. **Argia putrida** Hagen.

Beaver County, May 25, 1899; Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson); Alleghany County, August 28, 1898, and July, 1899; Chartiers Creek, May 28, 1899; Ohio Pyle, June 18, 1899, and June 24, July 1, 1900; Confluence, June 30, 1900. A male of this species was taken at Ohio Pyle in the act of devouring a large Mayfly. Males were seen on several occasions in the act of filling the seminal vesicle. They do this immediately after seizing the females. As has often been observed pairs will congregate about the same spot for the females to oviposit. On a frond of the royal fern, *Osmunda regalis*, which trailed in the waters of the Youghiogheny River at Ohio Pyle, fourteen couples were counted at one time. The pinnules of the fern were found to be literally packed with the eggs (Pl. III, fig. 2). The males are often drawn beneath the

water, apparently against their wills, by the females. Frequently a male will release himself from the prothorax of the female, and numbers of such males may be resting motionless above the water's surface on the very vegetation in which the females are ovipositing beneath the surface.

8. **Argia violacea** Hagen.

Alleghany County, July, 1899 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Ohio Pyle, June 28, 1900; Idlewild, July 7, 1900 (D. A. Atkinson).

9. **Argia apicalis** Say.

Ohio River, Alleghany County, August 21, 1898; Monongohela River, Alleghany County, July 30, 1898; Allegheny River, Alleghany County, September 18, 1898.

10. **Erythromma conditum** Hagen.

Idlewild, May 30, 1899; Pine Creek, May 21 and June 4, 1900. Taken especially along low sedgy streams, usually among trees or underbrush.

11. **Nehalennia irene** Hagen.

Alleghany County, July, 1899 (D. A. Atkinson).

12. **Nehalennia posita** Hagen.

Pine Creek, June 4, 1899; Alleghany County, July, 1899 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson).

13. **Amphiagrion saucium** Burmeister.

Alleghany County, July (A. S. Brent and D. A. Atkinson); Turtle Swamp, June 3, 1899; Pine Creek, May 21 and June 4, 1899; Idlewild, July 10, 1900 (D. A. Atkinson).

14. **Enallagma Hageni** Walsh.

Idlewild, July 10, 1900 (D. A. Atkinson). At Idlewild there are a number of ponds along the railroad track near the Loyalhannah. Probably this species was taken about these ponds and not along the creek.

15. **Enallagma civile** Hagen.

Alleghany County, July (J. L. Graf and D. A. Atkinson);

Silver Lake, August 8 and 27, 1898; Schenley Park, August 26 and 31 and September 6, 1898; Allegheny River, Alleghany County, August 9 and September 12, 1898; Turtle Swamp, August 21, 1898; Chartiers Creek, May 28, 1899; Pine Creek, June 4, 1899; Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson).

16. **Enallagma carunculatum** Morse.

Schenley Park, August 29, 1898.

17. **Enallagma aspersum** Hagen.

Conneaut Lake, August 6, 1899 (D. A. Atkinson).

18. **Enallagma geminatum** Kellicott.

Chartiers Creek, May 28, 1899; Conneaut Lake, August 6, 1899 (D. A. Atkinson).

19. **Enallagma exsulans** Hagen.

Beaver County, May 25, 1899; Alleghany County (C. Daggette); Monongohela River, Alleghany County, July 30, 1898; Silver Lake, August 14, 1898; Aspinwall, September 12, 1898; Chartiers Creek, May 28, 1899; Ohio Pyle, June 18, 1899, and June 24–July 1, 1900; Idlewild, July 10, 1900 (D. A. Atkinson. A pair of this species was observed of which, after many ineffectual attempts at copulation, the male dropped the female, who lay as though dead for some minutes before flying away, the male meanwhile clinging motionless to a grass stem.

20. **Enallagma antennatum** Say.

Silver Lake, August 27, 1898; Chartiers Creek, May 28, 1899.

21. **Enallagma signatum** Hagen.

Conneaut Lake, August 6, 1899 (D. A. Atkinson).

22. **Enallagma pollutum** Hagen.

Conneaut Lake, August 6, 1899 (D. A. Atkinson).

23 **Ischnura verticalis** Say.

Schenley Park, July 30, 1898, and May 1, 1899; Monongohela River, Alleghany County, July 30, 1898: Turtle Swamp, July 31 and August 21, 1898, and May 3 and June 3, 1899;

Allegheny River, Alleghany County, August 9 and September 12, 1898; Silver Lake, August 18 and 27, 1898; Alleghany County, May, June and July (J. L. Graf and D. A. Atkinson); Beaver county, May 25, 1899; Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Ohio Pyle, June 18, 1899.

24. **Anomalagrion hastatum** Say.

Turtle Swamp, July 31, 1898, and May 3, 1899; Schenley Park, September 2, 1898; Pine Creek, May 21, 1899; Alleghany County, July, 1899 (D. A. Atkinson); Idlewild, May 30, 1899; Conneaut Lake, August 6, 1899 (D. A. Atkinson).

25. **Ophiogomphus rupinsulensis** Walsh.

Ohio River, Alleghany County, May 14, 1899. A single teneral male.

26. **Ophiogomphus johannus** Needham.

Rockwood, June 29, 1900; one male. The specimen was referred to Professor Needham, who has identified it as his species *johannus*. It is clearly distinct from *Ophiogomphus carolinus* Hagen, as figured by Needham (Can. Ent. xxxi, 9), by the form of the superior abdominal appendages seen from above, but seemed to differ from *johannus* in the form of the inferior appendage and slightly in the genital hamules. (See Plate III, figs. 3–5). Moreover, the humeral and antehumeral stripes are separated and not largely joined as described for *johannus*. Professor Needham writes that since the species was described he has examined a number of both sexes, and that the distinctness of the humeral and antehumeral stripes is a variable character, though the Pennsylvania specimen has them more widely separated than any other specimen he has seen. Moreover, the form of the inferior abdominal appendage has not been accurately described and figured, as the original material was a single teneral male with this part badly shrunken. The inferior appendages in *O. johannus* and *O carolinus* are very similar. Professor Needham says also that the accessory genital organs of the second abdominal

segment vary in the same species to an unusual degree in this genus.

The Pennsylvania specimen was taken along the Castleman River, near a very swift ripple about a mile above Rockwood. It was resting on a large boulder at the water's edge. As I approached it flew away. Half an hour later, when I again visited the spot, it (presumably the same one) was resting on the identical rock where I had seen it before. It was the only one of the species observed. The ground color of the thorax was a beautiful dark grass green. About the ripple where it was found, *Gomphus brevis* and *G. albistylus* were common.

(To be Continued.)

The Home of Some Aculeate Hymenoptera with Descriptions of Two New Species.

By H. L. Viereck.

For the entomologist there can hardly be a more enticing field to collect in than the wilds of southern New Jersey. The place is a favorite among the nearby collectors, the abundant and peculiar fauna is enough to draw Pennsylvanians from their native heath and make them forget that there are insects in their own State. It is only necesary to go eight or twelve miles from Philadelphia to find excellent places to work in with the net. This part of the State abounds in barren areas which afford no temptation to the grasping agriculturalist, and have consequently lapsed into grand reserves, blessed with an absence of fences and trespass signs, a delight for the free. The flora is rich, as varied and peculiar as the insect world, which in great part it supplies. Here we find endless variety of land, woods, bogs, wastes, clearings, each of which affords some specialties in the entomological line. Sand clearings with a few scattered plants, here and there a short pine tree, form the asylums of Fossorial Hymenoptera and yield fine things to the one who hunts.

Near to the Delaware and Big Timber Creek, here a county boundry, in the corner of Gloucester County, is such a sandy

place as has been described ; here was found the type of *Miscophus americanus* Fox, by the describer himself, on September 9, 1890. In a somewhat similar place, no more than two miles farther east, and near North Woodbury in the same county, were collected some interesting aculeate species, two of which proved to be new. Here *Miscophus americanus* makes its home. This species still remains the only representative of the genus in America—it has not been recorded from any other State. Three trips were made to this locality, June 13, 22 and August 1, 1901. In this sandy area bounded by woods, roads, waste field and feeble run, were noticed numerous aculeates, so many indeed as to require constant vigilance to detect and capture them as they emerged from or arrived at their nests. The days were bright and sunny, the heat almost uncomfortable as the rays were reflected from the hot surface of the sand. *Miscophus americanus* was not taken in departing or returning to the nest, but sometimes on a dead twig or sporting on the sand. Tachina flies were noticed evidently waiting their chance to lay an egg in one of the tunnels.

Plenoculus in New Jersey. This genus had never been recorded any further east than Agricultural College, Michigan, type locality of *P. davisii* the type of the genus, but here in New Jersey were two species, evidently new to science. They have been named *P. atlanticus* and *P. foxii ;* both were captured while resting on the sand. *Atlanticus* was at first thought to be identical with *davisii*, but closer study convinces one that it is distinct; its identity will no doubt be more firmly established when the female is found. *P. foxii* is a handsome neat species, both sexes of it being taken. The Mutillidæ were also well represented here, males and females in three genera were about. *Methoca bicolor* were running on the sand with *M. stygia* hovering over them ; though not noticed in coitu, they must be sexes of one species, and *M. stygia* will hold as the name, as its description comes before *bicolor ; Myrmosa unicolor* Say and *M. thoracica* Blake were found the same way, and with Mr. Ashmead I believe them to be sexes of one species. *Sphærophthalma canella* Blake was here hovering over the sand above *S. rugulosa* Fox ; here again it is believed we have to deal with

sexes of one species—*canella*. There is no good reason why it should not be so. The following are the descriptions of the new species.

Plenocolus foxii, n sp.*

Clypeus produced, like a blunt beak, dorsulum closely punctured especially medially, enclosure of metanotum longitudinally striate, pygidium almost impunctate.

♀.—Length 5 mm. Clypeus longitudinally raised medially with a triangular smooth to polished area, from the apex of which there extends back on the front, terminating before its middle a longitudinal sort of carina. Front convex, very finely punctate or rugulose. Space between posterior ocelli distinctly greater than that between them and nearest eye margin, cheeks indistinctly sculptured, dullish, finely silvery sericeous, the raised portion of the front (which extends down to a point meeting the supraclypeal carina) indistinctly sericeous, almost bare, the depression on each side of the raised space satiny, the clypeus less so. First flagellar joint longer than the second, but not as long as the second and third joints united. Pronotum very finely sculptured. Dorsulum slightly impressed medially where it is closely finely punctured, there is a slight indication of a line to each side of this median impression, beyond which the dorsulum is provided with separated and more distinct punctures and also a faint impression. Mesapleuræ with a longitudinal impressed line, the sculpture obscured by a silvery appressed very short pubescence. Scutellum uniformly finely sculptured. Disc of metathorax finely rugulose, with separated imperfectly formed longitudinal striæ. The sides of the metathorax finely indistinctly striate, silvery sericeous. Dorsally the thorax is no more pubescent than the front. Second recurrent nervure received by the second submarginal cell a little beyond the middle. Abdomen subopaque, finely indistinctly sculptured, the segments with a transverse apical impression, partly sericeous, more conspicuous and silvery on the sides. Pygidial area shining.

Black; mandibles whitish on basal half, ferruginous to brown on apical half. A line on pronotum with a broad interruption medially, the tubercles and tegulæ partly, postscutellum, the four anterior femora apically and all the tibiæ above primrose yellow, the tibiæ beneath and the tarsi entirely, brown or brownish.

♂.—Length 4 mm. Differs from the female in having the clypeus produced into a truncate production with a median tooth, and in the indistinctly finely sculptured sides of the metathorax. In color it differs by the markings being more lemon yellow, the tarsi in part unicolorous with the markings. The tibiæ pale brown beneath, and the flagellum with a brown space taking in about all of joints three, four and five.

* Dedicated to William J. Fox, author of this interesting genus.

Type coll. H. L. Viereck. Co-type coll. Acad. Nat. Sci., Philadelphia. Type, locality North Woodbury, Gloucester Co., N. J., June 22 and August 1, 1901 (H. L. V.). Two females, one male. This species is maculated like *P. albipes* Ashm., but is evidently distinct from that species.

Plenoculus atlanticus, n. sp.

Clypeus narrow, broadly truncate with a blunt corner, front with a longitudinal line running from the fore ocellus. Dorsulum uniformly sculptured, metanotum transversely striate. Apical dorsal segment with with a few indistinct punctures.

♂.—Length 4.5 mm. Clypeus with the truncation as broad as its length. shining and sparsely punctured. Front slightly convex, not distinctly impressed laterally, very minutely and uniformly sculptured, opaque, a shining impressed line running from the anterior ocellus down on the face to near the insertion of antennæ, cheeks more shining almost similarly sculptured. No part of the head thickly sericeous, the pubescence heaviest on face; excepting on cheeks, where it is silvery, the pubesence is golden. First joint of the flagellum about as long as the second, mandibles internally with a distinct tooth near the middle. Dorsulum finely uniformly sculptured with two parallel shining lines medially, not extending to the middle. A line starting before the middle laterally extending almost to the posterior border, mesopleuræ with a curved impressed line anteriorly, microscopically, uniformly sculptured. Metanotum longitudinally impressed medially, with tranaverse fine striæ, some of which originate on the anterior border and radiate off to the sides, the small triangular polished impression on the superior half of the metathoracic truncation distinct, the base of the truncation and the metapleuræ sculptured much like mesopleuræ. Second recurrent nervure received by the second submarginal cell distinctly beyond the middle. Abdomen dull, apical segments becoming shining, the apical segment with sparse ill defined punctures.

Black; clypeus ochre yellow, mandibles, exceping brown apices, lemon yellow, part of scape, anterior femora beneath, the apices of all the femora and all tibiæ and tarsi more or less tawny ochraceous.

Type coll. H. L. Viereck. Co-type coll. Acad. Nat. Sci., Phila.

Type, locality North Woodbury, Gloucester Co., N. J., June 13, 1901 (H. L. V.). In the co-type the striæ of metanotum are almost entirely missing. This species is closely related to *P. davisii* Fox, from which it can be distinguished by the clypeus, the finer sculpture, and quite readily by the coloration.

A Trip to Lake Josephine, Fla.

By John and Hurd Comstock, Evanston, Ill.

We were tired of the collecting around Avon Park, not because there were no insects to be found but for the reason that we had become familiar with the country. The scenery on the sand hills is not as tropical as one coming from the North might wish. Having heard of a picturesque "flatwoods" lake some twenty miles south we decided to take a camping trip to this place.

So after securing our outfit, which consisted of a mule and wagon, blankets, guns, a frying pan and provisions for four days, also the ever necessary compass and map, my brother Hurd and I started southward.

The way led through country in which no sign of human existence would be met for miles except the dimmest and roughest of roads. The sun beat down on the sandlike soil, causing the heat to radiate from it in waves. We found pleasure in keeping as quiet as possible, and so did the mule which caused me some exercise. All morning we travelled through a barren waste, overrun with scrub oak and saw palmetto, and without once seeing a man or dwelling of any kind. At noon we entered a stretch of saw-grass prairie where we kept the road with difficulty. After passing this open land the aspect of the country changed. The pines became larger and dwarf oaks vanished. In low places cabbage palms reared their lofty heads, and along waterways cypress were in abundance. The magnolia bay, food plant of *Papilio palamedes* was commonly met with. Soon we came to a cattle pen where we ate lunch and fed our animal. A log hut stood at one end of the pen and an old woman, who seemed to be the sole occupant, told us the way to Lake Josephine. She was a typical South Florida 'cracker,' dirty and snuff besmeared, but hospitable to a degree, as is the case with most of these solitary people. I left her in a state of wonderment by the information that we had come to hunt butterflies. I can imagine her remarking in the peculiar Southern drawl, "them there Yankees shure are purty big fools," and strengthening the opinion with a liberal portion of snuff. This, of course, after we had left.

Late in the day we came in view of the lake, and what a beautiful sight met our eyes. The blazing tropical sun was just sinking in the west, silhouetting the grand palms and live oaks and doubling itself in the still waters of the lake. On a half submerged log sat a water turkey, who did not move when we approached. He seemed conscious of a truce, for it was the hour of peace and quietude, when mother nature's children cease their killing and prepare for another night.

A solitary hut stood near one end of the lake, and toward this we directed our steps. After being welcomed by the usual crowd of barking dogs and staring children, we received permission from the owner to camp a short distance from his cabin. Our evening meal disposed of by the light of a camp fire, we rolled ourselves in blankets and were soon fast asleep. No covering was needed to guard against mosquitoes as, strange to say, there were few of these pests. Whether it was too early in the year for them or not I do not know, but I presume this was the reason. The nights are quite cool in the beginning of May. Next morning we awoke with the birds, in time to see the glorious sunrise, and also to catch a nice string of fish. After a hearty meal we started out in search of Rhopalocera. Then began the finest collecting day of our Florida trip. Butterflies fairly swarmed. The most numerous was *Thecla favonius*, which we took plentifully all around the lake. *Neonympha phocion* hovered over every swamp, and *sosybius* was plentiful in the woods. *Anosia berenice*, *Papilio ajax*, *Meganostoma cæsonia* and many others were abundant. In a hummock at the north end of the lake we took *Chlorippe flora* and one *alicia*. All the very common species, such as *Junonia cœnia*, *Papilio philenor* and *Dione vanillæ*, were as plentiful as at Avon Park. Only one thing marred our happiness. We could not get enough paper with which to put the specimens up in shape for transportation. Our 'cracker' friend could not read, consequently he had no use for paper, and we had thoughtlessly neglected to bring a supply with us. Partly on this account and partly because we only stayed two days we did not secure a very large supply.

Fishing was excellent. Catfish fairly longed to be out of the

water, and bass were quite plentiful. We had the good fortune to see a large 'gator' on the second day of our stay. The woods were full of small game, such as squirrel, rabbit and quail. The latter, however, we could not shoot as it was out of season.

The time of departure came all too soon. On the morning of the fourth day we pulled up stakes and turned our faces towards Avon Park. We both agreed that should we ever again visit Florida more time would be spent at Lake Josephine.

Those who wish to find this lake must take a large scale map of DeSoto County and look for Lake Kuhlman. Josephine is the name by which it is known to those who live near it, and should you ask the way to Kuhlman most of them could not tell you.

Fifty-four species of Rhopalocera were taken at Avon Park unless otherwise stated. The following were the most interesting captures:

Phyciodes phaon.—Fairly plentiful in May.
Timetes petreus.—One only, May.
Limenitis floridensis.—Four, April and May.
Chloripe alicia.—One, Lake Josephine.
Chloripe flora.—Lake Josephnie.
Neonympha phocion.—Very common over marshes in April and May, both at Avon Park and Lake Josephine.
Calephelis cænius.—Not very common.
Thecla M. album.—More often met with than the preceding species.
Terias elathea.—One in February.
Terias jucunda.—Quite common in May.
Terias delia.—Fairly common in February only.
Papilio palamedes.—Quite common from February 20th to March 25th. Taken occasionally after that time.
Pamphila palatka.
Megathymus yuccæ.

On the Validity of Dasyllis Affinis Macquart.

By Chas. W. Johnson.

In the catalogue of described Diptera of North America (2nd Edition), page 233, note 114, Baron Osten Sacken says: "*Laphria affinis* Macq., the type of which I saw in Mr. Bigot's collection, looks very much like *L. thoracica* in the variety with

altogether black abdominal pile. The description speaks of *white* hairs about the head which do not exist in *L. thoracica*, but does not shake my belief in the synonymy."

For some time I have had in my collection two specimens, one (♂) collected at Jackson, Alabama, Oct. 23, '94; the other, (♀) from Dr. G. de N. Hough, was collected by Mr. G. R. Pilate at Tifton, Georgia, Oct. 10, '98. Last year (Oct. 21, '01) Mr. E. Daecke obtained a male of the same species at Manumuskin, N. J., and on Oct. 20th I was fortunate enough to capture a female at Riverton, N. J. The above measure respectively 20, 14, 20 and 19 mm. Macquart's description was based on a male, and the two specimens before me agree with it in all of the more important features: palpi black with black pile, beard white, pile on the sides of the face white, mystax black with some intermingling white hairs, pile on the front black and on the sides of the head white; abdomen narrow, with black pile; femora and tibia with yellow hair which, on the under side of the posterior legs, is black, In the females there seems to be considerable variation, the pile on the face (including the mystax), the beard and inferior orbits is entirely black, while the specimen from Riverton has only a small upper portion of the orbits slightly white pilose.

In general appearance it more closely resembles *D. flavicollis* than *D. thoracica*. From the former it is readily separated by its black mystax, the pile on the thorax is noticeably thinner and entirely erect, the shining, glaucous ground color showing clearly. From *thoracica* it differs in being much narrower, the head proportionately larger and nearly as wide as the thorax; the hair on the front and vertex black, and the pile on the thorax shorter, more sparse and of a dull, not a bright yellow.

This seems to be an autumnal species. Of the other four species found in this section I have no records of capture later than the middle of July.

A HERMAPHRODITE LYCÆNA.—On July 14th, 1901, I was fortunate enough to capture, at Fortune's Rock, near Biddeford, Me., a specimen of *Lycæna pseudargiolus*, summer form *neglecta*, whose wings on right side are typical male, while those on the left are heavily bordered with black, equally typical of the female sex.—A. F. WINN, Westmount, Que.

Some New or Little Known Bees.

By Charles Robertson, Carlinville, Illinois.

Osmia cobaltina Cr.

Osmia cobaltina Cresson, Trans. Am. Ent. Soc. VII. 104, ♀, 1878.
Osmia Illinoensis Robertson, Trans. Acad. Sci. St. Louis vii, 347, ♂, 1897.

Osmia atriventris Cr.

Osmia atriventris Cresson, Proc. Ent. Soc. Phil. iii, 29, ♀, 1864.
Osmia proxima, Cresson, ibid. 32, ♂.

Osmia major sp nov.

♀.—Closely resembles the female of the preceding, but is much larger: the mandibles at apex relatively broader, the middle tooth much nearer the outer than inner tooth, while in *O. atriventris* the middle tooth is about half way between the two; segment 6 of abdomen more pubescent, more finely punctured. Length 11 mm.

♂.—Also closely resembles the male of *O. atriventris*, but is larger, the second ventral segment more finely punctured, its apical margin rather densely pubescent. Length 10 mm.

Carlinville, Illinois; 2 ♀, 1 ♂ specimen.

Osmia cordata sp. nov.

♂.—Resembles the male of *O. major* in size, general form, color and pubescence; antennæ long, black, joint 3 hardly longer than 2, much shorter than 4; wings hyaline, basal nervure interstitial with median; notch on segment 6 of abdomen very wide and shallow; 7 strongly bidentate, as usual; ventral segment 1 coarsely punctured, emarginate so that it appears cordate. Length 10–11 mm.

Carlinville, Illinois; 2 ♂ specimens. This may be the male of *O. brevis*.

Osmia pumila Cr.

Osmia pumila Cresson, Proc. Ent. Soc. Phil. iii, 35, ♀, 1864.
Osmia vicina Cresson, ibid. 38, ♂.

Illinois specimens of the ♀ were identified by Mr. Cresson as *O. albiventris*, and I have suspected that the sexes described under that name did not belong together. Through the kindness of Mr. Cresson I have had an opportunity to examine the type. It is hard to distinguish the females of the two species. The female of *O. pumila* is usually smaller, the last joint of antennæ about as long as 4–6 together, enclosure of metathorax more metallic, less triangular, above with a transverse rugose

band, anterior margin of clypeus more regularly truncate, segment 5 of abdomen more densly punctured, hind tibiæ more coarsely punctured. In *O. albiventris* ♀ the anterior margin of clypeus presents two lateral teeth and a median emargination, so that it appears somewhat quadridentate, the last joint of antennæ relatively shorter, the enclosure of metathorax more blackish, more uniformly finely rugose, without the superior transverse series of rugosities. Of the four female types examined one belongs to *O. pumila.*

Nomada bella Cr.

Nomada bella Cresson, Proc. Ent. Soc. Phil. ii, 287, ♂, 1863.
Nomada maculata Cresson, ibid. 303, ♀.
Nomada maculata Robertson, Trans. Am. Ent. Soc. xx, 275, ♀♂, 1893.

I have examined all except one of the type specimens. The mandibles are bidentate. In the original description of *N. maculata* were included some doubtful males and some apparently doubtful varieties.

Nomada simplex sp. nov.

Nomada bella Robertson (not Cresson), Trans. Acad. Sci. St. Louis vii, 340, ♀, 1897.

♂.—Black, apical segment of abdomen ferruginous; head and thorax densely punctured, clothed with long and rather dense pubescence; joints of flagellum slightly denticulate at apex beneath; scutellum hardly subbilobed, unusually low; apical segment bifid; mandibles, clypeus, labrum, inferior orbits in front, scape in front, tubercles, and fasciæ on abdominal segments 1–6, lemon-yellow; the fasciæ more or less narrowed or notched medially in front, sometimes interrupted, behind with an indentation on each side, which on segment 5 sometimes passes through the fascia, leaving a spot on each extreme side; tegulæ lemon-yellow or yellowish ferruginous; flagellum beneath reddish testaceous; anterior and middle legs yellow, the femora and tibiæ largely black behind; hind legs dark, except knees, apex of tibiæ and apical joints of tarsi; wings hyaline, apical margins clouded, nervures and stigma testaceous. Length 8–9 mm.

Epeolus lectus Cr.

Epeolus lectus Cresson, Trans. Am. Ent. Soc. vii, 88, ♀, 1878.
Epeolus agnatus Cresson, ibid. 89, ♂.

I have examined the types. The spurs of the ♀ are not black. The structure of the abdomen is quite different from

E. lectoides, being strongly punctured, segments 2–4 with the apical margins replexed. The pubescent fasciæ are quite continuous, not interrupted as in *E. lectoides*.

Epeolus autumnalis sp. nov.

♀.—Maxillary palpi two-jointed, with only one evident free joint; head and thorax densely confluently punctured, the lower part of pleura with some shining impunctate intervals; scutellum unusually flat and transverse, lateral spines large, not equaling the posterior margin of scutellum; black, middle of mandibles rufous; tubercles, more or less, tegulæ, tibiæ and tarsi, including tibial spurs, ferruginous; femora and trochanters, especially of hind legs, more or less blackish; middle of face, collar, border of mesonotum and two lines on anterior middle, border of tubercles, posterior margin of scutellum, postscutellum, sides of metathorax, base of abdomen and apical margins of segments 1–4 with yellowish cinereous appressed pubescence, the fasciæ more or less notched or interrupted; segment 5 has a large patch on each side, the extreme apex showing a lunate patch of silvery pubescence; wings subfuscous, the apical margins darker, the nervures and stigma fuscous. Length 10 mm.

♂.—More pubescent, especially the face and pleura, segments 1–6 of abdomen with apical fasciæ, wings more hyaline. Length 7–9 mm.

Carlinville, Illinois; 5 ♀, 6 ♂ specimens.

E. pusillus closely resembles this species, but is smaller; lateral spines equaling scutellum; tibial spurs black; pubescence of segment 5 of abdomen, before the silvery lunule, transverse, nor forming two lateral spots; trochanters and and femora more red.

Triepeolus minimus sp. nov.

♀.—Closely resembles the female of the preceding, but is smaller; the maxillary palpi three jointed, with two evident free joints; scutellum more elevated, more bilobed, lateral spines shorter, less flat; face and pleura more densely pubescent, fascia on segment 2 of abdomen with a lateral subquadrate patch extending forwards black; the labrum and three basal joints of antennæ partly ferruginous; legs red, hind trochanters and femora more ferruginous, the front ones more black; wings hyaline, apical margins clouded. Length 8 mm.

Carlinville, Illinois; 1 ♀ specimen.

Dr. W. J. Holland, Director of the Carnegie Institute and author of the Butterfly Book, is actively engaged in the preparation of a work on the Moths, to be profusely illustrated by the three-color process.

Identity of Hemaris Tenuis and H. Diffinis.

By ELLISON A. SMYTH, JR., Blacksburg, Va.

I received additional confirmation this spring, that *Hemaris tenuis* and *H. diffinis* were seasonal forms of one species, and that the effect of winter upon either form in the pupa state, is to produce *H. tenuis*.

Tenuis is the spring form, and *diffinis* the late summer form from eggs of either form.

In my article of the same caption as this, which appeared in the ENTOMOLOGICAL NEWS for November, 1900, on page 585, I spoke of obtaining eggs from a captive female *tenuis* on June 1, 1900, from which about thirty *diffinis* emerged by July 20th. I ended the paragraph as follows: "The balance of these pupæ at this writing (Sept. 13th) seem inclined to winter. Whether they will emerge in the spring as *H. tenuis* or *H. diffinis* remains to be seen."

I carefully kept to themselves these pupæ of *tenuis* parentage, the bulk of which had emerged as *diffinis*, and on May 25, 1901, they commenced to emerge. Eighteen imagines appeared: Of these, thirteen are small typical, light yellow, even margined *H. tenuis;* two are buff yellow like *diffinis*, with, however, very slight emargination; three have slight but distinct emargination and are white yellow like *tenuis*. All were, of course, smoky when they emerged, and those killed at once retain the cloudy areas.

Thus, early summer eggs from *H. tenuis* produced *H. diffinis* later the same summer and pupæ from the same brood, lasting over the winter produced *H. tenuis*, the parent form, the following spring.

I have already abundantly shown that eggs of *H. diffinis*, hibernating as pupæ, produce *H. tenuis* the following spring. The question of identity needs no further proof, though it will be interesting to try the effect of artifficial cold on pupæ from *tenuis* eggs, which normally produce *diffinis*, to see if *tenuis* will result. This I have not done yet.

The above specimens and the others illustrating my breeding experiments are all in my collection carefully labelled.

Notes on Certain Coleoptera.

By L. E. Hood.

At the request of an entomological friend, and armed with a sketch map of the Harvard College grounds giving the localities of certain trees that, in the years ago, were sadly infested with *Chrysomela scalaris* Lec. in all its stages, I made repeated visits to Cambridge this season, hoping to secure living larvæ and imagos for scientific study.

I searched carefully both on the college grounds and in the vicinity without success. Not a single specimen was to be seen, and seeing the futility of further search in this locality, I next went to the Old Roxbury Cemetary in Roxbury, Mass., where I have seen both the larvæ and imagos of this Chrysomelid so numerous that they were absolutely a nuisance. Here I only secured a single adult, no signs of larvæ being visible.

Other localities in Medford, Malden and Braintree, were visited without success.

I only know of a single larva, that a local collector found in Roxbury, having been seen this season in this neighborhood, and I can only understand this remarkable scarcity of a species usually so common, but as being the result of our cold wet spring.

All species of Coleoptera, with a few exceptions, have been scarce this year, and in general the season is a failure as far as collecting goes.

Among other leaf-feeding beetles the same scarcity was observable, the only locality where I have met with any real success in beating was in a swampy field near Braintree, Mass., where I collected the first week in July.

In Mordellidæ only two species were at all common, and these not in the same proportion as in recent years.

All species of *Rhynchophora* were rare, only half a dozen species having been collected during the year, one of these, *Eurymycter fasciata* Oliv., I find high up on trees among fungus.

In Cerambycidiæ I have secured but few individuals, and the spring catch of Carabidæ was a total failure.

The only species of *Cincindela* at all common was *C. sexgut-*

ta. *C. hentzii* was certainly three weeks behind the usual time of appearance, and specimens have been scarce and shy.

While the rule has been a great dearth of both species and specimens, the exception has given a few splendid series of species generally considered very scarce in this region, the most notable being in the Buprestidæ and certain genera of the Chrysomelidæ. During the summer I was presented with a fine little weevil that was found alive in a cargo of fruit from the West Indies.

Three New Species of Nemoatcerous Diptera.

By D. W. COQUILLETT.

The early stages of the following new species of Diptera are to be treated of by Dr. H. G. Dyar, at whose request the writer hereby names and characterizes these species in order that they may be recognized in the future. So little is known in regard to the early stages of our Diptera that any facts on this subject will form a welcome addition to our scanty knowledge, and it is fortunate for the science that so experienced a biologist as Dr. Dyar is to devote a portion of his energies to this interesting but greatly neglected field of research.

Ceratopogon varicolor, n. sp.

♀.—Head black, eyes quite widely separated on the front, antennæ brown, the basal joint and sutures of the small ones yellowish, mouth parts brown; thorax black, opaque, gray pruinose, mesonotum in middle of the front half marked with a pair of brown vittæ, scutellum brownish yellow, abdomen pale yellow, dorsum of first segment brownish; legs yellow, coxæ, a band before apices of front and middle femora, near base of front and hind tibiæ, and the hind femora, except the extreme bases, black, narrow apices of tibiæ and joints of tarsi also black; first hind tarsal joint about twice as long as the second, the fifth about twice as long as the fourth, not spinose on under side, claws large and of an equal size, each front femur bearing four stout spines on the apical half of the under side, other femora without spines; wings hyaline, bare, third vein separated from the first, not connected with it by a crossvein, ending near four-fifths length of wing, fourth vein forks slightly before small crossvein; halteres yellow; length, 3 mm.

A female specimen bred September 4 by Dr. H. G. Dyar. Type, Cat. No. 6083, U. S. National Museum.

Hab.—Bellport, Long Island, N. Y.

Near *setulosus* Loew, but differing in the coloring of the legs, the absence of black bristles on the hind tibia, etc.

Tanypus dyari, n. sp.

♂♀.—Yellowish brown, the scutellum, abdomen, halteres and legs pale yellowish, the abdomen changing into yellowish brown toward the apex and with a similarly colored band on the preceding segments except the first, a brownish band before apex of each femur and near base of each femur and near base of each tibia; antennal plumosity of male brown mixed with whitish and changing into white at the apex; mesonotum opaque, grayish pruinose, the three vittæ indistinct, yellowish brown; abdominal segments 2 to 6 bearing near the base a dorsal cluster of rather long brown hairs; front tibiæ only pubescent, their tarsi bearing a few rather long hairs, middle and hind tibiæ densely covered with such hairs; wings densely haired, hyaline, a median band and the apical third brownish and marked with several hyaline spots; median band very irregular, greatly contracted at the middle and expanded at each end, the median crossvein about at its middle and clouded with a darker brown, the hyaline spots principally situated near the hind margin of the wing; brown at apex of wing contains about 8 hyaline spots and dots; fifth vein forks slightly before the crossvein; length, 3 to 4 mm. Five males and eight females.

Type, No. 6084, U. S. National Museum.

Hab.—Washington, D.C. (D. W. Coquillett, in May); Bellport, Long Island, N. Y. (H. G. Dyar, bred August 27th and 28th); Cambridge, Mass. (Edward Burgess, April 4th); and Detroit, Mich. (H. G. Hubbard).

Corethra brakeleyi, n. sp.

♂♀.—Dark brown, the antennæ, halteres, knees and tarsi yellow; plumosity of male antennæ yellow, mesonotum opaque, gray pruinose except three narrow vittæ and a few spots near the humeri, hairs of thorax brownish, those of the abdomen yellow, tibiæ and tarsi bearing many long hairs; first joint of front tarsi slightly shorter than the tibia; wings whitish hyaline, marked with a brown crossband near one-third and two-thirds its length, the first one oblique, the second band produced triangularly near middle of its inner side, costal margin on each side of this band strongly tinged with golden yellow, fringe white, marked with a brown spot at posterior end of each crossband and on either side of the extreme wing tip; length, 1.5 mm.

One male and three females, bred jointly, August 12th to 14th, by Mr. J. T. Brakely and Prof. J. P. Smith. Type, Cat. No. 6086, U. S. National Museum.

Hab.—Lahaway, N. J.

A New Species of Brachynemurus.

By Nathan Banks.

In a small collection of Neuroptera recently sent me for determination by Prof. Cockerell, I find a species of ant-lion fly not hitherto described. It belongs to the large genus, *Brachynemurus*, and is allied to our common *B. abdominalis* Say.

Brachynemurus cockerelli n. sp.—Face yellow; a large dark brown spot around and between the antennæ, lower each side, but with a faint median line toward the clypeus; vertex yellow, with a brown line each side; antennæ brown, moderately long; palpi yellow, last joint partly brown. Prothorax pale yellow, with four narrow brown lines from base to tip, all of equal width and at equal distances apart; rest of thorax mostly brown, with yellow spots and lines, two small spots on each anterior lobe of the mesothorax, metathorax pale in the middle; pleura brown, with yellow spots most numerous on the posterior part of metathorax. Legs pale yellow, dotted with black, quite thickly above on hind and middle femora; tips of tarsal joints brown; legs with many black bristles, and some white ones on the femora; spurs as long as the first two tarsal joints. Abdomen yellow, striped with brown, venter mostly brown; above each segment has a median and a lateral stripe, leaving considerable yellow between them; the abdomen is clothed with many black and a few white hairs; in the ♀ with the third segment nearly twice as long as the fourth. Wings faintly flavescent; all the longitudinal veins interruptedly brown and white, many cross-veins brown at bases; no brown on the membrane save a small brown dot at the end of the median in fore wings; pterostigma yellowish, small and not prominent; wings moderately narrow, hind ones acute at tips; four cross-veins before origin of the radial sector in fore wings, between anal and cubital veins but one series of cells, few of the costals forked before pterostigma, in fore wing the cubital forks directly below the first fork of the radial sector. Length 31 mm., expanse 62 mm.

One female from Lone Mountain, New Mexico, July (Cockerell). Easily separated from *B. abdominalis* by the four lines on prothorax, by the dotted median vein in fore wings, and by the lack of spots on the membrane. From *B. hubbardi* it is distinct by the yellow color, markings of head, etc.

Mr. S. N. Dunning, of Hartford, Conn., has presented his valuable collection of Hymenoptera to the American Entomological Society. It includes a number of Mr. Dunning's types in this order of insects.

A New Species of Cratichneumon.

By Henry L. Viereck.

Cratichneumon artemis n. sp.—♀.—Length 9.5 mm.—Head and thorax black, abdomen bluish, femora and tibiæ fulvous. Clypeus truncate, polished, with a few punctures posteriorly, the rest of the head polished, sparsely punctured, the cheeks especially so. Ocelli in a low triangle, the space between posterior ones greater than that between them and nearest eye margin; first joint of flagellum distinctly longer than the second, scape globose, punctured. Prothorax strongly incurved, the superior half longitudinally striate. Dorsulum with separated punctures, parapsidal grooves not extending to the middle. Scutellum convex, punctures deep and well separated. Mesopleura separately and deeply punctured anteriorly, posteriorly closer and somewhat striate. Areolæ of metanotum not strongly defined, they are minutely roughened, lateral superior margins of metathorax rather strongly margined, the rest of of metathorax confluently punctured; posterior coxæ closely, strongly punctured. Post-petiole indistinctly striate, becoming sparsely punctured posteriorly; the second dorsal abdominal segment closely and deeply punctured, the following segments less so, the apical ones almost impunctate. Head and thorax sparsely pubescent, abdomen apparently bare dorsally, indistinctly pubescent ventrally.

Black; Mandibles, except apex and base, all of four anterior legs, except coxæ and trochanters, and posterior femora and tibiæ fulvous, like legs of *C. pedalis;* tarsi of posterior legs less brown, abdomen ventrally testaceous, dorsally purplish to bluish; wings subhyaline, nervures and stigma dark brown.

Type Coll. Am. Ent. Soc.

Type locality, Colorado.—One female.

Cratichneumon pedalis pallidipennis n. var.—♀ ♂, Length 8 mm. Differs from the typical form in the subhyaline not deeply fuscous wings, and usually paler legs.

Type Coll. Am. Ent. Soc.

Type locality, Colorado.—Four females, four males, one specimen from Nevada.

Cratichneneumon pedalis varitarsis n. var.—♂, Length 11.5 mm. Distinguished by the uniformly black antennæ, the darker wings, and by the posterior tibiæ and tarsi being almost entirely black.

Type Coll. Am. Ent. Soc.

Type locality, Colorado.—Six female specimens.

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 a 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., MARCH, 1902.

From time to time questions of nomenclature arise in entomology about which there is considerable diversity of opinion, and it is thought by some that entomologists should adopt an authoritative code which all might follow. There is also difference of opinion as to the advisability of considering one or more specimens as types. This question is easier to decide than some of the nomenclatural ones, as the logical deduction appears to be that there should be but one type. It is no uncommon thing to find two good species among a number of specimens all labelled type. We have already advocated a national association of entomologists which should be made up of State associations. To accomplish this it will be necessary for some one person to take interest in the matter and get others interested. When this is done the decision on such questions could be left to the national association.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

I WISH to report the capture of specimens of *Lestes uncatus* Kirby. 2 ♂♂ June 2d and 3d, Nevada, Iowa. 1 ♂, 1 ♀, June 3d, Maxwell, Ia. The specimens from Maxwell were taken on grass along small creek. The specimens from Nevada I know nothing of as they were taken by another

party, and no data given. From Prof. Elrod's list, ENT. NEWS, January, 1898, you will note this as new to Iowa.

I wish to thank Dr. Calvert for identifying and pointing out these facts. —M. E. HOAG.

ASPIDIOTUS HEDERÆ IN AUSTRALIA.—Mr. James Lidgett was in too much of a hurry when he wrote his article (p. 43) on this subject, or he would have noticed:

(1.) That *A. hederæ* is the same as *A. nerii*, which has long been known from various localities in Australia (see Maskell, Trans. N. Z. Inst., xxvii, p. 4.)

(2.) That the synonyms of *A. hederæ* in the Suppl. to Check-List of Coccidæ are on the authority of Berlese and Leonardi, as is stated in a footnote. Moreover, I add, "The names cited as synonymous doubtless represent at least several good varieties."

(3.) That Pandelon is a place, and not a plant.—T. D. A. COCKERELL.

MRS. C. E. GRESHAM, of Lynn, Mass., sends us the following account of an observation made by her deceased father, Alfred F. Chatfield. "A pebble brought out of a hole by an ant in an ant hill, weighed one-half a carat or two grains. Nine of the ants from the hill weighed only one-half a grain. Thus it is shown that one ant can lift thirty-six times its own weight."

ORNEODES HEXADACTYLA, LINN.—On April 23, 1900, I took a single specimen of this species at this place. Prof. C. H. Fernald, in his "Pterophoridæ of North America," says that this species occurs in the western part of this country, and gives as its habitat Europe, Missouri, California, Oregon, Canada, Manitoba. Has it been taken before so far east?—C. O. HOUGHTON, Ithaca, N. Y.

SCHISTOCERCA ALUTACEA AND RUBIGINOSA.—On September 2, 1901, while collecting between Atsion and Quaker Bridge, Burlington County, New Jersey, the writer secured specimens of *Schistocerca alutacea* and *rubiginosa*. The most interesting thing in connection with the captures was the finding of one sex of one form paired with the opposite sex of the other form. This evidence, together with the close relationship of the forms, leads one to question the absolute distinctness of the two. Specimens in the collection of the Academy of Natural Sciences of Philadelphia, taken on the above-mentioned date, are perfectly typical of the two forms, and the two would be flushed from the same bush, but others are an apparently intermediate phase, in which the dorsal stripe does not extend beyond the tip of the pronotum to any marked degree. The last-mentioned specimens would possibly be considered representative of the brown phase of *S. alutacea*, but the whole matter seems deserving of more attention, as apparently too much stress has been laid on variable or uncertain color characters.—JAMES A. G. REHN.

MYSTERIOUS TITLES.—"I understand, Mrs. Grassey, that your son has become quite an eminent lepidopterist."

"Mercy on us! It ain't nothing like a kleptomaniac, is it?"

LAKE LABORATORY, of the Ohio University, located at Sandusky, on Lake Erie. Six weeks' instruction in a field and laboratory course in entomology will be given, including instruction in collecting, mounting and identifying, in connection with studies on life history and anatomy. Course begins July 7th. For particulars, apply to Prof. Herbert Osborn, Ohio State University, Columbus.

CURIOUS HABITS OF CERTAIN HYMENOPTERA.—In the fall of 1901, I received from Mr. F. S. Daggett, Pasadena, Cal., a lot of Hymenoptera, collected under rather peculiar circumstances, which are worthy of note and of biological importance. The lot received consisted of *Pompilus ferrugineus*, *Odynerus sulphureus* and *Chalybion coeruleum*, collected while in quest of Coleoptera and Lepidoptera, Mr. Daggett's specialty, he kindly remembering me by collecting these purposely for me. A peculiarity of these flies aroused my interest, and, asking Mr. Daggett for further particulars, he kindly furnished me with the following notes:

In stopping at a water-trough [Los Angeles Co., Calif.], these insects did not come in a regular line of flight, but came pretty steadily. I was at the water-trough about three-fourths of an hour when I commenced to pick them up with the forceps. There were about fifty, and about the same number left when I quit. Three-fourths of them alighted on the surface of the water with legs outstretched, just the same as the "skaters" do, leaving little depressions about each foot. Little puffs of wind would reach the surface, when the flies would be swept six to eight inches, sometimes sideways, on the surface. In picking them up with the forceps, some would be knocked under water; they at once paddled away like flies, and had no difficulty in reaching the sides and crawling out. The metallic blue *Chalybion* did not alight on the water, but on the edge or sides, working down with short, jerky movements. All the others except *Chalybion* rested on the water, and came in about even numbers; the large, darker ones (*Pompilus*) were more alert and harder to pick up than their companions of a more yellow cast (*Odynerus*.) The honey bees gathered in clusters about the dripping pipe, but did not alight on the water. The weather was extremely hot (106°), and a hot, but not very strong, wind blew up the dry wash. It was at noon when we stopped to feed our horses, and there was no other water for several miles. There were a few flowers of desert-like growth, bnt nothing that these insects were working on.

In collecting and observing Hymenoptera under various conditions and situations for a number of years, I have never seen or heard of a like occurrence, and would like to know if any similar actions of Hymenoptera have been observed by some one else.—R. J. WEITH, Elkhart, Ind.

5-24 1899

PROF. H. OSBORN Dersir

I take the privalige to write to you for to se if I can get any infermation as to how to destroy aunts I hav a lot in the cemetry that they are on that I hav tried coaloil on Tortentine but to no purpos and hav tried pound the surface with a beatle and that only set them to work moar they are working in a great many places in the cemetry I thought perhaps you might give us som plan to destroy shem

pleas answer as soon as convenient

Yours truly ——— ———

I presume every entomologist, especially every one who has had the privilege of serving on a station staff, has had enough experience to become hardened to the amusing efforts of some of their correspondents. However, here is one that may bring a smile and I reproduce it *verbatim et literatim*, all except the chirography which needs zinc etching to do it justice.—HERBERT OSBORN.

Entomological Literature.

COMPILED BY HENRY L. VIERECK AND JAMES A. G. REHN.

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, 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. The titles of all papers will be quoted in the original and not translated.

2. Transactions of the American Entomological Society, Philadelphia. —**4.** The Canadian Entomologist, London, Ontario.—**5.** Psyche, Cambridge, Mass —**11.** The Annals and Magazine of Natural History, London. —**15.** Biologia Centrali Americana, London.—**22.** Zoologischer Anzeiger, Leipsic.—**32.** Bulletin du Museum d'Histoire Naturelle, Paris.—**33.** Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, Vienna —**35.** Annales, Societe Entomologique de Belgique, Brussels.—**44.** Verhandlungen der K. K. Zoologische-Botanische Gesellschaft, Vienna.—**143.** Ohio State University Naturalist, Columbus.—**156.** Zeitschrift für systematische Hymenopterologie und Dipterologie, Teschendorf.

THE GENERAL SUBJECT.—Anon. Les Entomologistes à Montreal. Le Naturaliste Canadien, Chicoutimi, xxix, Jan., '02.—**Brauer, F.** Ueber die von Prof. O. Simony auf den Canaren gefundenen Neuroptera und Pseudoneuroptera (Odonata, Corrodentia et Ephemeridæ), **33,** ix Band, vii Heft, 1900.—**Iches, L.** Les Insects des violettes, La Nature, Paris, xxx, Jan. 25, '02.—**Möbius, K.** Einleitung zu einer Besprechung über den Artbegriff. Gesellschaft Nafurforschender Freunde zu Berlin, Dec., '01.—

Pilcher, J. G. On methods used to preserve color in relaxing entomological specimens. The Entomologist, London, Feb., '02.—**Rossi, G.** Blumen und Insekten. Insekten Börse, Leipsic, Jan., '02.

ECONOMIC ENTOMOLOGY.—Alwood, W. B. San Jose Scale and the Administration of the Crop Pest Laws of Virginia. Third Report of the State Entomologist and Pathologist. Richmond. 1900-01.—**Compere, G.** Some Results of the Introduction of Parasites and Predaceous Insects into California. The Agricultural Journal, Cape Town. xx, No. 1.—**Lavergne, G.** La Filoxera (concl.). Revista Chilena, Santiago, Dec., '01.—**Sanderson, E. D.** Three orchard pests. I. The apple bud borer. II. The fruit-tree bark-borer. III. The periodical cicada. Bulletin 53, Delaware College, Agric. Expm't Station, Newark, Del., Dec., 1901.—**Weed, C. M.** Remedies for the Canker-worm. Bull. 85, New Hampshire College, Agric. Expm't Station, Durham, Oct., 1901.—**Zimmerman, A.** Sammelreferate über die tierischen und pflanzlichen Parasiten der Tropischen Kulturpflanzen III. Die Parasiten des Thees. Centralb. für Bact. Paras. u. Inf , Jena, xxxi, 1, Jan., '02.

ARACHNIDA.—Cambridge, F. O. P. A Revision of the Genera of the Araneæ or Spiders with reference to their Type Species, **11,** 7th ser., ix, Jan., 1902.—Arachnida Araneidea (Mexico and Central America), **15,** Arachnida Araneidea, portions of vol. I and II.—**Dahl, F.** Die Seltenheit gewisser Spinnen arten. Gesell. Natur. f. Freunde zu Berlin, Dec , '01.—**Hansen, H. J.** On Six Species of *Koenenia*, with remarks on the order Palpigradi.* Entomologische Tidschrift., xxii, häft 4, Stockholm.—**Kraepelin, K.** Catalogue des Scorpions des collections du Museum d'Histoire Naturelle de Paris. Catalogue des Pedipalpes des collections du Museum d'Histoire Naturelle de Paris, **32.**—**Rydall, E. H.** Tarantula hunting. Popular Science News, New York, Jan. '02.—**Tragardh.** Revision der von Thorell aus Grönland Spitzbergen und der Bären Insel und von L. Koch aus Sibirien und Novaja Semlja beschriebenen Acariden, **22,** xxv, Band 30, Dec., '01.—**Wasman, E.** Zur Kenntniss der myrmecophiler, Antennophorus und anderer auf Ameisen und Termiten reitender Acarinen, **22,** Jan., '02.

MYRIOPODA.—Morse, M. Myriopods from Vinton, Ohio, **143,** Jan., '02.

COLLEMBOLA.—Lecaillon, A. Recherches sur l'ovaire des Collemboles (Pl. xiii a xvi.) Archives d'Anatomie Microscopique, Paris, 1901.

EPHEMERIDA.—Brauer, F. Ephemeridæ of the Canaries. See general subject.

ODONATA.—Brauer, F. Odonata of the Canaries. See general subject.—**Needham, J. G., and Hart, C. A.** The Dragon-flies (*Odonata*) of Illinois, Part I. *Petaluridæ*, *Aeschnidæ*, and *Gomphidæ*. Bull. Ill. State Labor. Nat. Hist., vol. vi., Sept., 1901.

CORRODENTIA.—Brauer, F. Corrodentia of the Canaries. See General Subject.

MALLOPHAGA.—Osborn, H. Mallophagan records and descriptions,* **143,** Jan., '02.

ORTHOPTERA.—Giardina Andrea. Funzionamento dell' armatura genitale femminile e considerazioni intorno alle ooteche degli Acridii. Giornale di Scienze Naturali ed Economiche. Palermo, 1901.—**Morse, A. P.,** and **Bruner, L.** Orthoptera (Mexico and Central America), **15,** Orthoptera, vol. ii. (portion).—**Scudder, S. H.** On the United States Orthoptera which have been referred to the genus *Tridactylus*, **5,** Feb., '02.

HEMIPTERA.—Cockerell, T. D. A. New Genera and Species of Coccidæ, with Notes on known Species,* **11,** 7th ser., ix, Jan. 1902.—**Distant, W. L.** Rhynchotal Notes—xii. Heteroptera: Fam. Pyrrhocoridæ, **11,** 7th ser., ix, Jan., 1902.—**Hunter, S. J.** Coccidæ of Kansas, iv. The Kansas Univ. Quarterly, Lawrence, July, '01.—**Martin, J., Coutiere, H.** Sur un nouvel Hemiptere halophile (*Hermatobatoides marchei*, n. g. n. sp.), **32,** 1901.

NEUROPTERA.—Brauer, F. Neuroptera and Pseudoneuroptera of the Canaries. See General Subject.—**Hine, J. S.** Notes on Neuropteroid insects, **143,** Jan., '02.

LEPIDOPTERA.—Bachmetjew, P. Ein neu-entdecktes Schutzmittel bei Schmetterlings-puppen gegen Kälte. Societas Entomologica, Zürich-Hottingen, Feb., '02.—**Dyar, H. G.** Life histories of North American Geometridæ, xxx, **5,** Feb., '02. The United States National Museum (Lepidoptera), **4,** Feb., '02.—**Gibson, A.** Additional notes on the life-history of *Arctia phalerata*, **4.**—**Godman, F. D.,** and **Salvin, O.** Lepidoptera Rhopalocera (Mexico and Central America), **15,** Lepidoptera Rhopalocera, portions of vols. i, ii and iii.—**Grote, R.** Fossile Schmetterlinge und der Schmetterlingsflügel, **44,** Dec., '01.—**Heath, E. F.** Notes on the Lepidoptera of 1901 in Southern Manitoba, **4.**—**Lyman, H. H.** A correction, **4,** Feb., '02.—**Packard, A. S.** A preliminary sketch of the Sphingicampidæ, a new group of Protosphingine Lepidoptera, with its subdivisions, i, **5.**—**Smith, J. B.** Three new Noctuids from British North America,* **4,** Feb., '02. *Hydroecia Americana*, Speyer, or *Hydroecia Atlantica*, Smith, **4,** Feb., '02.—**Tallant, W. N.** *Anæa andria* in Indiana, **4.**

DIPTERA.—Bischof, J. Einige neue Gattungen von Musciden, **33,** ix Band, vii Heft. 1900.—**Grænicher, S.** Flowers adapted to Flesh-Flies. Bulletin of the Wisconsin Nat. Hist. Society, ii, No. 1, Milwaukee.—**Stein, P.** Die Walker'schen ausser Europäischen Anthomyiden in der Sammlung des British Museum zu London, **156,** i, July, '01.

COLEOPTERA.—Arrow, G. J. The genus Hyliota of the Coleopterous family Cucujidæ, with descriptions of new forms and a list of the described species, **36,** part iv, Dec., 1901.—**Belon, R. P.** Descriptions de trois Longicornes bresiliens du genre *Ectenessa* Bates, **35,** Jan., '02.—**Blandford, W. F. H.** Coleoptera (Mexico and Central America), **15,** Coleoptera, vol. iv, part 6.—**Champion, G. C.** Sexual dimorphism in *Buprestis sanguinea* Fabr., a species occurring in Spain, and new to the European list, **36,** part iv, Dec., 1901.—**Fall, H. C.** Some Insects of the Hudsonian zone in New Mexico, vii, Coleoptera, **5,** Feb., '02.—**Hayward, R. A.** A note on the secondary sexual characters of *Omophron*, **5,** Feb. '02.—**Kolbe, H. J.** Vergleichend-morphologische Untersuchungen an Coleopteren nebst

Grundlagen zu einem System und zur Systematik derselben. Archiv für Naturgeschichte, '01.—**Luze, G.** *Bolitobuni.* Revision der Paläarktischen Arten der Staphyliniden Gattungen *Bryocharis* Boisd. et Lac. *Bolitobius* Mannh., *Bryoporus* Kraatz und *Mysetoporus* Mannh. **44,** Dec., '01.—**Pic, M.** Contribution a l'etude des Xyletini du Bresil, **35,** Jan., '02.—Description de Coléoptères Brésiliens nouveaux. Le Naturaliste, Paris, xxiv.—**Reitter, Ed.** Bestimmungs-tabelle das Europaischen Coleopteren. (Carabidæ Abth. Harpalini) Verhandlungen naturforschenden Vereins in Brünn, xxxviii. Band. Brünn, '00.

HYMENOPTERA.—Andre, Ern. Descriptions des quelques especes et varietes nouvelles des Mutilles d'Amerique, **156,** i, Sept., '1.—**Bradley, J. C.** The North American *Oryssidæ*, **2,** xxvii, Jan., '02.—The *Evaniidæ* of America North of Mexico*, **2,** xxvii, Jan., '02.—**Cockerell, T. D. A.** A new bee from California,* **156,** i. New bees of the genus *Andrena* from Wisconsin,* **4,** Feb., '02.—**Dickel.** Ueber die Entwicklungsweise der honigbiene, **22,** xxv, Band. 30, Dec., '01.—**Ducke, A.** Beiträge zur Kenntnis der geographischen Verbreitung der Chrysididen und Beschreibung von drei neuen Arten, **156,** Nov., '01.—**Felt, E. P.** Two new species of *Ophion*, **5,** Feb., '02 —**Friese, H.** Neue Arten der Bienengattung *Trigona* Jur., **156,** i, Sept., '01.—**Krieger, R.** Bemerkung zur Nomenklatur des Geæders des Hinterflügels der Ichneumoniden, **156,** i, July, '01.—**Robertson, C.** Some new or little-known bees, ii,* **4,** Feb., '02.—**Titus, E. S. G.** Colorado Bombidæ, **4**, Feb., '02.

A most interesting orthopterological contribution, written by J. Portschinsky in Russian, and translated by J. Kotinsky into English, appears in the *Entomologists' Record* for 1901, xiii, pp. 210–213, 240–243, 259–261. One new species, *Eremobia grandis*, is described, and a little known species, *Nocarodes cyanipes*, treated of in some detail. But the most interesting feature of the paper is the able discussion of the origin of sound-producing organs in the ACRIDIDÆ, and of the adaptation of color in protective resemblance and sexual selection. This portion of the article should prove interesting reading for any one, scientific or not. A short description of the fields about Erivan and Echmiadzin, in Transcaucasia, the home of *Eremobia grandis*, is given and the botanical features noted.—A. N. CAUDELL, Washington, D. C.

Doings of Societies.

At the January meeting of the Feldman Collecting Social, thirteen persons were present. A letter from the President was read stating that on account of illness he could not be present and would read his annual address at the February meeting.

Dr. VanDyke, of San Francisco, Cal., in comparing the Eastern and Western collections of insects, said there are quite a number of species in the Western collections which were not determined correctly and there are also a great many undetermined species which have never been seen East, while the collections in the East are more correctly determined. He spoke about the number of distinct faunas which are found in California and described the forms found in them. He stated that *Omus* went around at night, and during the day would be found under stones or logs and were very swift in their movements. *Cychrus*, as a rule, are only found along water courses.

Mr. Seiss exhibited two species of Blattidæ, collected by Mr. Laurent. One species was *Phyllodromia cubensis*, collected at Miami, Florida. This is the first record of this species (which is Cuban) being found in the United States. The other species was *Nyctibora sericea* taken at Philadelphia. This is the second record of the species being found, the first coming from Massachusetts.

Mr. Laurent exhibited the species of Coleoptera taken in the dried fruit of Yucca in Florida. He thought some of them were new. He also showed the larva of *Lagochirus araneiformis*, which is a rare Cerambycid, taken at Miami, Florida.

Mr. Daecke exhibited a specimen of the male of *Spilochalcis delira* taken at Anglesea, N. J., September 26th. Three females were known before, but this is the first record of the male. It was a parasite on *Dichelia sulfuriana*. The speaker also stated that he had tried to raise a specimen of *Tenodera sinensis*. The insect hatched in June and the first moult took place between the 12th and 14th, the 2nd on June 21st, the third on June 27th, the fourth July 3rd, the fifth July 10th, and the sixth July 26th, and died at this time. It started to eat house flies immediately after the 3rd moult.

Mr. Daecke also exhibited a specimen of *Mutilla montivaga* taken at Little Falls, N. J., September 4th, as a record new to New Jersey.

Mr. Bird, of Rye, N. Y., exhibited a series of the adults and larvæ of the genus Hydrœcia which he had taken around his

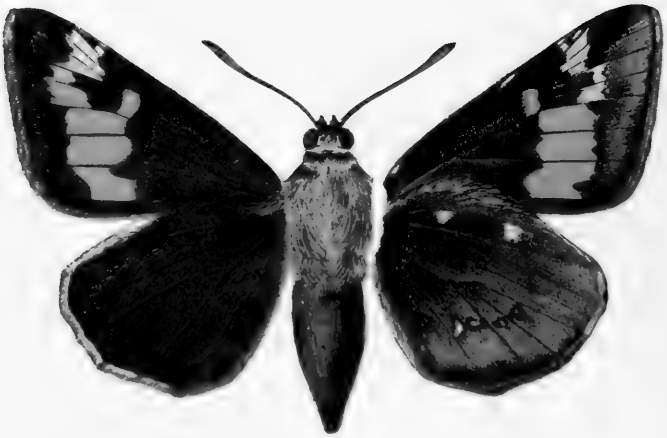
district and raised. He spoke upon their life habits and food plants.

The following officers were elected to serve for the year 1902: President, Mr. Charles W. Johnson; Vice President, Mr. Charles Boerner; Treasurer, Mr. H. W. Wenzel; Secretary, Mr. Wm. J. Fox.

W. R. REINICK, *Secretary.*

A meeting of the Entomological Section of the Academy of Natural Sciences was held January 23d, with Mr. H. W. Wenzel, Vice Director, presiding. Fifteen persons were present, including Mr. Denton, of Massachusetts, and Dr. Van Dyke, of California. Dr. Van Dyke said he noticed that the entomologists of the East have not adopted any general plan for their government in regard to types and co-types and nomenclature. He thought some movement toward an authoritative method should be arranged. He also spoke of the value of exact data in use at the present time. The value of the knowledge of distribution and biological studies was dwelt on. Mr. Vierick said he thought the one-type method should be adopted. Mr. Rehn stated that the Novitates Zoologicæ attempted to form a code with the term variety omitted. He considered this term a rather plastic one. The speaker also described the procedure of the American Ornithologists' Union in regard to questions of nomenclature. Mr. Rehn exhibited pictures of the barren plains of Ocean and Burlington Counties, New Jersey. These plains cover an area of six thousand and seven thousand acres respectively, divided by the Wading river. They are covered by stunted pines and oakes. Fire may have something to do with the curious conditions found. The distribution of the animals and plants of the region was mentioned. Mr. Wenzel said that in certain districts in South Jersey this coleopterological fauna was typically Southern in character. Dr. Skinner exhibited specimens of *Lycæna neurona* and *chlorina* recently described. Mr. Rehn read a report on the Hymenoptera collected by Dr. Skinner in New Mexico. There were about forty species new to science.

HENRY SKINNER, *Recorder.*



A NEW MEGATHYMUS FROM ARIZONA

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. APRIL, 1902. NO. 4.

CONTENTS:

A New Megathymus from Arizona.

By OTHO C. POLING.

See Plate IV.

Large objects are usually first to be discovered, even by a casual observer, so it would seem the more remarkable that our most robust and heavily constructed North American diurnal should have, until the present year, escaped observation.

Megathymus ursus n. sp.—female.—Expanse, 3½ inches.

Colors and markings above and below are correctly reproduced by the accompanying plate. Type, one female in the collection of the author. Habitat, Pinal County, Arizona. When both sexes of the described species in this genus are known, the specific name which I have used in presenting this insect may become synonymous. This, however, is not admitted by any of several well-known entomologists who have seen the insect or its likeness, and my own opinion that it may be the female *neumogenii* is not shared by anyone whom I have

so far consulted. In Biol. Cent. Am. Het. 2, 320, pl. 69, fig. 3 and 4, the male and female *neumoegenii* are figured. Whether *fig*. 4 is in reality the female *neumoegenii* may be considered doubtful when it is known that a structural examination of my series of over one hundred examples taken through three sea-seasons fails to reveal a single female of this species. It is therefore, my conviction that the female *Megathymus neumoegenii* remains unknown. The reference of *ursus*, an insect of more than twice the average size of *neumoegenii*, with body half an inch in thickness and more massive than any diurnal known to our fauna as the female of the smallest species in the genus to which it belongs is, however, too radical to be accepted without positive proof, and it is for this reason that I bestow a specific name on what I consider a described species.

Lost Knowledge.

By C. F. Baker.

The recent death of Dr. Lugger again calls attention to a matter which has been discussed in various journals before. Dr. Lugger was a special student of the Coleoptera and had a very fine collection. He also studied Minnesota moths and had started a valuable collection when I visited him years ago. It was most interesting to go over the beetles with him and listen to his discussions of habits and obscure points in classification; *many facts concerning which, according to his own statement, were unpublished.* He has departed to the "bourne from which no traveller returns," and all that interesting array of knowledge —the gatherings of many, many years of patient and scholarly investigation—have gone with him ; for Dr. Lugger published very little.

Not long ago I reported on what I considered the solution of a very vexing problem—one that had long puzzled me and one that had consumed much time and thought. Soon after, I received a letter from one of our old-time authorities, in which he says : "What is all this fuss about? You are right, but I have known all this for many, many years." He had known

it all long before, but he had allowed an error to be perpetuated in our literature and he had allowed the younger students to flounder on through the same morass he had successfully breasted years before, and which a word from him would have saved them from.

All of our greater authorities should be constant contributors to our magazines. Most of them are not. They are to say why. Most of them are more or less concentrated on great works, but they owe it to us to report on the very numerous secondary results that have always come as a by-product—results often of greatest interest and value. Talk with any of them and you will find them perfect storehouses of knowledge which ought not to remain buried and die with them. They may consider it undignified to publish detached results, but I am sure it is not so. Over and above this consideration, we need, secondarily, their criticism.

Our journals are full of the work of younger students and it all passes current without remark. Incomplete work or erroneous conclusions, often known to be such by the older authorities, frequently receive no further attention than a shrug of the shoulders. They might give us what we need while they dispose of the after-dinner cigar. We need criticism—honest, kindly criticism that hews clean to the line. There are fifteen or twenty men in this country who might raise our standard in connection with entomological work far above what it is with very little cost to themselves, but to the very material enrichment of our entomological literature.

And yet there are others who will pass from us, carrying with them many of their hard-earned results, which they might just as well receive credit for, which would be of inestimable working value to younger students, and which the burying of will but leave to be all done over again.

I might refer, for one instance, to the matter of secondary sexual characters. It is a subject of the very highest biological interest and importance, yet the facts concerning it, as relate to American insects, are almost wholly buried either in technical descriptions or the minds of the older authorities who have studied special groups for many years. I wish a book might

be written on this subject—and it would make a big book—composed of contributions from all the older authorities on their special groups. If as complete as possible and fully illustrated it would make one of the most important entomological and biological contributions of the era, and would be an indispensable work of reference to every entomological student on earth. And this they have to give. Will they give it?

The Blackberry Crown-borer in New Mexico.

Notes from the New Mexico Biological Station 3.

By T. D. A. Cockerell.

Dr. J. B. Smith, in his little work on Economic Entomology, writes: "Blackberries are often attacked by a larva at the surface of the ground or a little below it, boring sometimes a little distance up or down the cane or completely around it, for which reason it has been called the blackberry crown-borer. Signs of its presence are the sudden wilting and rapid death of new shoots, and it comes to maturity in early September of the second year of its life, forming a pupa in the stalk itself. The resulting moth, *Bembecia marginata*, is black, very little marked with yellow, and the only satisfactory remedy is cutting out and destroying the larva as soon as its presence is indicated by the wilting leaves."

This pest has never been observed in New Mexico until I took some of the moths at Beulah, Sapello Canon, July 25 to 31, 1900. This locality is about 8,000 feet above the sea, in what is called the Canadian Zone. Two native plants of the blackberry genus, *Rubus strigosus* and *Rubus deliciosus*, were common at the locality, and it was doubtless in these that the moths passed their early stages. It is quite to be expected that they will attack the cultivated canes, when these are more generally grown.

The moths appear to differ somewhat from the eastern examples, being perhaps rather smaller, with dark scales blue-black; antennæ, sides of thorax and dark parts of legs quite strongly purple; collar almost white; longitudinal marks on anterior part of thorax almost obsolete; basal two-thirds of

four hind femora black; middle tibiæ above with the basal half and the apical fourth black; legs (except the black) orange fulvous; wing-veins beyond the cell on both wings covered with black scales. It seems to me that this New Mexico insect might fairly be given a distinctive name, but Mr. Beutenmuller, who is the principal authority on this group of moths, has examined a specimen and states that it must be regarded as true *Bembecia marginata*.

Nomenclatural Notes on Two Genera of Orthoptera.

By James A. G. Rehn.

BLATTA.

The genus *Blatta* Linnaeus (Syst. Nat., X ed., p. 424, 1758) has been subjected to considerable dividing, as has been the case with almost all Linnean genera, but the fact remains that to-day we hardly know to what to apply the name. An examination of the originally included species reveals the fact that the matter can be quickly settled. As the name *Blatta* is a classic word, the method of procedure would be similar to that used in the case of *Locusta* and *Tettigonia*, recently examined by the author (Canad. Ent., xxxiii, pp. 118–121), the non-exotic species (or rather those treated as such by the original describer) being the only ones to be considered in the process of elimination.

The originally included species, with the genera to which they have been removed and the dates of removal, are as follows:

gigantea—Blaberus Serville (*Blabera* auct.), 1831.
ægyptiaca—Heterogamia Burmeister, 1838.
surinamensis—Pycnoscelus Scudder, 1863.
americana—Periplaneta Burmeister, 1838.
nivea—Panchlora Burmeister, 1838.
africana—Heterogamia Burmeister, 1838.
orientalis—Stylopyga Fischer v. Wald., 1846.*

* Kirby (Proc. Royal Dublin Soc. (n. s.), vi., p. 562) gives the original spelling as *Steleopyya*, citing Bull. Mosc., vi, p. 356, as the reference. I am unable to examine this work, so I use the generally accepted form in the paper.

lapponica——*Ectobius* Westwood (*Ectobia* auct.), 1835.
oblongata—*Pseudomops* Serville, 1831.

By considering the only two non-exotic species, *orientalis* and *lapponica*, the name *Stylopyga* is seen to be a synonym of *Blatta*, as *Ectobius* was instituted eleven years previous. An examination has shown that *Pseudomops* antedates *Thyrsocera* 1838, by seven years, as pointed out by Kirby (Proc. Royal Dublin (n. s.), vi, p. 561).

The name *Kakerlac* Latreille (Le Règne Animal, v, p. 175, 1829), has often been associated with several of the species mentioned above, but on examination it is apparent that but one was so associated by the describer of the genus. Three species, *orientalis*, *limbata* and *decipiens*, were included under Latreille's name; the first being removed to *Stylopyga* in 1846, while the last two were not removed until 1865, when Brunner placed them in his genus *Loboptera*.* The name *Kakerlac* thus replaces Brunner's genus.

ACRYDIUM.

The genus *Acrydium* Geoffroy (Hist. Abr. Ins., i, p. 390, 1762) as asserted by Kirby (Proc. Royal Dublin Soc. (n. s.), vi, p. 592) and Kircaldy (The Entomologist, xxxiv, pp. 241–243), should replace the name *Tetrix* Latreille (*Tettix* auct.) the types being *bipunctatum* L., and *subulatum* L.† In this case the use of the name in connection with the large species allied to *Schistocerca* is not allowable, *Cyrtacanthacris* Walker, 1870, being the next name used for the same.

In a recent study of the Linnaean genus *Locusta* (Canad. Ent., xxxiii, p. 121) the author gave Latreille, 1804, as the authority and data of *Acridium* (an emendation of *Acrydium*), but the proper adjustment of the name, as above, will cause the name *Locusta* to fall on those insects formerly known as *Acridium* or *Cyrtacanthacris*, the latter being sixteen years later than Fischer's genus *Stenobothrus*.

* Burmeister placed these in his genus *Polyzosteria*, but that genus was considerably divided by Brunner.

† To those who would not accept Geoffroy's genera because that author was not consistently binomial, it might be said that Fabricius (the next author to use the name) included, but the two above-mentioned species in the genus (vide Syst. Ent., p. 278, 1775).

The Bee-genus Xenoglossa in California.

By T. D. A. Cockerell.

In Canadian Entomologist, August, 1896, is described the finding of three species of *Xenoglossa* in the flowers of *Cucurbita* in New Mexico. Since that time, wherever I have found *Cucurbita* I have also found at least one species of *Xenoglossa*. Therefore, when I observed quantities of *Cucurbita foetidissima* in the city of Los Angeles last July, I lost no time in looking for *Xenoglossa*, and was duly rewarded by the capture of two species in numbers.

(1.) *Xenoglossa patricia angustior*, Ckll., Entom., March, 1900, p. 64. Described from one example taken at Buckeye, Arizonia.

Five taken at Los Angeles, California, in flowers of *Cucurbita foetidissima*, July 22, 1901.

(2.) *Xenoglossa angelica*, n. sp.—♂, ♀, about 13 mm. long. Similar to the eastern *X. pruinosa* Say, but conspicuously differing in the velvety pubescence of the abdomen, which is orange-golden instead of silvery-white, especially bright and beautiful in the ♀, covering the apical half. Structurally, the insects agree in all essential particulars, and one would not regard them as distinct species, were it not that the color-difference is conspicuous and perfectly consistent in long series of each, and they inhabit entirely different regions.

Hab.—Los Angeles, California, in flowers of *Cucurbita foetidissima*, July 22, 3 ♀, 8 ♂; County Farm, Los Angeles Co., at flowers of *Ipomœa*, 3 ♂, July 15. Also a male taken by my wife at San Diego, Calif., August 10, at flowers of *Ipomœa*.

Xenoglossa ipomœæ Rob, from Illinois, seems to be hardly distinct from *X. pruinosa*.

Notes on Butterflies and Description of an Aberration.

By Addison Ellsworth.

I see by your April, 1901, issue that Mr. Harvey Mitchell, at a meeting of the Harris Club of Boston, exhibited a melanic male *Colias philodice* from Medford, Mass. I would state that I have a melanic male of *Colias philodice* taken in the city of Binghamton, N. Y., Aug. 12, 1898. It is almost coal black, so dark in fact that the usual border is only discernable by its lighter shade.

Another insect in my possession, worthy of more than a passing notice, is a male of *Papilio asterias*, which, but for the four rows of abdominal spots, so closely resembles *Papilio indra* as to be scarcely distinguishable from that species. As in *indra* there is not the slightest indication of fulvous on inner bands on under side of primaries, though it is faintly present on those of the secondaries. It was taken near Lestershire, N. Y., June 17, 1899.

Another interesting form is an aberration or variety of *Melitæa phæton* taken at Vestal, N. Y., June 10, 1890. It is of a deep velvety black with a marginal row of bright orange red spots on both wings, larger than in the normal form. This is followed by a single row of pale yellow spots, the third, fourth and fifth, on primaries, being geminate. A single faint and almost imperceptible red dash marks the center of the discal cell. On under side of primaries are two large brick-red spots and a slight indication of a second transverse band of yellow lunes. On secondaries are six large red spots, promiscuously arranged, and three or four light yellow dots near inner angle. In appearance there is as much difference between this insect and the parent form as there is between *phæton* and any other of our larger *Melitæas* and is more beautiful than any of them. I believe it distinct enough to be worthy a name and would call it *Melitæa streckeri*, in honor of Dr. Herman Strecker of Reading, Pa., the peer of all American Lepidopterists.

New Species of Butterflies from Bolivia.

By A. G. Weeks, Jr.

Lycæna ruberrothei sp. nov.

Head above black, with a gray color; beneath white. Thorax above black, bordered by gray beneath, nearly white. Abdomen above black, beneath white tinged with yellow. Legs white. Antennæ above black; beneath whitish, with annulations at base of each joint. Club light brown beneath. Upper side of fore wing very light blackish brown without any markings. Basal area black suffusing to ground color at centre of wing. Hind margin has a very fine dark thread. Nervures and nervules dark from base to near margin. Upper side of hind wing same as fore wing in general coloring. Hind margin has a very dark fine thread. In the in-

terspaces at hind margin is a series of lunules, black with a very light brownish border. At the upper angle these are scarcely perceptible. The most prominent one situated above the lower submedian nervule. Under side of fore wing very light brownish very heavily dusted with white scales in basal half of wing. There is a mere suggestion of lighter lunules in interspaces at hind margin. The nevures and nervules are somewhat blackish. Under side of hind wing the same except that the dusting of white scales covers the entire wing. Expanse .75 inches.

Hab.—Sicasica, Bolivia.

Taken October 1, 1899, in the mountains near Sicasica.

Cobalopsis duspecca sp. nov.

Head, palpi, thorax, abdomen and legs, dark blackish brown above, brownish gray beneath. Antennæ the same, but somewhat yellowish towards club on underside. Wings above darkish brown, darkening somewhat at basal area.

On forewings are four dots. Two of these are in interspaces next below costa one-third distance from apex to base. The other two are below near central portion of wing and are white lines rather than spots, the first crossing the interspace below top of discoidal space, the second being more prominent and crossing the next lower interspace, but a sixteenth inch nearer base than the first. There is a suggestion of a third subcostal dot under the two above mentioned, and in a long series of specimens this would undoubtedly show itself fairly prominently. Underside of forewing identical with upper surface except that the color is deader and shades to brownish gray towards hind and inner margins. Under side of hind wing dark brown up to a line drawn from upper angle to centre of inner margin; outside of this lighter, tending to grayish brown. Just above subcostal nervure, one quarter inch from base, is a light brownish spot, and outside of it in same interspace is another smaller one. There are two other similar spots below each of these slightly nearer hind margin. The grayish brown area above noted has an interspacial line of same color as basal area, not running to inner margin, but showing prominently in centre of wing only, being more in the nature of a series of interspacial lines. The anal angle, on close inspection, is crossed by a few lighter colored transverse lines, very indistinct. Expanse 1.80 inches.

Hab.—Coroico, Bolivia.

This is closely allied to *C. descritus* Mab. Taken in May, 1899.

Cosmosatyrus nilesi sp. nov

♂.—Head, palpi and thorax dark brown above and below. Antennæ and legs above, dark brown; below, light brown. Abdomen above, dark brown; below, very light brown.

The upper surface of both wings is dark brown suffusing to very light brown or bronze in outer half of wings. The entire surface has a golden lustre.

Fringe at hind margin of forewing is dark brown. Hind margin is edged with a dark thread. The space within the hind margin for a quarter of an inch is somewhat darker than the area next within it and is bordered on its inner side by a dark jagged line running from the subcostal nervule down to the lower submedian nervule. This line is very indistinct in some specimens, quite imperceptible in others. Within this line is an area of very light brown or bronze covering apical area and extending downwards to inner margin; it suffuses into the dark brown of basal area as it reaches discoidal space. In some specimens the basal side of this light area is bordered by a very distinct line of very dark brown, starting near costa and running across outer edge of discoidal space, then extending outwards towards hind margin and in next lower interspace turning towards the base and then turning abruptly towards lower angle. In such specimens the light area of outer half of wing appears as a broad distinct band with its dark borders on either side. The inner margin is black. In the apical area midway from discoidal space to hind margin are two very prominent ocelli adjoining one another, black with a white dot at centre, one above the other and surrounded by light yellowish. Below these in interspace above the lower submedian nervule is another similar ocellus but smaller. In some specimens these ocelli are wanting, there being but one black dot only in apical area.

The hind wing is dark brown suffusing to light, brown or bronze towards hind margin. The nervures and nervules are soft dark brown as they cross this light area. One-eighth inch within the hind margin is a dark line running from upper angle and disappearing as it reaches the anal angle.

Under side of forewing dark brown with a slight golden lustre. Hind marginal fringe dark brown. Hind margin bordered by a dark thread. From the costa one-quarter distance from the apex to base is a distinct dark line running to submedian nervure one-eighth inch within hind margin. There is another line crossing centre of wing from lower subcostal nervule to submedian nervure just outside the discoidal space. This line is irregular. The basal area has no markings.

The under side of hind wing resembles in general appearance, the markings in the genus *Chionobas*. The ground color is dark brown. The nervures and nervules are distinctly white in most specimens. A dark line runs from upper angle to the submedian nervure one-eighth inch within hind margin and following its contour. Across the centre of the wing from costa towards anal angle is another irregular dark line. These two lines are continuations of those on forewing. In the area between these lines is a series of four or five interspacial elongated whitish spots, very prominent in some specimens. The basal area has a mottled appearance owing to a mass of semi-prominent dark interspacial lines. Expanse 1.60 inches.

♀.—General coloring and marking the same as ♂, except that the ocelli and markings are more pronounced in some specimens.

Hab.—Sicasica, Bolivia.

Described from seventeen specimens taken near Sicasica in October, 1899. There is great variation in the prominence of the ocelli, and two figures, showing the two extremes, are at least instructive. My specimens intergrade nicely from one to the other.

Syrichthus nigella sp. nov.

Head, thorax, abdomen and antennæ above, black; beneath, nearly white. Club above, black; beneath, reddish brown. Legs white.

Ground color of forewing nearly black. Basal area and costa near base dusted with whitish scales. In subcostal interspaces near apex, are three white spots. Below these in next two interspaces are two white spots nearer hind margin. In interspace below these is one white spot nearer base, and under the first mentioned subcostal spots. In the next three lower interspaces down to submedian nervure, are three larger white spots, a little nearer base. Nearer costa midway between apex and base is a white dash, and under it at end of discoidal space, a white spot. Below this in next two interspaces are two white spots, the lower resting on submedian nervure and nearer base. The hind marginal fringe is very pronounced, narrower at apex than at lower angle and of pure white. Inner margin edged with white.

Upper side of hind wing of same ground color. Running from centre of costa across centre of wing and ending at submedian nervure is a broad band of white with irregular edges. At its central portion it broadens or suffuses strongly towards the base through the discoidal space. Outside of this band the area to hind margin is nearly black with a line of interspacial white dots. The marginal fringe is very heavy and pure white. Inner margin edged with white.

The spots and white markings of upper surface are very distinctly marked showing scarcely any suffusion.

The general color of the under surface is white with black or dark markings.

On forewing the white spots of upper surface are repeated. The costa midway to apex is distinctly white. The area near costa between the two rows of white spots is dark brownish, the darkest portion of the wing. The space below lower submedian nervule to inner margin is grayish white. The hind margin is touched slightly with brownish. The fringe is white.

Under side of hind wing white. Across apical area is a dash of black. There is a prominent dash of black running from median nervure near the hind margin across to submedian nervure. Above this and parallel

to it, in centre of the wing, is a short black dash. In subcostal area over the discoidal space are two black spots, and another at the base. Inner marginal area tends to grayish. Expanse .80 inches.

Hab.—Sicasica, Bolivia.

Taken in October, 1899.

A List of the Dragonflies Observed in Western Pennsylvania.

By E. B. Williamson.

(Continued from page 71.)

27. **Dromogomphus spinosus** Selys.

Alleghany County (G. A. Link); Alleghany County, May 3, 1899; Ohio Pyle, June 25–30, 1900. The Ohio Pyle specimens have the humeral and antehumeral stripes and the stripe on either side of the mid-dorsal thoracic carina wider than in Indiana specimens; the humeral and antehumeral are continuous for almost their entire lengths, and the stripe on either side of the mid-dorsal carina passes over the antealar sinus, joining with the antehumeral stripe.

28. **Gomphus villosipes** Selys.

Turtle Swamp, June 3, 1899. In the spring of 1900 I found this species in Mahoning County, Ohio, one of the eastern tier of counties in Ohio, very abundant about ponds which had been formed by a small stream changing its course from time to time in a broad valley. The dragonflies spent much of their time at rest on the spatterdock leaves with which these ponds were filled.

29. **Gomphus sordidus** Hagen.

New Brighton, Beaver County, May 28, 1899 (H. D. Merrick); Idlewild, May 30, 1899. In eastern Ohio, Columbiana County, I observed a couple of this species pairing at rest, clinging to the leaf of a blackberry bush. The male held the female by the head with his abdominal appendages.

30. **Gomphus exilis** Selys.

Ohio Pyle, June 28, 1900; Confluence, June 30, 1900. Taken along the Youghiogheny River only at its more sluggish parts where the banks are muddy.

31. **Gomphus spiniceps** Walsh.

Allegheny River, Alleghany County, July 4, 1899, males and females were emerging in numbers.

32. **Gomphus parvulus** Selys.

Allegheny River, Alleghany County, May 13, 1899, and June 10, 1900, a single male on each date (J. L. Graf).

33. **Gomphus albistylus** Hagen.

Lehigh Gap, June 30, 1897, one female (*teste* Calvert); Idlewild, May 30, 1899, one female; Ohio Pyle, June 24, 1900; Rockwood, June 29, 1900. I follow Dr. Calvert and Professor Harvey in regarding *G. naevius* Hagen as a synonym of *G. albistylus* Hagen. I have a male from Professor Harvey which is identical with the Pennsylvania species.

34 **Gomphus brevis** Hagen.

Ohio Pyle, June 24, 25 and 27, 1900; Rockwood, June 29, 1900; Confluence, June 30, 1900. During a week's collecting in June about Ohio Pyle this seemed to be the most abundant Gomphine. It is not infrequently met with in some sheltered, bush-skirted meadow, attracted there probably from its native ripples by the wealth of insect prey which the more retired retreat harbors.

35. **Gomphus viridifrons** Hine.

Ohio Pyle, June 25, 1900, two males; June 28, 1900, one female; Ohio River, May 3, 1899, a single teneral female.

[A drawing—plate 3, fig. 1 accompanying this paper—made by Mr. Williamson before those of Mr. Hine in the Ohio Naturalist, vol i, pl. 5, were published, shows the tips of the vulvar lamina to extend slightly beyond the hind margin of IX, while in Mr. Hines' figures the tips do not reach as far as that hind margin.—P. P. CALVERT.]

36. **Gomphus vastus** Walsh.

Beaver County, May 25, 1899; Alleghany County, May, June and July (J. L. Graf and D. A. Atkinson).

37. **Gomphus fraternus** Say.

Alleghany County, May (R. F. Foerster and J. L. Graf); Ohio Pyle, June 28, 1900, a female, taken while eating a mature male of *Argia putrida*.

38. **Progomphus obscurus** Rambur.

Alleghany County, May (J. L. Graf); Ohio Pyle, June 18, 1899.

39. **Hagenius brevistylus** Selys.

Ohio Pyle, June 18, 1899, one male taken, several seen.

40. **Tachopteryx thoreyi** Hagen.

Alleghany County, June 1 to July 16, 1899, and July 15 and 21, 1900 (J. L. Graf); New Brighton, June 11, 1900 (H. D. Merrick); Ohio Pyle, June 18, 1899 and June 23–30, 1900.

41. **Cordulegaster maculatus** Selys.

Ohio Pyle, June 25, 1900, a single male, flying along the ditch at the side of the railroad track.

42. **Cordulegaster erroneus** Hagen.

Westmoreland County, July, a single female in the collection of the Carnegie Museum.

43. **Cordulegaster obliquus** Say.

Alleghany County, one female (A. S. Brent). A species of *Cordulegaster*, which seemed to be this one, was observed a few times along Squaw Run during the spring of 1899, but none were captured.

44. **Boyeria vinosa** Say.

Ohio Pyle, June 18, 1899, several tenerals were taken.

45. **Gomphæschna furcillata** Say, form *antilope* Hagen.

Pittsburg, May, 1899 (J. L. Graf), one female which entered Mr. Graf's home.

46. **Epiæschna heros** Fabricius.

Beaver County, May 25 and 28, 1899 (H. D. Merrick); Alleghany County, May, June, July, 1899 (E. Frost, J. L. Graf and D. A. Atkinson).

47. **Æschna constricta** Say.

Alleghany County (C. Daggette); Schenley Park, August 13, 1898; Silver Lake, August 27, 1898; Squaw Run, September 12 and 18, and October 16, 1898 (J. L. Graf); McKeesport, July 22, 1900 (D. A. Atkinson.)

48. **Anax junius** Drury.

Beaver County, May 25, 1899; Silver Lake, August 14, 1898; Schenley Park, August 31, 1898; Squaw Run, September 12, 1898; Alleghany County, April 12, May 3, 23 and 28, and June 3 and 4, 1899; Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson).

49. **Didymops transversa** Say.

Ohio Pyle, June 18, 1899, and June 25, 1900.

50. **Macromia illinoiensis** Walsh.

Alleghany County, May, 1899, (J. L. Graf); Ohio Pyle, June 18, 1899, and June 23–30, 1900; Rockwood, June 29, 1900; Confluence, June 30, 1900.

51. **Tetragoneuria cynosura** Say.

Idlewild, May 30, 1899.

52. **Neurocordulia uhleri** Selys.

Ohio Pyle, June 25, 1900, one male; Rockwood, June 29, 1900, two males. The internal triangle is present in the hind wings in every case excepting the left wing of one specimen. The wings are tinged with dull brown throughout, and there is a distinct brown spot in the posterior corner of the anal triangles of the hind wings.

53. **Somatochlora tenebrosa** Say(?)

A female, Westmoreland County, July, in the Carnegie Museum, is probably this species.

54. **Pantala flavescens** Fabricius.

Allegheny River, Alleghany County, August 20, 1900 (J. L. Graf).

55. **Tramea lacerata** Hagen.

Pittsburg, August 30, 1898; Turtle Swamp, May 3, 1899; Idlewild, July 10, 1900 (D. A. Atkinson). On May 3, 1899, another species, probably *Tramea carolina*, was flying about Turtle Swamp, but none were captured. *T. lacerata* when ovipositing goes through the same actions as *T. carolina*, accurately described by Davis in *Journ. N. Y. Ent. Soc. Vol. VI*,

p. 197, 1898, excepting, of course, that the female is held by the head and not by the neck. The pair fly along near the surface of the water; the male drops the female, the female strikes the tip of her abdomen to the water, and as she rises is again deftly seized by the male.

56. **Perithemis domitia** Drury.
Turtle Swamp, June, 1899.

57. **Celithemis eponina** Drury.
Idlewild, July 10, 1900 (D. A. Atkinson).

58. **Leucorhinia intacta** Hagen.
Idlewild, May 30, 1899.

59. **Sympetrum rubicundulum** Say.
Alleghany County, July (R. F. Foerster and D. A. Atkinson); Schenley Park, July 30 and August 30, 1898; Turtle Swamp, July 31 and August 21, 1898; Silver Lake, August 14 and 27, 1898; Squaw Run, September 4, 12 and 18, 1898 (J. L. Graf); Conneaut Lake, August 6, 1898 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson).

60. **Sympetrum obtrusum** Hagen.
Alleghany County, July (D. A. Atkinson and C. Daggette); Silver Lake, August 27, 1898; Conneaut Lake, August 6, 1899 (D. A. Atkinson).

61. **Sympetrum vicinum** Hagen.
Conneaut Lake, August 6, 1899 (D. A. Atkinson).

62. **Sympetrum semicinctum** Say.
Alleghany County, July (D. A. Atkinson and C. Daggette); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson).

63. **Mesothemis simplicicollis** Say.
Alleghany County, July, 1899 (D. A. Atkinson); Turtle Swamp, July 31 and August 21, 1898, and June 3, 1899; Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson).

64. **Pachydiplax longipennis** Burmeister.
Turtle Swamp, August 21, 1898 and May 3, 1899; Pine

Creek, June 4, 1899; Alleghany County, May 23 and July, 1899 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson).

65. **Libellula basalis** Say.

Alleghany County, July, 1899 (D. A. Atkinson); Allegheny River, Alleghany County, August 5 and 18, 1900 (J. L. Graf); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, July 10, 1900 (D. A. Atkinson).

66. **Libellula semifasciata** Burmeister.

Beaver County, May 14 and 25, 1899 (H. D. Merrick); Alleghany County, April 30, May 3, 7, 21, 23 and 28, June 4, and July, 1899 (J. L. Graf and D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Idlewild, May 30, 1899.

67. **Libellula pulchella** Drury.

Beaver County, May 25, 1899; Alleghany County, July 30 and 31, August 14, 21 and 30, and September 4, 1898, and May 21, 23 and 28, June 3 and 4, and July 1899 (J. L. Grat, D. A. Atkinson, A. S. Brent, R. F. Foerster and C. Daggette); Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Ohio Pyle, June 18, 1899, and June 25, 1900.

68. **Plathemis lydia** Drury.

Beaver County, May 9, 25 and 28 (H. D. Merrick); Alleghany County, July 30 and 31, and August 14, 21 and 27, 1898, and May 4, 7, 23, 28 and 30, June 3 and 4, and July, 1899 (D. A. Atkinson, J. L. Graf and C. Daggette); Idlewild, May 30, 1899, and July 10, 1900 (D. A. Atkinson); Conneaut Lake, August 6, 1899 (D. A. Atkinson); Ohio Pyle, June 18, 1899, and June 26, 1900.

ADDITIONS TO THE ABOVE LIST.

By J. L. Graf.

1. **Argia translata** Hagen.

Youghiogheny River, just above Ohio Pyle, September 2, 1901. Identified by Dr. Calvert. Both sexes and several specimens were taken.

2. **Hetærina tricolor** Burmeister.

Youghiogheny River, just above Ohiô Pyle, September 2, 1901. Seven specimens were taken. They are more wary and stronger of flight than *H. americana*. They were usually found resting on bushes overhanging rapids.

During the day when the two above records were made I took 29 specimens of *Boyeria vinosa*. Most of these were males. This species flies very low, just along the water's edge, stopping to inspect every nook and crevice among the rocks. I found it only along the ripples. It is not very wary, but its irregular flight makes its capture rather difficult.

Notes on Collecting Coleoptera in Wyoming and Utah.

By W. Knaus, McPherson, Kansas.

A ten days' trip along the Union Pacific and Oregon Short Line railways through Wyoming and Utah, as far as Salt Lake City, last June, yielded results in an entomological way that may prove of interest to workers in this line of Natural History, and will thus serve as an excuse for presenting these observations to the public.

I left McPherson June 19th, and on the 21st, in the afternoon, was in Laramie, Wyo., situated in the beautiful valley of the same name. It would seeem almost a misnomer to speak of it as a "valley" as the elevation is quite seven thousand feet; but the snow capped mountains looming up to the southeast, south and southwest, serve to remind one that he may be seven thousand feet high and still be in a valley.

A day at Laramie was spent in collecting Coleoptera and mosquito bites along the Laramie River, from a point south of the city to the soda works a mile and a half north, and at, and near two alkali ponds northeastward, and near the edge of the city. Over all this territory the grass was full of mosquitoes of large size, having an appetite most voracious. While collecting a half dozen Coleoptera you would be forced to kill, in self defence, from twenty-five to fifty mosquitoes; thus making

collecting, outside of rare captures, a most active and interesting experience.

I took but one Cicindelid at Laramie, a fine specimen of *fulgida* Say, on red soil without vegetation, a short distance north of the larger alkali pond.

Around the edges of these ponds *Bembidium* was fairly plentiful. Those taken June 21st were, *henshawi* Haywd., *nigripes* Kirby, *rubiginosum* Lec., *ephippiger* Lec., and a new species. A species of *Amara* also occurred in this locality as well as *Amara scitula* Lec., a Pacific coast species. *Harpalus amputatus* Say, and *ellipsis* Lec., were fairly numerous along the Laramie River, but only a single specimen of *basilaris* Kirby was found.

Three species of *Staphylinidæ* were also taken near the alkali ponds; *Aleocharini*, genera and species dubious, *Philonthus aurulentus* Horn, and *Bledius armatus* Er.

One *Hister*, *Saprinus oregonensis* Lec., was common under cow chips, and an *Elater*, *Drasterius elegans* Fab., was beaten from willows.

The Scarabæidæ were represented by *Canthon praticola* Lec., not uncommon in the river valley, and *Aphodius coloradensis* Horn. *Chrysomelidæ* were represented by a few specimens of a species of *Pachybrachys* and *Chysomela verrucosa* Suffr. *Eleodes tricostata* Say, *extricata* Say and *opaca* Say, were somewhat plentiful representatives of the Tenebrionidæ.

Anthicus californicus Laf. was taken on the beach near the alkali ponds.

Curculionidæ were better represented at Laramie than any family of Coleoptera. *Macrops vitticollis* Kirby, occurred on alkali flats under cow chips, and *Lixus laramiensis* Casey, were numerous on a species of thistle on the flats northward. They were feeding on the thistle leaves, and when disturbed would drop down among the spines where they were with difficulty dislodged. A species of *Smicronyx* was also taken here, as well as *Tychius tectus* Lec. Under cow chips on the alkali flats an occasional *Sphenophorus vomerinus* Lec. was found, while in the same situation *Sphenophorus ulkei* Horn was rather common. It is a striking species, easily recognized.

(To be continued)

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 a 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., APRIL, 1902.

Would it be practicable to get the concerted action of the numerous societies of the country to publish a periodical (say monthly) to be supported by *all* entomologists. The thought was suggested to me by reading this morning in the last issue of the Bulletin of the Brooklyn Ent. Soc. (1884-5) the following:—"The unanimous expression of the desirability of a union of Entomological journals that might *secure the support* of all interested in Entomology led to the merging of the Bulletin and Papilio under the name of Entomologica Americana, etc." I believe it is now in contemplation to renew the publication of the Bulletin. In the same periodical, in connection with the death of Dr. Le Conte, was a proposition to try to secure a full set of his writings to be published, but the fact that they were so widely scattered, many of them out of print, made it an impossible undertaking. The question at once arose in my mind, Will this *always* be so? If not, what is being done to remedy the evil? As I understand the present situation, a number of our societies publish (intermittently) their *proceedings*. Why should not all the societies of the country unite to support *one* monthly periodical that should publish the proceedings of every society in the U. S. (and Canada as well) and for this receive their united moral and financial support? In such a publication should be published every description of a new species of

all orders. Such a periodical would be an *absolute necessity* to both collectors and entomologists of high and low degree. I see "original descriptions" are first shown the light by *our leading* scientists, one month in the NEWS, the next in the Canadian Entomologist and the next in some "proceedings." A resolution covering the main idea submitted to the entomological societies of the country for discussion and action would very quickly determine the pulse in this matter. Or would rivalry, jealousy, etc., block such a move? Or am I in error in assuming that such a move would be "in the interest of science," which seems to be the sole object of all the brethren of the net."

F. A. MERRICK.

There is no doubt but that a single publication covering the field of American Entomology would be an ideal thing, but while we recognize the difficulties in bringing about such a result, we do not think it impossible. It would centralize the labor which is now being done, mostly without compensation, in a number of cities or by a number of societies. It would become essential to find—First, someone sufficiently interested to push the matter; second, someone to shoulder the great amount of work that such a publication would make necessary.

GETTING INTO TIBET.—Mount Everest, the highest mountain in the world, presents to the adventurous explorer the same fascination as the north pole. No one has ever reached the summit of this pinnacle of the earth, but mountain climbers constantly are trying to do so. To reach the eastern side of the Everest, the side from which the ascent is most feasible, the explorer has to pass into Tibetan territory. This may be done with perfect safety, as the Tibetans have come to the conclusion that any one who would risk his life to try to reach a place where it must of necessity be exceedingly uncomfortable must be crazy. As crazy men are regarded as holy men in Tibet, the mountain climbers are permitted to pass through Tibetan territory unmolested, receiving, on the contrary, many marks of respect from the natives.

The class of explorer whom the ungentle Tibetan turns out of his country with more asperity than any other is the naturalist. Before Sikkim was annexed a man of science had been through the country collecting specimens of the animal and vegetable life of the little kingdom, and the Tibetans now are convinced firmly that any man who collects moths is really trying to grab territory. It is safer to cross into Tibet with a drawn sword in one's hand than with a butterfly net.—*Clipping.*

Entomological Literature.

COMPILED BY HENRY L. VIERECK AND JAMES A. G. REHN.

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, 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. The titles of all papers will be quoted in the original and not translated.

2. Transactions of the American Entomological Society, Philadelphia. —**4.** The Canadian Entomologist, London, Ontario.—**5.** Psyche, Cambridge, Mass —**7.** United States Department of Agriculture, Washington. —**10.** Nature, London.—**11.** The Annals and Magazine of Natural History, London.—**22.** Zoologischer Anzeiger, Leipsig.—**38.** Wiener Entomologische Zeitung, Vienna.—**49.** Termeszetrajzi Füzetek, Budapest.—**51.** Novitates Zoologicæ, Tring.—**156.** Zeitschrift für systematische Hymenopterologie und Dipterologie, Teschendorf.—**157.** The Ohio Naturalist, Cleveland.

THE GENERAL SUBJECT.—Anon. An Insect Destroying Fungus. Bulletin of Miscellaneous Information, No. 32, Botanical Department, Port of Spain, Trinidad, Jan., '02.—**Brokenshire, F. R.** Preparing Insect Eggs. The American Monthly Microscopical Journal, xxiii, No. 2, Feb., '02.—**Brunetti, E.** Ueber das Etiquettiren der Insekten. **38,** xx Jahrgang, x Heft. p. 231, Dec., 1901.—**Calvert. P. P.** A hint for the Preparation of Internal Organs of Dried Insects. Journal of Applied Microscopy and Laboratory Methods, Rochester, v, No. 2.—**Dewitz, J,** Der Apterismus bei Insekten, seine künstliche Erzeugung und seine physiologische Erklärung. Archiv. für Anatomie und Physiologie, I and II heft, p. 61, Leipzig, 1902.—**Forel, A.** Les facultes Psychiques des insects. Revue generale des Sciences pures et appliques, 13 Année No. 3, p. 120, Feb., '02.—**Holmgren, N.** Ueber das Verhalten des Chitins and Epithels zu den unterliegenden gewebearten bei Insekten—figs. Anatomischer Anzeiger xx Band, Nos. 19, 20, Jan. '02.—**Lutz, F. E.** The Ecology of Insect Sounds. **4,** xxxiv, p. 64, March, '02.—**Webster, F. M.** Changes in Entomological Fauna of N. Illinois, **4,** xxxiv, p. 76, March, '02.

ECONOMIC ENTOMOLOGY.—Anon. Proceedings of the Thirteenth Annual Meeting of the Association of Economic Entomologists. **7,** Bulletin No. 31, New Series.—**Fernald, H. T.** The Imported Elm-Leaf Beetle. Bull. Hatch Experiment Station of the Mass. Agricultural College, No. 76.—**Haywood, J. K.** Insecticides and Fungicides. **7,** Farmer's Bulletin, No. 146. —**Hinds, W. E.** Carbon Bisulphid as an insecticide, **7,** Farmers Bulletin, No. 145.—**Kumm.** Einige wichtige bei uns eingeschleppte Pflanzenschädlinge aus der Klasse der Insekten. Schriften der Naturforschenden Gesellschaft in Danzig, 10 Band, 2-3 heft, '01.—**Sherman, F.** Injurious insects. The Bulletin North Carolina State Board of Agric., Raleigh, June, 1901.

—**Smith, J. B.** The Entomologist's Experiment Orchard. New Jersey Agricultural Experiment Stations, Bulletin 155, Jan., 1902 —**Zimmerman, A.** Sammelreferate über die tierischen und pflanzlichen Parasiten der tropischen Kulturpflanzen. Centralb. fur Bakt. Parasit. u Inset. Kr. viii Band, No. 2, *Jan., '02.

ARACHNIDA.—**Cambridge, F. O. P.** Arachnida Araneidea (Mexico and Central America). Biol. Cent.-Amer., Arachnida Araneidea, vol. I, pl. xxxviii; vol. II, pp. 297-312*, pls. xxix and xxx.—**Michael, A. D.** British Tyroglyphidæ. Vol. I, London, Ray Society.—**Simon, E.** Arachnida (Hawaiian Islands). Fauna Hawaiiensis, ii, pt. v, 1900.

ODONATA.—**Calvert, P. P.** Odonata (Mexico and Central America). Biol. Cent.-Amer., Odonata*, pp. 49-72, pl. IV.

COLLEMBOLA.—**Börner, C.** Über das Antennalorgan III der Collembolen und die systematische Stellung der Gattungen *Tetracanthella* Schött und *Actaletes* Giard, **22,** xxv Band, No. 662, Jan., '02.

MALLOPHAGA.—**Osborn, H.** Mallophagan records and descriptions, **157,** Vol. II, No. 4, p. 201, Feb., '02.

HEMIPTERA.—**Ball, E. D.** The genus *Cochlorhinus* and its allies (Jassidæ), **4,** xxxiv, p. 53, March, '02.—**Cockerell, T. D. A.** A new gall-making Coccid, **4,** xxxiv, p. 75, March, '02.—**King, G. B.** Further notes on Massachusetts Coccidæ, **4,** xxxiv, p. 59, March, '02.—**Van Duzee, E. P.** Notes on some Hemiptera from British Guiana, **2,** xxvii, No. 4, p. 343, Sept., 1901.

NEUROPTERA.—**Banks, N.** A list of Neuropteroid Insects from Mexico, *2, xxvii, No. 4, p. 361, Sept., 1901.

LEPIDOPTERA.—**Anon.** The Colors of Wings of Butterflies, **10,** lxv, No. 1685, February 13, 1902.—**Croft, W. B.** The Colours of Wings in Butterflies, **10,** lxv, p. 391.—**Cezard, L.** Educations de Bombyciens Sericigenes. Bulletin de la Societe Nationale D'Acclimatation de France (Revue des Sciences naturelles appliques), Paris, 49 Annee, Jan., '02.—**Grote, A. R.** An aberration of *Actias luna*, **4,** xxxiv, p. 70, March, '02. Supplementary note on Burtia, **4,** xxxiv, p. 66. Notes on Mr. Lyman's papers, **4,** xxxiv, p. 75.—**Kunze, R. E.** Larva of Datana (species unknown), **4,** xxxiv, p. 74, March, '02.—**Lower, O. B.** Descriptions of New Genera and Species of Australian Lepidoptera. Transactions and Proceedings of the Royal Soc. of South Australia, Vol. xxv, part II, p. 53, Adelaide, Dec., '01.—**Packard, A. S.** On the limits of the family Saturniidæ, with a note on the genus *Rothschildia*, **5,** Vol. 9, No. 311, p. 321, March, '02.—**Poulton, E. B.** Birds attacking Butterflies, **10,** No. 1685, February 13, 1902.—**Rothschild, W,** and **Jordan, K.** On some Lepidoptera. **51,** viii, No. 4, Dec., '01.—**Schaus, W.** New species of Geometridæ from Tropical America, *part ii, **2,** xxvii, No. 3, p. 241, May, 1901. Descriptions of New American Butterflies, Proc. U. S. Nat. Mus., xxiv, p. 383.—**Smith, J. B.** Notes on *Mamestra olivacea* Morr. and its allies, *2, xxvii, No. 3, p. 230, May, 1901.—**Warren, W.** New American Moths, *51, viii, No. 4, Dec., '01.

—**Weeks, A. G., Jr.** Descriptions of nine new Bolivian Butterflies, **2,** xxvii, No. 4, p. 353, Sept., 1901.—**Veley, L. J.** Birds attacking Butterflies and Moths, **10,** lxv, p. 392.

DIPTERA.—**Anon.** The Maggot Fly: Myiasis. The Agricultural Journal, Cape Town, xx, No. 2, Jan. 16, '02.—**Folsom, J. W.** The identity of the Snow-flea (*Achorutes nivicola* Fitch), **5,** Vol. 9, No. 311, p. 315, March, '02. —**Kertesz, K.** *Neoglaphyroptera interrupta*, n. sp., **49,** xxiv, p. 495.—Neue und bekannte Dipteren in der Sammlung des Ungarischen National Museums (Tab. xx), xxiv, p. 403, Oct., 1901.—**Meijere, J. C. H.** Ueber die Prothorakalstigmen der Dipteren-puppen, Zoologische Jahrbücher, xv Band, iv heft, p. 623, Jena, Jan., 1902.—**Schnabl, J.** Ein neues Diptera genus, **156,** 2, p. 94, March 1, '02.—**Williston, S. W., Aldrich, J. M , Wheeler, W. M.,** and **Melander, A. L.** Diptera (Mexico and Central America), Biol. Cent.-Amer, I, pp. i-viii and 329-378, pl. vi.

COLEOPTERA.—**Arrow, G. J.** On Rutelid and Melolonthid Beetles from Mashonaland and East Africa, **11,** (7), Feb., '02.—**Bubna, M.** Coleoptera of Cuyahoga County, Ohio, **157,** Vol. ii, No. 4, p. 193, Feb., '02.—**Everts, J. E.** Coleoptera Neerlandica, Tweede Deel, Sgravenhage, 1901.—**Fall, H. C.**—Notes on *Dichelonycha* and *Cantharis*, with descriptions of new species in other genera, ***2,** xxvii, No. 4, p. 277, Sept., 1901.—**Fernald, H. T.** The Imported Elm-Leaf Beetle. See Economic.—**Harrington, W. H.** Note on *Pityophthorus coniperda* Schwarz, **4,** xxxiv, p. 72, March, '02.—**Reitter, E.** Ein neues Coleopteren-genus aus Mittel-Europa, **38,** xx Jahrgang, x heft, p. 229, Dec., 1901.—**Scudder, S. H.** Adephagous and Clavicorn Coleoptera from the Tertiary Deposits at Florissant, Colorado, with descriptions of a few other forms and a systematic list of the non-Rhynchophorous Tertiary Coleoptera of North America. Monographs of the United States Geological Survey, lx.

HYMENOPTERA.—**Ashmead, W. H.** A new *Bruchophagus* from Mexico, **5,** Vol. ix, No. 311, p. 324, March, '02. Hymenoptera Parasitica (Hawaiian Islands), Fauna Hawaiiensis, 1, part iii, 1901.—**Cameron, P.** Descriptions of new genera and species of Hymenoptera from the Oriental Zoological region (Ichneumonidæ, Fossores and Anthophila), **11,** ix (7), Feb., '02. Description of a new genus and five new species of Aculeate Hymenoptera from the Sante Fe Mountains, New Mexico, ***2,** xxvii, No. 4, p. 311, Sept., 1901 —**Cockerell, T. D. A.** North American Bees of the genus *Andrena*, ***11,** Feb., '02.—**Cockerell, T. D. A.,** and **McNary, J.** The mouth parts of *Bombus*, **4,** xxxiv, p. 71, March, '02.—**Cresson, E. T.** Descriptions of some Brazilian *Mutilla*, **2,** Vol. xxviii, p. 1, March 8, '02.—**Dalla Torre, C. G.** Catalogus Hymenopterorum, part 1, vol. iii, Trigonalidæ, Megalyridæ, Stephanidæ, Ichneumonidæ (part). Catalogus Hymenopterorum Lipsiæ, 1901.—**Ducke, A.** Eine neue süd amerikanische *Cleptes* Art. **156,** 2, p. 91, March 1, '02. Neue süd amerikanische Chrysididen, **156,** 2, p. 97. Ein neues subgenus von *Halictus* Latr., **156,** 2, p. 102.—**Konow, F. W.** Ein neuer *Haplostegus* Knw., **156,** 2, p. 103, March, 02. Systematische zusammenstellungder bisher bekannt gewordenen *Chalastogastra* (cont.)

156, 2, p. 113.—**Robertson, C.** Some new Aculeate Hymenoptera from Illinois and Florida, ***2,** No. 3, p. 195, May, 1901.—**Sladen, F. W. L.** Can bees hear? The new scent organ. The British Bee Journal, vol. xxx, p. 61, London, Feb., 02.—**Szepligeti, Gy.** Tropische Cenocoelioniden und Braconiden aus der sammlung des Ungarischen National Museums, **49,** xxiv Kötet, p. 353, Oct., 1901.—**Viereck, H. L.** Some new parasitic Hymenoptera, **4,** xxxiv, p. 67, March, '02.—**Wheeler, W. M.** A new Agricultural Ant from Texas, with remarks on the known North American species. American Naturalist, Cambridge, xxxvi, February, 1902.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

EDITOR ENTOMOLOGICAL NEWS:

Dear Sir.—The prostitution of the office of State Entomologist has become notorious. Professionalism, or attempts at it, in other lines, a small library, a few "bugs," a college education, any of these, or not even as much as one of these, may be the excuse offered by some official in appointing a favorite to fill this position. Recently the governor of one of our commonwealths has been called upon to appoint a State entomologist. One is surprised to find that the appointee's name is not found in the Entomologists' Directory, in the International Zoologists' Directory, or on the membership roll of the A. A. A. S. He is not a subscriber to any entomological publication, to the best of my knowledge he never published an entomological article in his life, and to my certain knowledge he cannot distinguish the orders of insects. Now he is State entomologist in a State with a population of more than two millions, and the Entomologists' Directory gives the names and addresses of five entomologists in this Commonwealth.

The present incumbent will do wonders when he grapples with *Chionaspis furfurus* and *Carpocapsa promonella.* Indeed, I have been informed by an entomologist in a neighboring State that 1000 budded pecan plants, passed by the appointee mentioned above as free from San Jose scale, were all infested with the scale, and not a plant of the lot was budded stock.

The mass of easily accessible entomological literature at the present time makes the compiling of an annual report an easy matter. This annual report is often the only evidence required to substantiate the entomologist's claim to efficiency. It would seem that officials, vested with appointing power, would do well to consult well-known entomologists as to the scientific attainments of possible appointees for this much abused office of State entomologist. Economic entomologists in adjoining States ought not be compelled to accept the bungling reports of some amateur or worse. The position of State entomologist is too important, scientifically and economically, at once and in its future effects, to be the plaything of politicians and demagogues. Yours truly, E. B. WILLIAMSON.

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.

In a previous communication in this Department I called attention to the work done at the Station für Pflanzenschutz at Hamburg. There is now at hand a series of papers by Dr. Brick the Director, by Dr. Reh the Entomologist in charge, co-operating also with Mr. G. B. King and by Dr. Karl Kraepelin.

Dr. Brick gives a very interesting account of the Station, its methods of inspection, and the new quarters occupied by it. As compared with figures previously given, Canada now leads in the number of scaly apples sent from the Atlantic coast; but nothing like as bad as from the Pacific coast. The percentages given are, for Canadian apples, 4.19 per cent. infested; for the eastern United States, 0.29 per cent. infested; for California, 64 10 per cent. infested; for Oregon, 79.73 per cent. infested. In the total, 31,533 shipments, 1 24 per cent. proved to be infested by the San Jose or pernicious scale.

Japan now comes well to the front as an exporter of scaly plants, and the regulations previously applying only against American nursery stock are now extended to that coming from Japan.

Dr. Kraepelin enumerates 490 species of animals ranging from vertebrates to worms that were found as introductions at the Port of Hamburg, coming from all parts of the world. Thirteen of these are vertebrates, twenty-two are worms and 294 are hexapods or true insects. The Coleoptera are far in the lead; the Hemiptera come next and the Hymenoptera make a good third. The Orthoptera make a fair showing and the other orders follow a long way behind.

After reading over the list of species the only surprising feature is that so few of the introduced species manage to establish themselves. And when we read of the places in which these were found and consider how many must have escaped notice, we wonder indeed that "introduced species" are of so little comparative importance. We have them "from wood," "on Cacti," in the "roots of Orchids," "on decaying Bromelien," "from Cacao bags," "among plants," "with tobacco," "in flour," "on board a steamer," "in a lemon box," "in an oil cake," etc.

In fact, only he who has done inspection work, and who has sifted insects has any fair idea of the multiplicity of ways in which specimens may be transported and how closely they can hide. It gives one an increased appreciation of the geographical barrier to find how few species succeed in passing it.

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Lists of species are sometimes of great value and sometimes do not tell very much. This observation is *apropos* of the list of species taken in Georgia while jarring peach trees to capture plum curculio. The list, by Messrs. W. M. Scott and W. F. Fiske, is a very careful and conscientious one; yet no Coleopterist can look it over without the feeling that a large percentage of the captures are casuals that might have been found in beating almost any kind of tree or shrub. As a contribution to the fauna of the peach the list must be carefully scrutinized, for many of the species if they found food there at all found it on the fungi on dead wood or in decaying conditions, or in the dead wood itself.

It would have added materially to the list had there been some indication as to what was and what was not a peach insect.

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Prof. E. Dwight Sanderson of the Delaware College and Experiment Station has given us a book on "Insects Injurious to Staple Crops," published by John Wiley and Sons, New York. The "staple crops" are grains and grasses, Indian corn, clover, cotton, tobacco, potato, sugar beet, and hop. Under each heading the principal injurious species are grouped, somewhat on the plan of Saunders' Fruit Insects, and in each case, after a brief description, the most practical remedial measures are given. There is a short general discussion of the injury done by insects, some notes are given on the structure, principally of the mouth parts, and a discussion is presented concerning beneficial insects and the effect of farm practice on the injurious species.

No originality is claimed for the contents of the book and it is, in reality, merely a compilation of well known facts and methods in convenient form. The discussion of insecticides is all too brief from the farmer's standpoint and, if it was deemed desirable to give any instruction concerning mouth structures, surely better pictures could have been obtained than the obscure half tones on pp. 12, 13 and 14. So, for all the practical information it conveys, figure 10, on p. 18, might just as well have been omitted.

But the book is a handy one and it fills a place heretofore not occupied.

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A new book on Invertebrate Zoology comes from Henry S. Pratt, Ph. D., of Haverford, in which the insects receive an unusual amount of recognition. Quite unlike many other "Courses," Dr. Pratt begins with the highest type,—a wasp or other Hymenopterous insect,—but confines it to external characters until he reaches the grasshopper, when the internal structure is taken up and the mouth parts are described.

There is nothing especially new in either the method or the facts brought out; but it is encouraging to find in a general "Course" of invertebrate zoology a fair share of time devoted to a study of the leading insect orders. The book is published by Ginn & Co., and is unusually well made and printed.

* * * * * * * * * *

One of the worries of the economic entomologist comes in the selection of the names by which the insects are to be known in his bulletins and to his constituents. Sometimes the matter is easy ; as when some striking color or other habital character exists, or when the scientific name lends itself to ready translation. But sometimes these things fail and practically it remains to make the scientific name the popular one, in whole or in part, *e.g.*, the cranberry *Teras*, the apple *Bucculatrix*, the *Petilia misella*, etc. I have found in my experfence that it is not much more difficult to get a farmer to use a reasonably short scientific name than a clumsy "popular" one. But when once a scientific name has come into popular use, that name should be continued as such, even if the scientific name is changed, in whole or in part.

A dozen years ago or more, when I first began work in New Jersey, I studied the pests of a special crop and, for three years in succession, reported progress to an Association of the growers of that crop. It was my misfortune to find in one of the leading pests one whose generic position fluctuated abominably. I tried conscientiously to keep up with the changes and every time I talked to my constituents referred to it by a new generic name. Finally, one of the growers remarked, rather sarcastically, that there seemed to be very little certainty in entomolgy when even the names of the insects changed every year ! I took the suggestion to heart, and now-a-days when I have once used a name in a "popular" way, that "popular" use of the term continues, no matter what change the systematist makes, and no matter how well the change may be based from his standpoint.

Doings of Societies.

A regular meeting of the Chicago Entomological Society was held in the John Crerar Library, Thursday evening, February 20, 1902, at 8 o'clock. Eight members present. President W. E. Longley in the chair. Visitors Mr. C. Schwartz and Miss Spitler, of Wellesley, Mass.

Mr. Wm. J. Gerhard was elected a member of the Society by unanimous vote.

The topic, Mimetic Forms and Protective Coloring, was then discussed. Mr. C. C. Adams read an interesting paper. Among other things he showed how the coloring matter in the intestines of some insects helped to give them the color of the food plant, and also that the color alone was often not so important a factor in mimetic protection as the shape. Some specimens of flies were then shown that mimicked certain bees and wasps. Mr. A. Kwiat also exhibited some Lepidoptera.

President Longley read the opinions of authors as to the cause of mimicry. Messrs. Comstock exhibited specimens of *Limentis floridensis* and pointed out the fact that this insect took the color of *Anosia berenice* which seems to be the commonest *Anosia* in Florida during the summer. Some protected exotic butterflies, such as *Hebomoia glaucippe*, *Hypolimnas misippus*, *Anosia chrysippus*, etc., were also shown. Mr. Schwartz exhibited some interesting Lepidoptera mounted on plaster of paris casts. He showed a specimen of *Phyllium scythe* from Ceylon that resembled a clump of guava leaves. These specimens were from the exhibit of Denton Bros. The meeting adjourned at 9.35 P. M., after which the members viewed the different exhibits.

JOHN COMSTOCK, *Secretary*.

The twenty-third regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of January 14, 1902. President Newcomb in the Chair. Dr. L. O. Howard spoke informally on opportunities for useful work in Entomology. Mr. Kirkland told of the damage done to willows and poplars in the vicinity of Boston by *Saperda concolor*, and showed a photograph illustrating the work of this insect in *Populus tremuloides*, with punctures made by downy woodpeckers in their search for the borers. The work of this insect differs from that of *Cimbex* in that the slit made in the bark by the ovipositing ♀ is not straight, but horse-shoe shaped. In the discussion which followed, Dr. Howard called attention to the symbiotic relation between this *Cimbex* and the willow-shoot horn tail, *Phylloccus integer*. The latter, preferring dying stalks to healthy ones, oviposits by preference in shoots already injured by the attack of *Cimbex*. The genus *Thecla* was discussed by various members, who exhibited specimens.

Officers were elected for the ensuing year as follows: President, P. G. Bolster; 1st Vice President, W. F. Low; 2d Vice President, W. D. Denton; Secretary and Treasurer, W. L. W. Field.

Unanimous votes of thanks were passed to Dr. Howard, for his suggestive remarks, and to the retiring President, for his ceaseless efforts to promote the Club's welfare. The meeting was then adjourned.

W. L. W. FIELD, *Secretary.*

Preliminary steps to organize The Entomological Society of Western Pennsylvania were taken on the evening of Saturday, March 8th, 1902. A general invitation to all persons interested in entomology in any of its branches had been extended by the Director of the Carnegie Museum to the public to meet in the Botanical laboratory of the Museum on that date at 8 P. M. In response to the invitation twenty-three persons were present at the meeting in person or by letter signifying their desire to participate in the formation of such a society. A preliminary organization was effected with Dr. D. A. Atkinson, of Pittsburgh, in the Chair, and Mr. F. A. Merrick, of New Brighton, Pa., as Secretary. A general discussion took place, the result being the final adoption for the association of the name above given. W. J. Holland, LL.D., the Director of the Carnegie Museum, was chosen as the first President of the Society, Mr. F. A. Merrick was elected as Secretary, and Dr. D. A. Atkinson as Treasurer. It was resolved to hold monthly meetings on the evening of the first Saturday of each month. A committee, consisting of Mr. Herbert H. Smith, Dr. D. A. Atkinson and Mr. Henry Engel, was appointed to prepare a preliminary draft of a constitution and by-laws.

The persons who have thus signified their intention to become members of the Society are the following:

Dr. D. A. Atkinson, Pittsburgh; Hon. Frank Cowan, Greensburg, Pa.; George D. Ehrman, Pittsburgh; Henry Engel, Pittsburg; Ellis M. Frost, Pittsburgh; Robert H. Foerster, Pittsburgh; W. J. Holland, Pittsburgh; F. Knechtel, Swissvale, Pa.; Henry G. Klages, Jeannette, Pa.; George T. Krautwurm, Pittsburg; B. J. Krautwurm, Pittsburgh; H. Lippold, Allegheny, Pa.; C. Maier, Allegheny, Pa.; Frederick Marloff, Oak Station P. O., Allegheny Co., Pa.; F. A. Merrick, New

Brighton, Pa.; B. A. Overbeck, Allegheny, Pa.; Geo. N. Pohl, Newcastle, Pa.; J. Reitlechner, Allegheny, Pa.; Rev. Jerome Schmitt, Beatty, Pa.; Herbert H. Smith, Pittsburgh; Mrs. Herbert H. Smith, Pittsburgh; Frederick Somers, Allegheny, Pa.; E. J. Voegtly, Pittsburgh; V. J. Zarobsky, Wilmerding, Pa.

After the transaction of business the President of the Society placed on exhibition for the members who were present the collection of Cicindelidæ contained in the Ulke collection, some thirty species of the Genus *Morpho*, including a remarkably fine pair of *Morpho hecuba*, and a large series of specimens representing various species of the Genus *Troides*, (Ornithoptera *auct.*) and its allies, among them *Schoenbergia paradisea* and *tithonus*.

The next meeting will be held on the evening of April 5, at which a large attendance of the knights of the nets and cyanide bottle is expected.

At the February meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1523 S. 13th Street, eleven persons were present.

The President read his deferred annual address for 1901.

Prof. Smith referred to the fact that it was not known where the various stages of *Culex sollicitans* pass the winter. Referring to *Leucania unipunctata*, the lack of variation and non-tendency to form new types were dwelt on. On the contrary, the wheat head army worm, *L. albilinea*, also widely distributed from Canada to Mexico, had been confused with a supposed variety which is really a distinct species. Among other supposed varietal forms he had discovered no less than four distinct species having good structural characters in the genitalia. The divergence from the type of these varieties was dwelt on, and the speaker did not believe the different varieties would interbreed if the two sexes of the same form existed. These forms are local, and in time would no doubt become distinct species.

The peculiarities of local forms of *Cicindela* and *Cychrus* were dwelt on by Messrs. H. Wenzel and Harbeck.

Mr. Wenzel referred to the confusion in the synonymy of

certain species of *Cicindela*. He did not believe *C. consentanea*, *patruela* and *sexguttata* to be identical as some workers seem to think. In the West, species are attracted by lights at night, whereas in the East the same species do not seem to have this habit.

Prof. Smith spoke of the entomological work of Mr. John Akhurst, of Brooklyn, N. Y., whose death has been announced.

Prof. Smith reported that the Newark Entomological Society had appointed a committee to arrange for an inter-city field meeting on July 4th., and had delegated him to ask the co-operation of this society.

On motion, the following Committee was appointed to confer with the Newark Society on this matter. Messrs. H. Wenzel and Fox; Johnson, *ex-officio*.

WILLIAM J. FOX, *Secretary*.

A meeting of the American Entomological Society was held February 27, thirteen persons present. The President, Mr. P. P. Calvert, occupied the Chair. The thanks of the Society were extended to Mr. S. N. Dunning for his gift of a valuable collection of Hymenoptera and to Prof. John B. Smith for the presentation of species of *Leucania* new to the collection. Mr. Rehn stated that Mr. Viereck and himself expected to spend ten weeks in collecting insects in Texas, Mexico and New Mexico. Mr. Rehn also exhibited a collection of Orthoptera from San Diego, California. It contained five genera new to the collection and some new species. Dr. Calvert spoke on the importance of applying statistical methods to large series of individuals in order to determine, by percentages, what are the more variable, and what are the less variable differences between animals. He contended that this is the only true method for determining what characters are of generic and specific value, and that every student who has large series at his disposal should gather such statistics as the basis of work in classification (taxonomy). He illustrated his remarks by statistics which he is gathering during the progress of his work on the Odonata for the Biologia Centrali-Americana.

H. SKINNER, *Secretary*.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. MAY, 1902. NO. 5.

CONTENTS:

Our plate represents a species from Bolivia, described by Mr. Weeks in the Canadian Entomologist, Vol. 23, p. 265, 1901.

Notes on a Eriocranid Larva.

BY W. D. KEARFOOT.

Our entomological literature is altogether barren of facts in regard to the larval habits or life history of any one of our American species of Micropterygidæ, in fact the perfect insect is a *rara-avis* and to be found in but few collections and in small numbers.

For this reason I wish to record the following preliminary account of the larva of at least one species. The only excuse for the publication of such incomplete data is the desire to inform fellow-workers of the discovery, so that they may make an effort to secure the larvæ and work out the life history during the coming spring and summer.

During early June or late May last year I found in several places about Montclair, N. J., the leaves of common chestnut

Castanea Americana, with very large blotch mines, the mines often extended entirely across the end of a leaf, or on one side of the mid-rib for nearly half the length of the leaf. By holding the leaf up to the light a broad, flattened apodous-like larva could be seen eating industriously, and when disturbed wriggling quite vigorously. When feeding the larva sweeps circles of 10 mm. or more radius, the anal end acting as a pivot, and the outline of the mine is a series of these semi-circles. The frass is deposited in fine curved lines.

Leaf-mining lepidopterous larvæ are unusual so early in the spring. For this reason, and also that I felt reasonably sure that I had a leaf-mining Coleopter, I paid rather scant attention to these larvæ other than to place the leaves in a jelly glass with a little moss and earth at the bottom and a gauze cover over the top. I noticed that within a day or two all the larvæ came out of the mines and had burrowed beneath the earth. They were bare and not enclosed in a case made out of a small part of the leaf.

The matter was allowed to rest here for several months. In October, when field work required less attention, I had time to learn something of the contents of several new accessions to my library, which included Stainton's "Natural History of the Tineina" and the first two volumes of J. W. Tutts' elaborate work entitled "British Lepidoptera." On Plate 3, Vol. XIII, of Stainton's work are beautifully drawn figures of three European species, showing moth, larva and mine, and as soon as I saw them I felt sure the identification of my chestnut miner was at hand. I got down my jelly glass and found a dozen or more small oval cocoons of rather tough texture and covered with particles of earth; upon opening some of these cocoons I found some of the larvæ had dried up and others had pupated and then dried up. Only one or two were alive; these I carefully put away, hoping to get the moth later, but at this writing all are dead, so it will be impossible to prove the species this year.

During the past few months I have been making a critical study of the pupæ of a number of Tortricidæ bred last year and sought the aid of Dr. Packard's first part of his "Monograph

of the Bombycine Moths." On page 62 of this work is shown the pupa of European *Micropteryx purpurella*. It also looked familiar, and I placed under the microscope the pupa of one of my chestnut miners and the mystery was solved.

If Dr. Packard's drawing had been made from my pupa it could hardly have shown a more striking likeness. All the limbs and organs are free, and across the front, just below the eyes, are the enormous cutting mandibles, the labrum is cleft on the lower edge and bears eight setæ ; on the epicranium are also four long setæ ; all of these setæ are fully as long as half the width of the pupa. On the square clypeus are the curious filamentarious tentacles referred to by Packard.

I succeeded in softening up one of the dried larva and inflated it and give the following brief description: 5 to 6 mm. long, flattened; segments 5 to 7, broadest, tapering to a narrow point at anal extremity ; head small, brown, somewhat like that of a *Nepticula* ; no pro-thoracic shield, but a small brown anal shield ; apodous.

I am at work on a detailed description of the pupa and larva and will make enlarged drawings of all details, but will defer publication until I can get fresh specimens to compare.

In Tutts' work, referred to above, Vol. I, p. 129 *et seq.*, is a most elaborate account of the European members of this group, citing the papers of Chapman and Waller, who have been the foremost investigators in this family. Mr. Tutt divides the group into two distinct and separate super-families : Micropterygidæ and the Eriocranidæ. The former includes the species whose larvæ feed on wet moss, and the latter those species whose larvæ are leaf miners. Lord Walsingham has erected a new genus for two of the American species, *i. e.*, *Epimartyria* (*E. pardella* Wlsm., and *E. auricrinella* Wlsm.) and which genus in some respects Tutt considers more archaic than *Micropteryx*.

It is quite probable that my species is *Eriocrania grisco-capitella* Wlsm., as for several years I have taken a specimen of this late in April or very early in May, or it may be another species which is yet unidentified, of which I took one specimen in midsummer two years ago.

Now that we have the clue I hope our American species will be rapidly overhauled and their life histories fully known. I will add that about the same time I found the chestnut miners I found similar mines and larvæ on oak; these may be the same species; I did not take care of them and made no notes, thinking it impossible they could be anything else than Coleopterous.

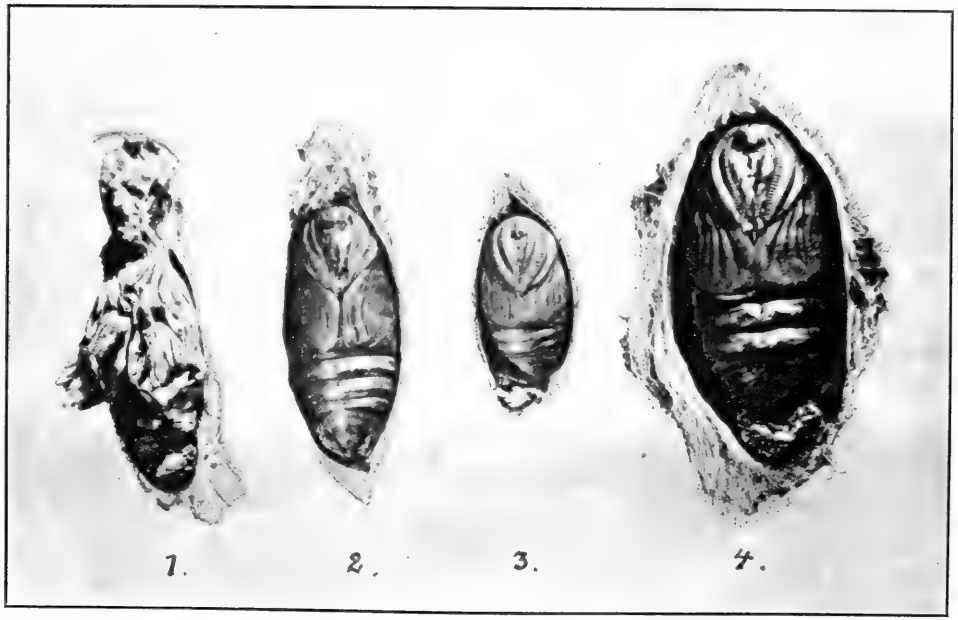
A word about the perfect insects of these group may be of interest. My first specimen was taken just about at dusk April 21. It doubtless was resting on or near the ground. I caught it as it was flying upwards in an almost vertical line, flight quite slow and seemingly laborious. The second specimen (and I think a different species) was taken about 8.30 p. m. about the middle of July on the wire mosquito screen enclosing my piazza, attracted by a lamp which was within. The third specimen was taken May 4, about 11 a. m. It is the same species as the first and was disturbed from the ground or low down on a tree trunk. As a violent wind was blowing it was impossible to observe its natural flight and it was captured with difficulty. I saw a fourth specimen resting on the bole of a small beech tree about five feet from the ground; the morning sun, about 11 a. m., was shining on it, and it sparkled like an emerald from the light reflected from the exquisite metallic green of its wings. I attempted to place a small cyanide bottle over it, but before my hand was within a foot of it, it jumped like a leaf hopper and was out of sight in an instant. Numbers one and three were captured (and number four seen) in a rather open woods, principally hard and soft woods and a great abundance of shrubbery, on the Watchung Mountains, back of Montclair, at an elevation of five or six hundred feet above sea level.

Cocoons of Samia Cynthia.

By HERMAN HORNIG.

(See Plate VI.)

Raising Lepidoptera from the egg to its final form as a "thing of beauty" is a pleasant experience, when the caterpillars are about by the hundred, but not so interesting when the leaves for food have to be carried from the suburbs of the



EMERGENCE OF MOTHS (HORNIG).

city to a small walled-up yard. The benefits which we derive from such labors are a knowledge of the mode of living of the larva in its different stages and the probability of getting perfect specimens without failures, due to parasites, as might be the case when we collect cocoons at random. We see the last cocoon-spinning caterpillar disappear into its silken shrine; we put on a date label of its last performance and fasten the cocoon on the board in such a manner that the fly will not need to pull the whole after him when he tries to emerge. In handling a number of cocoons during the winter we usually find some very light in weight: on opening the cocoon we perceive a shrivelled larva; the cause is poor nourishment. Where there are many caterpillars to be fed, there are always some which will get plenty to eat and some which will get little. Some larvæ, by falling from the top of the breeding cage to the bottom or being disturbed or wet during process of changing into another stage, will be injured and become sick and their appetite will be diminished. Those are the ones that die spinning the cocoon. But among so many there will be a few which will try to emerge and never rise above the thorax and die a miserable death. Our friends will say: "Why, you kept them too dry." If we think a moment we will see that this is not the case, because others kept in the same condition made their appearance perfect. They were not too dry, as Nature provided the chrysalis with moisture enough to enable the insect to change into the adult form and moisture enough is left to help soften the silk in the opening of the cocoon. If the cocoon had been kept too dry the moth never would have been able to come to the surface. The former cases occur mostly with *S. cynthia*, only one case was observed of *cecropia*. A large percentage of cocoons opened showed that *cynthia* larvæ make the loose ends of the silk very long and plentiful. Coming from a hotter climate it may be instinct or reason to shut out the heat of the first few spells of warm weather in spring as much as possible. As a rule our *cecropia* and *promethea* fly earlier than *cynthia*. A distinguishing mark between the *cynthia* and *promethea* cocoon is the flatness at emerging point of the latter, less silk and shorter ends. If the moth, in pushing its way through, is

rather slow about it the under portion of the body, full of of young life, while growing rapidly, will be so large in a short time that it is impossible to get through the opening and the moth falls a victim. Illustration No. 1 shows this plainly. The cocoons in the illustration are stripped of the outer covering so as to show the amount of silk at opening end in a plain manner. No. 2, *S. cynthia*, before emerging; No. 3 *promethea* and No. 4 *cecropia*.

A New Coccid from California.

By S. I. Kuwana, Stanford University, Cal.

Pseudolecanium disticlium n. sp.

Adult female:—Length varying from 3 to 4 mm., width 1 to 1.1 mm.; ellipsoidal in form, usually flat; pinkish brown in color, shiny, the posterior segment darker color; thinly coated with white cottony wax.

Boiled in K O H, the female becomes transparent, with the exception of the mouth parts, antennæ and the posterior segment, which are golden brown; mouth parts well chitinized, rostral loop long; antennæ short, conical, consisting of two segments, subequal in the length, .41 mm. long, the terminal segment bearing six or more hairs; the two pairs of spiracles are large and prominent; a large number of glands varying in size, all over the body, which are more numerous around the spiracles; the posterior segment strongly chitinized; the posterior margin of the body with no cleft, and bearing four spines; anal ring large, without hairs.

First Larval Stage:—Length .5 mm., width .2 mm.; pale pink in color; elongate ellipsoidal in form; segments very distinct; sides nearly parallel, with no capitate spines on the margin of the body; eyes red; mouth parts very large; antennæ close to each other, each consisting of six segments, and about .12 mm. long, segment 6 longer than 4 and 5 together, segment 4 shortest, formula, 6, 1, 2, 3 (4, 5); the three pairs of legs are subequal, coxa as wide as long, trochanter large, bearing a single long hair, femur large, convex on the outer margin, tibia and tarsus about equal in length, each bearing a

few spines, digitules on tarsus long, thread-like, knobbed, digitules on claw short and stout, knobbed; posterior margin of the body with two long hairs and two spines at the base of each hair; anal ring with four spiny-hairs.

Habitat. Found by the writer on *Distichlis maritima* in salt marsh near Palo Alto, California, Dec. 20, 1901. The female lives under the sheathing base of the host plant.

Type in the Entomological Collection of Leland Stanford, Jr. University.

Three species of the genus *Pseudolecanium* have been heretofore known, and they are recorded from the following localities:

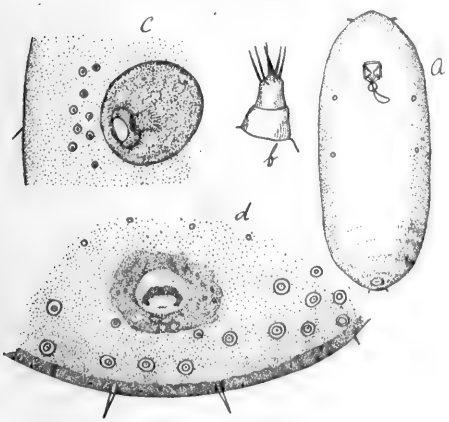


FIG. 1.—*Pseudolecanium disticlium.*
a. Ventral aspect of female.
b. Antennæ of the same.
c. A spiracle of the same.
d. Ventral aspect of the last segment of the same.

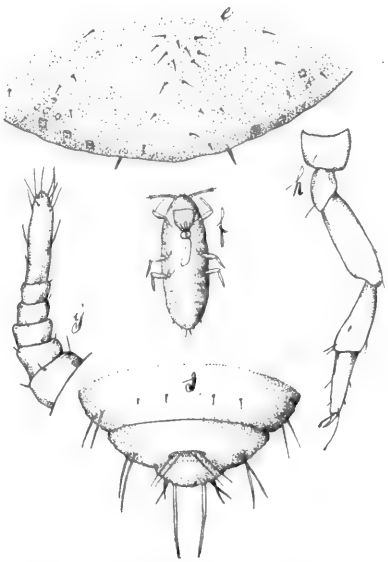


FIG. 2.—*Pseudolecanium disticlium.*
e. Dorsal aspect of the last segment of female.
f. Ventral aspect of the first larval stage
g. Antenna of the same.
h. Leg of the same.
i. Posterior abdominal segments of the same.

1. **Pseudolecanium tokionis** Ckll.

Tokyo, Gifu in Japan; and Stanford University campus, California.

2. **Pseudolecanium californicum** Ehr.

Mountain View, California; Manhattan and St. George, Kansas.

3. **Pseudolecanium obscurum** Parratt.

Lost Springs, Parsons, Fredonia and Green Mound, all in Kansas.

The following measurements and formulæ of larval antennæ will assist in the recognition of the known species of the genus :

MEASUREMENTS OF LARVAL ANTENNÆ.

SEGMENTS OF ANTENNÆ.	1	2	3	4	5	6
Pseudolecanium tokionis. . . .	28	14	33	22	30	32
Pseudolecanium californicum .	16	10	22	17	17	28
Pseudolecanium obscurum. . .	14	7	20	15	14	21
Pseudolecanium disticlium. . .	17	16	14	10	10	22

FORMULÆ OF LARVAL ANTENNÆ.

Pseudolecanium tokionis, 3, 6, 5, 1, 4, 2.
" *Californicum*, 6, 3, (4,5) 1, 2.
" *obscurum*, 6, 3, 4, (1,5) 2.
" *disticlium*, 6, 1, 2, 3, (4,5).

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Pseudolecanium tokionis Ckll.

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1896. Cockerell—Psyche Supp., p. 19.

1896. Cockerell—A Check-list of the Coccidæ, Bul. Ill. State Lab. Nat. Hist., Vol. IV, p. 329.

1900. Cockerell—Psyche, Vol. IX, No. 290, p. 71.

1900. Kuwana—Cont. Biology, Hopkins Seaside Lab., Stanford Univ., XXV, p. 403-4.

Pseudolecanium (Niderlaria) **californicum** Ehr.

1899. Ehr.—Can. Ent., Vol. XXXI, No. 5, p. 103.

1900. Parratt—Kans. Agr. Exp. Station, Bul. No. 98, p. 145.

Pseudolecanium obscurum Parratt.

1900. Parratt—Kans. Agr. Exp. Station, Bul. No. 98, p. 144.

Lithurgopsis, a New Genus of Bees.

By WILLIAM J. FOX.

A recent letter from Mr. T. D. A. Cockerell suggested that *Lithurgus oblongus* Fox, described from Lower California, was possibly not a Lithurgus, but a species of Megachile. I find on examining the type that, while having a strong superficial resemblance to species of Lithurgus, *i.e.*, in the laminate, or projecting face, *oblongus* is really a Megachile, the first hind tarsal joint being flattened as in the latter genus and not cylindrical as in Lithurgus, and its labial palpi are 4-jointed. As the name *oblonga* is preoccupied in Megachile it is necessary to propose a new name for *Megachile* (=*Lithurgus*) *oblonga* Fox, and I herewith suggest the term *longula*.

Historically, the genus *Lithurgus* is not without interest. Latreille, 1825,[1] indicates *Centris cornuta* Fab. (=*Megachile cornuta*) as the type of a genus, to which he gives a French name, Lithurge. In the same year Lepeletier de St. Fargeau[2] refers to Latreille's genus Lithurge without Latinizing it. Berthold, 1827,[3] edited a German translation of Latreille's *Familles, etc.*, on page 467 of which the Latin term Lithurgus is used for the first time. As vernacular names have no standing in nomenclature, obviously the genus should date from the first use of a Latin term of it. Therefore, the name of the "stone-bees" should henceforth stand as Lithurgus Berthold, 1827, and not Latreille, to whom the generic term has heretofore been credited.

The references to Lithurge Latreille which I have found are in almost every instance either incorrect or incomplete. Boyer de Fonscolombe, 1834,[4] refers to the right work, but curiously enough says "tom. 2, p. 350," there being but one volume, and the term occurring on page 463. Later writers as Lepeletier de Saint Fargeau, F. Smith, and Freise in 1899, refer to

[1] *Familles naturelles du règne animal*, Paris, 1825, p. 463.

[2] *Encyclopedie methodique, Insect., X, p. 795, 1825.* The title page to this volume is dated 1792, but the work having been issued in parts, page 795 did not appear until 1825.

[3] *Natürliche Familien des Thierreichs mit Anmerkungen und Zusätzen von Dr. Arn. Ad. Berthold, Weimar*, 1827.

[4] *Annales de la Société Entomol. de France, T., III*, 1834.

Genera Crust. et Insect., II, p. 350, 1809. In this work, volume 2 does not at all relate to Hymenoptera and is dated 1807. Dalla Torre, 1896, while giving the proper reference, queries the page, as though the work had not been consulted by him.

Now comes another question of importance. Freise, 1899,[5] says under Lithurgus, "An den einfachen Beinen fehlt das Pulvillum," presumably referring to both sexes. Mr. Wm. H. Ashmead writes me that no pulvillus exists in either sex of two genuine species of European Lithurgus, although he does not indicate which species; and Mr. T. D. A. Cockerell informs me that he has examined a male specimen of *Lithurgus atratus* from India, and failed to find a pulvillus.

It is well known that two of our species, [*Lithurgus*] *gibbosus* and *apicalis* have in the male a distinct pulvillus; so from the evidence at hand it is clear that these species cannot be included under Lithurgus Berth. According to Ashmead's classification of the bees they would not come under the same subfamily as Lithurgus, or the two sexes would fall into different subfamilies, which, it seems to me, is evidence of the instability of classificatorial schemes whose main virtue seems to be convenience, or an artificial rather than a natural arrangement.

The new genus may be characterized as follows:

LITHURGOPSIS gen. nov.

General appearance of Lithurgus and Megachile. Maxillary palpi 3-jointed, the joints of almost equal length, the first subtriangular, or in other words, much widened apically. Labial palpi 3-jointed, the first joint broad, about $\frac{1}{7}$ the length of the the second, which at base is of equal width to the first, but tapers to a slender apex, the terminal joint minute and clavate. In the male sex is a distinct pulvillus, which is absent in the female. Tarsal claws in male cleft; in the female squarely toothed within basally.

Type [*Lithurgus*] *apicalis* Cresson. This is selected as the type because I have dissected the mouth parts, which a limited series of *gibbosus*, the older species, did not permit me to do.

Our species of Lithurgopsis may be tabulated as follows:

[5] *Die Bienen Europes, Theil V, p. 6.*

FEMALES.

Facial prominence entire; pubescence of sixth dorsal abdominal segment black . . . . . **gibbosus.**

Facial prominence not entire, consisting of two widely divergent teeth or prongs.

Pubescence of sixth dorsal segment fulvous brown, varying to purplish black; ventral scopa yellowish . . . . . **apicalis.**

Pubescence of sixth dorsal segment black; ventral scopa whitish . . . . . **echinocacti.**

MALES.

Face and clypeus closely punctured; sixth abdominal segment with black pubescence (except the apical white margin) . . . . **gibbosus.**

Face and clypeus sparsely punctured; sixth abdominal segment with yellowish white pubescence . . . . . **apicalis.**

From the material at hand I am not able to satisfy myself that the several forms or varieties mentioned are really such or distinct species. A large series from various localities is needed to settle this matter.

1. **Lithurgopsis apicalis** (Cresson).

Lithurgus apicalis Cresson, Rep't Expl. and Surveys W. of 100th Merid. (Wheeler), Vol. V, p. 724, 1875. ♀.

Lithurgus apicalis Cockerell, Amer. Naturalist, Vol. XXXIV, p. 488, 1900. ♀ ♂.

Lithurgus gibbosus Cockerell (non Smith), ibid, p. 487, ♀ (♂?).

Colorado; New Mexico; Arizona. The Arizona examples have the pubescence of sixth dorsal segment blackish, but a tendency to blackness is also shown in some Colorado examples.

Mr. Cockerell's *gibbosus* is not the same as Smith's, and is what I consider a form of *apicalis*. This form with dark pubescence on sixth dorsal abdominal segment varies within itself; otherwise I would be inclined to regard it as distinct. Whether the male of this form, called *compressus* Smith, by Cockerell, is really *compressus* or not I cannot say, not having seen specimens.

A series of three males, from Colorado, are more hirsute, the pubescence pertaining more to yellowish than to grayish, as in the typical form, and the fulvous-brown pubescence of sixth segment is replaced by light yellow or grayish yellow.

2. **Lithurgopsis echinocacti** (Cockerell).

Lithurgus echinocacti Cockerell, Ann. Mag. Nat. Hist., p. 453, December, 1898, ♀.

New Mexico. Mr. Cockerell has sent me a single specimen of this species. The specimen is slenderer than most *apicalis*, the ventral scopa is white and the wings clear, not margined apically with fuscous, though in other respects approaching the form of *apicalis* with darkly haired sixth segment. Mr. Cockerell describes this pubescence as "purplish-ferruginous," but in the specimen he sends me it is quite black, perhaps somewhat purplish, which may indicate that here also, as in *apicalis*, there may be considerable variation.

3. **Lithurgopsis gibbosus** (Smith).

Lithurgus gibbosus Smith, Catal. of Hymen. Insects in British Museum, Part 1, p. 147, 1853. ♀.
Lithurgus compressus Smith, ibid. ♂.

Georgia; Florida; Texas. Mr. Cockerell's record of *gibbosus* in New Mexico is erroneous, as I have shown elsewhere.

The author desires to express his thanks to Messrs. Henshaw, Ashmead and Cockerell for favors received in connection with the present paper.

Notes on Coleoptera No. 2.

By GEORGE A. EHRMAN, Pittsburg, Pa.

Cychrus andrewsii Harr.

Some time ago I captured a large female of this handsome as well as rare species in Brown's woods, which is very peculiar. The striæ of the elytra are replaced by an interrupted, uneven and semi-tuberculate surface, very similar to *Carabus intricatus* of Europe, otherwise it is the same as the regular Pennsylvania form of this species.

Pterostichus vinctus Lec.

On Sept. 24th, 1900, I captured a very interesting example of this species at Baldwin Station; the specimen is a female in the genitalia, but the right tarsal joints are male on the fore foot, while the left fore foot tarsal joints are female in character.

Platynus extensicollis Say.

Of this, though not rare, yet a very pretty carabid, I took quite a number in damp localities in dried-up creeks, but by chance I came onto a little sunny embankment, or "wash-out,"

as the farmers of Washington County call them, and by digging down the loose soil and small stones I took this species by the dozen. This was on Oct. 13th, 1900. No doubt they were preparing their habitation and winter quarters.

Odontœus filicornis Say.

On Oct. 30, 1900, in looking for *Platynus extensicollis* again, I discovered a fine perfect female of this rare beetle. Hitherto my captures of this rarity were at the electric lights; thus by finding this female in such a position I believe that they have the same habits in the larva state as the *Lachnosterna*, viz.: feeding on the roots of grass and other vegetation.

Nyctobates pennsylvanicus De G.

On Oct. 13th, I found a specimen of this our common tenebrionid and which is oftentimes confounded with the rarer *Merinus lævus*. It has a deformed middle leg on the left side. The leg from the tibial joint is twisted and bent outwardly like a crook or hooked walking stick, and by close examination of this limb I find that this specimen was born without a foot (tarsi and tarsal claws) on this deformed member.

A New Moth from Alaska.

By Henry Skinner.

Psychophora fasciata n. sp.

Male.—Antennæ bipectinate. Head, thorax, abdomen and legs clothed with brown hair. Primaries light brownish gray and semi-translucent, with a brown band or fascia, 4 mm. wide, extending from the costa to the interior margin. At the middle of the outer side the band is convex, almost making a point. On the inner side it is correspondingly concave. The secondaries are white, translucent and rounded, without spot or marking. The neuration of the secondaries is brown and shows distinctly.

The undersides of primaries and secondaries are immaculate and of a sordid white; under a lens they appear to be covered with an admixture of whitish and brownish scales.

Female.—Antennæ, to the unaided eye, appear simple, but under a lens they are shown to be made up of numerous min-

ute joints partly covered by hair. Moniliform would express their character if it were not for the fact that they are not round. Primaries narrow as compared with those of the male and more produced at the apex. In color they are light brownish gray. The darker fascia crosses the wing as in the male, but it is far less distinct or differentiated from the remainder of the wing. The secondaries are small and almost quadrate in shape, the square narrowing as the body is approached. The undersides are immaculate, with the neuration more distinctly shown than above.

♂ Expands 26 mm.

♀ Expands 20 mm.

Described from quite a number of males and one female taken at Point Barrow, Alaska, July 13, 1898.

The genus *Psychophora* was proposed by Kirby (A Supplement to the Appendix of Captain Parry's Voyage for the Discovery of a Northwest Passage in the years 1819–20. London, 1824), who placed the species described, *sabini*, in the genus *Bombyx* Fab., but suggested the genus *Psychophora* for the species. The species *sabini* is again referred to by Curtis (Appendix to the Narrative of a Second Voyage in Search of a Northwest Passage, etc., by Sir John Ross. London, 1835) who redescribes the genus and species. *Sabini* is figured by Curtis on Plate A, fig. 12. Curtis says: "Mr. Kirby's description being incomplete, from his want of perfect specimens, I have endeavored to supply the deficiency by giving the generic characters." Dr. Packard in his Geometrid Moths places *sabini* in the genus *Glaucopteryx*, but this species seems to have little if any relationship to the other species he includes in *Glaucopteryx*. The late Dr. Hulst placed the genus *Psychophora* in the Geometridæ, subfamily Hydriominæ.*

Staudinger and Rebel, in their recent catalogue of the palæarctic fauna, place *sabini* as a variety of *Larentia frigidaria* Gn. This seems very curious, as *sabini* was published in 1824 and *frigidaria* in 1857. Dr. Hulst cites P. *phocata* Möschler as a synonym of *sabini* Curtis. *Phocata* is figured in the Wien Mts., 1862, p. 137, T. 1, f. 8, but this fig. does not seem to show

*Trans. Am. Ent. Soc. XXIII, p. 290.

that the species belongs to *Psychophora*, but is geometrid in character.

Specimens of *Psychophora fasciata* were submitted to Drs. Smith and Dyar and the former thought they were Bombycids and the latter Noctuids. From some recent correspondence with Dr. Smith it would appear that what Dr. Hulst had under *Psychophora* were all true Geometridæ, as Dr. Smith says: "There is no specimen in the Hulst collection that agrees with the insect that you gave me."

The genus *Psychophora* was proposed and described by Kirby, and later more fully described by Curtis, and there is no doubt about the genus or what insects were meant, as they are very characteristic generically, at least.

I am inclined to agree with Dr. Smith that *Psychophora* represents a Bombycid genus and that all the mix-up in the literature has been brought about by considering *Psychophora sabini* a geometrid moth.

See Pagenstecher, Fauna Arctica, Bd. II, p. 323, 1901.

Remarks on Tephronota Ruficeps and Description of a New Species.

By Chas. W. Johnson.

Tephronota ruficeps van der Wulp.

Hernia ruficeps v. d. Wulp, Tijdschr. v. Ent. IX, 156, pl. V, fo. ii.
Tephronota humilis Loew, monogr. etc., III, 121, pl. VIII, f. 24, 1873.

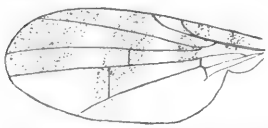
In his monograph Loew did not adopt van der Wulp's name because it was preoccupied by Fabricius. But as Baron Osten Sacken has stated: "This cannot be sustained, as neither of the two genera named *Hernia* or *Tephronota* existed at the time of Fabricius." Nor is there an older *ruficeps* referable to this genus.

The species seems to be confined to the States bordering on the Atlantic from New York to Florida. It has also been collected by Belfrage in Texas. Specimens were taken at Georgetown, Fla., May 9, 16; Tifton, Ga., June 11, (Pilate); Boykins, Va., June 10; Jamesburg, July 4, and Buena Vista,

N. J., July 10. It is usually captured in beating the shrubbery on low sandy ground.

Tephronota canadensis n. sp.

Front and vertex bright yellow, bordered with white pollen or sheen, which in certain lights seems to extend around the entire margin of the eye; face and antennæ yellow, the third joint above slightly brownish; occiput black and covered with a grayish pollen. The entire thorax black and covered with a grayish pollen, showing slight indications of two dorsal stripes; scutellum brownish black; abdomen a shining black; legs blackish, the ends of the femora and tibia slightly yellowish, the amount of yellow on the tibiæ often varying considerably; tarsi yellow, the terminal joints somewhat darker; wings white hyaline, marked with three black bands as shown in figure. Length 3 mm.



Six specimens collected by Mr. G. Chagnon, at Rigaud, Prov. Quebec, Canada, July 28, 1901.

This species is readily distinguished from the preceeding by its blackish legs, and greater extent of the third or outer band on the wing.

In working over the Ortalidæ I find that the genus *Stictocephala* Loew, 1873, is preoccuped in Homoptera (1869), I therefore propose the name *Pseudotephritis*.

Dragonflies (Odonata) from the Magdalen Islands.

E. B. Williamson.

On June 23 and June 30, 1901, Dr. D. A. Atkinson collected 167 dragonflies at Grand Entry, Magdalen Islands, Quebec. Six species are represented in the collection. The cosmopolitan character of the Odonatological fauna of these islands as shown by Dr. Atkinson's collecting justifies the publication of this brief list.

The Magdalen Islands are between 47° and 48° N. Lat. and 61° and 62° W. Long., near the middle of the Gulf of St. Lawrence, about 54 miles from Cape Breton Island and only a few miles farther from Prince Edward Island. They form an

elongated **C** with the open side slightly south of east, the maximum length in a straight line being about 40 miles. Grand Entry, where Dr. Atkinson collected, is at the terminus of the upper curve of the **C**.

(1.) **Enallagma hageni** Walsh.

Grand Entry, June 30, 1901, 41 ♂. This species ranges approximately between 40° and 47° N. Lat. and 60 and 100° W. Long. Specimens from Grand Entry average larger than Indiana and Ohio specimens.

(2.) **Enallagma cyathigerum** Charp.

Grand Entry, June 23, 1901, 5 ♂; June 30, 14 ♂. This species, with its races, is known from Northern Asia, Europe and North America. How definitely the races may be recognized I do not know. *Hageni*, *cyathigerum* and *calverti* are a group of very closely allied species. In North American *annexum*, as identified by authors, occurs with *hageni* and *calverti* in Maine and Massachusetts. *Calverti* appears east of the Great Plains in one other State, Indiana, in which *hageni* has also been taken. *Annexum* and *hageni* are reported for New Hampshire. *Hageni* has not been taken west of the Great Plains. *Calverti* and *annexum* are reported for Washington and Wyoming. *Annexum* is also recorded for California. In North America north of Lat. 45° *annexum* has been reported generally, *calverti* only in the extreme west, while *hageni* is known only from Quebec. It may be that *annexum* and *calverti* have been confused by earlier authors. Twenty-two female *Enallagmas*, not specifically determined, were taken at Grand Entry, June 30.

(3.) **Agrion resolutum** Hagen.

Grand Entry, June 23, 1901, 4 ♂; June 30, 34 ♂, 11 ♀. This species has hitherto been reported from Canada west of Long. 95°. Specimens from Magdalen Islands amply illustrate, as variations, the different points in Hagen's description of the form *servum* from Fort Resolution (Selys Syn. des Agr. Le Grand Genre Agrion, p. 1264 or 154). Of the differences pointed out by Selys between *resolutum* and the European *A. hastulatum*, the coloration of the rear of the head and the shape of the hind lobe of the prothorax seem most

valuable, judging from the material before me. The post-occipital spots in *resolutum* may be dentate, deeply crenate, or entire behind. Only rarely the lateral spot on abdominal segment 2 of the male is separated from the dorsal spot and then only by a mere line of blue in *resolutum;* in *hastulatum* the lateral spot is variable in size, but is well separated from the dorsal spot in any case. In *resolutum* ♂ ♀ the rear of the head is entirely pale yellow; in *hastulatum* ♂ ♀ the region about the foramen is black, and this may extend very nearly to the eyes. I can detect little if any difference in the color of the pterostigma. The abdominal appendages of the males, on the other hand, offer clear differences. In *resolutum* ♂ the lower branch of the superiors is slenderer, as long as the inferiors, and with a distinct knob at the end; in *hastulatum* ♂ the lower branch is shorter, heavier, only slightly enlarged at end, and largely concealed behind the inferior appendages. The inferior appendages of *resolutum* ♂ are much smaller than those of *hastulatum* ♂ not concealing the lower branch of the upper appendages, apex distinctly bifid, the two branches equal in length, in *hastulatum* ♂ not so distinctly bifid, the upper branch the longer. [The hind margin of the prothorax is rounded in both sexes of *resolutum*, angulate in the middle in both sexes of *hastulatum;* a small pale streak on each side of the dorsal black of the prothorax of *resolutum* is absent in *hastulatum*. I take advantage of this opportunity to add a new locality for *resolutum*, viz.: Volga, South Dakota, whence I have a male taken June 26, 1889, and sent me by the late Judge P. C. Truman.—P. P. CALVERT.]

(4.) **Æschna juncea** L.

Grand Entry, June 30, 1901, 2 ♂, 5 ♀, 4 of the females teneral, one reared. This species occurs over northern portions of Europe, Asia and North America.

(5.) **Leucorhinia hudsonica** Selys.

Grand Entry, June 30, 1901, 11 ♂, 4 ♀. Canada; Massachusetts.

(6.) **Libellula quadrimaculata** L.

Grand Entry, June 30, 1901, 12 ♂, 2 ♀. Northern Hemisphere, northern.

Notes on Collecting Coleoptera in Wyoming and Utah.

By W. KNAUS, McPherson, Kansas.

(Continued from page 115.)

My next stop was at Medicine Bow, fifty miles northwest of Laramie. This station was my closest railway point to the old station of Aurora, on the edge of Lake Como, where I wished to look for *Cicindela willistoni* Lec. From Lookout to Medicine Bow the old railway line was abandoned and taken up, and one must walk back east eight miles from Medicine Bow to reach Lake Como, situated in a small mountain basin. In the eight miles walk you do not see a single habited house, but at Lake Como is the Berry ranch, near the abandoned station site. A brisk walk from Medicine Bow, Sunday morning, June 23rd, with a few stops to look for insects under the old ties along the dismantled road-bed, brought me about eleven o'clock to the southwest point of the mountain lake, covering something near one hundred and sixty acres. On the maps the lake is nameless, but is known locally as Lake Como. The water is charged with alkali and has a soapy appearance. From the old road-bed a small rivulet leads into the lake some seventy-five yards away, and the alkali wash towards the lake is either bare of vegetation or scantily covered. On this alkali soil near the edge of the lake, S. W. Williston, the latter part of June, 1877, while hunting fossils in the adjacent mountains for Yale College, accidentally found a species of Cicindelidæ that was undescribed. Dr. Leconte described the species as *willistoni*, naming it for the discoverer. Some fifty or sixty specimens were taken by Prof. Williston, and up to this year, with the possible exception of a dozen specimens, this has remained a record of the catch of this species.

On my arrival at the lake I was not long in locating its haunts, and soon had my first specimen in the cyanide bottle. Collecting was good until 3.30 P.M., when the lateness of the hour and the continued use of my net had reduced the numbers visible to an occasional specimen. I found they occurred only over a small area of bare or scantily reed-covered white alkali soil,

fifteen feet wide by one hundred feet long, and about six to ten feet back from the waters' edge. I went over the ground carefully along the lake for over a quarter of a mile, but found only a single specimen. They would not stay on the red soil, or on soil covered with grass or other vegetation. The movements of this species are different from any that have come under my observation. They run rather clumsily, are slow on the wing, and rarely fly further than ten or twelve feet; often only six or eight feet. When the net is thrown over them they seldom fly up into the net, but almost always remain on the ground, often not moving until picked up. As they were not copulating, I inferred that the middle of their season was about June 10th, extending from say, May 10th to July 10th. No other species was seen in this locality, which has an elevation of about six thousand seven hundred and fifty feet. *Willistoni* is assigned in Henshaw's list as a variety of *fulgida*, but from my observations on their habits and a comparison of the species themselves, I have no hesitation in pronouncing it a distinct and valid species.

Other species taken at Lake Como were, *Bembidium insulatum* Lec., and *ephippiger* Lec., a species of *Pterostichus*, a species of *Harpalus* and four specimens of a handsome *Eleodes* apparently undescribed.

At Medicine Bow, collecting by beating willows, wild roses, and turning over old ties, yielded *Harpalus ellipsis*, Lec., a Staphilinid, *Leptacinus* sp., a Nitidulid, *Meligethes mutatus* Harr. in numbers; *Agrilus politus* Say, also in numbers; also a *Hydnocera subfasciatus* Lec., numbers of *Aphodius vittatus* Lec., a species of *Bruchus*, probably *pauperculus* Lec., a *Tenebrionid*, *Helops difficilis* Horn, two fine specimens of Curculionids, *Nocheles æqualis* Horn, and *Lixus rubellis* Rand. *Anthonomus confusus* Dietz was also taken here.

A day at Ogden, Utah, July 24th, allowed but a single hour's collecting at the Hermitage, Ogden Canyon, six miles from the city. Here I found under stones at the water's edge *Nebria obliqua* Lec. at an altitude of over five thousand feet. Under the same conditions I took *Bembidium recticollis* Lec., *planatum* Lec. and *transversale* Dej.; *Platynus fossiger* Dej., and *P. de-*

corus Say. Under stones along the canyon stream were also found *Philonthus furvus* Nord., *basalis* Horn and *Dianus nitidulus* Lec. Two specimens of the Cerambycid, *Leptura crysocoma* Kirby were beaten from alder bushes, together with a species of *Pachybrachys*. From the same bushes were beaten *Pentaria trifasciata* Melsh. and *Anthicus stellatus* Csy.

Lagoon is a summer resort sixteen miles north of Salt Lake City. It is situated at the foot of Wasatch Mountains and three miles east of the lake. I collected there, June 25th, going west from Lagoon to the Lake. The wind was strong from the west and the temperature below sixty degrees, so catches were not very numerous. However, I found one specimen of *Calosoma tepidum* Lec. and the mutilated remains of another. Around the margins of salt ponds were found *Bembidum* in considerable numbers. I took *bifossulatum*, Lec., *insulatum*, Lec. and *approximatum* Lec. *Brachynus cordicollis* Dej. and *Chlænius pennsylvanicus* Say were found under railway ties. A species of *Cœlambus* (*lutescens* Lec.) was taken in a fresh water pond. *Aphodius vittatus* Say occurred under cow chips, together with numbers of *Metachroma californica* Cr. *Phyllotreta lewisi* Cr. were beaten from flowering plants, together with an *Oxacis bicolor* Lec. *Nemognatha bicolor* Lec. were found in thistle heads. The only two species of *Curculio* taken were *Copturus adspersus* Lec. and a single specimen of *Rhodobænus 13-punctatus* Ill.

Coming down into the Salt Lake valley from the northeast is City Creek Canyon. City Creek dashes over the rocks at the bottom of this canyon and is fed by springs and the melting snows of the higher peaks of the Wasatch range. The canyon is wooded and has a varied and abundant insect fauna, constantly changing with the elevation. I spent three or four hours in this canyon June 28th, in company with my friend, G. W. Browning, a native of Salt Lake City, an enthusiastic lepidopterist and an artist of no mean ability. This canyon is his favorite collecting ground for Lepidoptera and he is familiar with its every curve and physical feature for miles. As in Ogden Canyon, *Philonthus furvus* Nord. was the commonest Staphylinid, occurring under stones at the edge of the stream.

Phalacrus simplex Lec. was taken by beating shrubbery. The Coccinellidiæ were well represented. *Coccinella 9-notata* Hbst., *transversalis* Melsh., *sanguinea* Linn. and *Brachycantha dentipes* Fab., were common. Of the *Histers* only one species was found, *Saprinus lubricus* Lec. Of *Nitidulids*, two specimens of *Cercus pennatus* Murr. and numbers of *Meligethes mutatus* Harr. were found on thistle heads and other flowering plants.

The common *Elater*, *Dolopius lateralis* Esch., was taken, and a single specimen of a *Corymbites* very near *hieroglyphicus*. *Acmæodera variegata* Lec. was the common *Buprestid* on thistle heads and other flowers. *Ellychnia californica* Mots. and *Podobrus tomentosus* Say were taken by beating. *Collops insulatus* Lec. and *Trichochrous seriellus* Csy. were found abundantly on thistle heads. *Trichodes ornatus* Say is not uncommon, feeding on flowers. *Aphodius granarius* Linn. was fairly common, but only a single specimen of *Toxotus vestitus* Hald. was taken on flowers. Of the *Chrysomelidæ*, *Coscinoptera axillaris* Lec. *Saxinis saucia* Lec., *Lina scripta* Fab., *Disonycha collaris* Fab. and *Luperodes morrisoni* Csy. were easily taken by beating. Of *Cryptocephalus* 4-*maculota* Say, *Diachus auratus*, Fab., *Scelolyperus longulus* Lec. and *Haltica tombacina* Mann, but a single specimen of each was found. Of the *Tenebrios* a single specimen of *Coniontes robusta* Horn, was picked up high on the side of the canyon. Nearby were found *Elcodes extricata* Say, and *hispilabris* Say. Of *Anaspis rufa* Say, three specimens were taken, but only a single specimen of *Mordella scutellaris* Fab. A single specimen of *Lappus cursor* Csy. and a species of *Lappus* were also taken. *Mylacus saccatus* Lec. was rather common on flowers, while only one *Apion proclive* Lec. and a *Smicronix* sp. were found. High up on the side of the canyon and just above the city several specimens of an *Acanthoscelis* were beaten from flowers.

The popular resort for Salt Lake City people is Saltair, an immense pavilion built on piles in the lake, near its southern extremity, fourteen miles southwest of the city. Excursion trains run out almost every hour during the day with thousands of pleasure seekers, who go to dance and dip in the salt-charged waters of the lake. About a quarter of a mile east of the pa-

vilion is the power house, situated south of the track some five hundred feet. The space between the track and this power house was the scene of my collecting on the afternoons of June 26th, 27th and 29th. It is a flat saline beach with pools of salt water near the railroad embankment, with two rivulets running from a pipe line south to the pools. On the afternoon of the 26th I found *Cicindela hæmorrhagica* Lec. in large numbers along the bed and banks of the westernmost of the rivulets, and extending down to and along the edge of the pools. They were shy and active and were not easily taken on an uneven surface. The Utah forms vary in elytral markings vary slightly from the California coast specimens. None of the black variety, *pacifica*, found with the typical species in California, occur here. Just east of the rivulet I took a single specimen of *Cicindela tenuicincta* Sch. I had had since 1893 a single specimen of this species given me by E. A. Schwarz, who had taken several specimens June 15th at Garfield Beach, then the popular Salt Lake resort. Later in the afternoon I worked over to the other rivulet about three hundred feet east and was gratified to find a half dozen of *tenuicincta*. On the 27th my entire time was devoted to the east rivulet and I found this to be the almost exclusive haunt of *tenuicincta*, *hæmorrhagica* frequenting it only in scattering numbers. It was apparently the height of the season for *tenuicincta*, as two at a time, and occasionally three specimens were taken at a single cast of the net. The males were smaller and more active than the females, and were not averse to fierce encounters to secure favor in the female regard. They apparently fed on a small Dipteron which bred by the millions in the sluggish salt streams and pools. *Tenuicincta* is a strong runner and flyer, but not very shy. It is placed as a variety of the Californian *latesignata* Lec., but from its elytral markings, shape of thorax and elytra and punctuation, I am convinced that it is a separate and distinct species.

I took a single belated specimen of *Cicindela vulgaris* Say, its season having been over for several weeks. Associated with *tenuicincta* and *hæmorrhagica* I took about a dozen specimens of Casey's *echo*. They are shy, active runners and quick flyers, and will escape from the net if possible. It was evidently

late in the season for them, as my friend Browning took them as early as the latter part of April, and in numbers the middle of May. They were found on the salt flats from Saltair to within three or four miles of the city.

Under pieces of lumber and other drift-wood along the beach were found numbers of *Bembidum henshawi*, Haywd. *approximatum* Lec., and *ephippiger* Lec. A single specimen each of *Tachys corax* Lec,, *Pogonus planatus* Horn and *Amara* sp. were found. *Agabus disintegratus* Cr. had been washed ashore by the waves of the lake. A species of *Philonthus* was taken on the lake shore. Under drift on the beach and near the edge of salt pools were found *Dermestes marmoratus* Say and *talpinus* Mann. Three species of *Histers* were taken under drift: *Saprinus lubricus* Lec., *contractus* Csy. and *estriatus* Lec. A few specimens of *Aphodius inquinatus* Hbst. were picked up here and a single specimen of the Tenebrionid genus, *Blapstinus* was taken. *Tanarthus salicola* Lec. was rather common under drift.

On my return a few hours stop at Cheyenne, Wyo., permitted me to collect a short time north of the city limits, but with poor return. *Trichodes ornatus* Say was found on thistles, and *Canthon praticola* Lec. and *Aphodius coloradensis* Horn occurred under cow-chips. *Acmæops pratensis* Laich was found on sunflowers; *Bruchus pauperculus* Lec. was common on thistle flowers.

The Greenhouse Coccidae, II.

By GEORGE B. KING, Lawrence, Mass.

(Continued from Vol XII, No. 10, page 314)

DIASPINÆ.

34. **Aspidiotus spinosus** Comst. 1883.

This is found only in greenhouses in the United States. Its native home is unknown, and has only been found in greenhouses thus far.

33. **Aspidiotus latanie** Sign. 1869.

Syn. *A. greenii* Ckll. *A. cydoniæ* Green. Has been found on *Cycas revoluta* at Savannah, Ga. (W. M. Scott), in New York

on palms in greenhouses, and on palm (*Howea belmoreana*) at Lawrence, Kansas (S. J. Hunter); on ivy (*Hedera*) at Lawrence, Mass. (King). It is a greenhouse species in Europe (Signoret). Introduced.

34. **Aspidiotus hederæ** Vall. 1829.

Usually cited as *A. nerii*, is found on Oleander and Dracæna in the College Greenhouse in Colorado (Baker); a greenhouse pest in New Mexico (Cockerell); on lace fern, *Asparagus plumosus*, and *Hedera* in the University greenhouse at Ithaca, N. Y.; on Hedera and China tree in Ohio; on *Cycas revoluta*. *Jasminum grandiflorum* and orange in Georgia (W. M. Scott); on *Asparagus plumosus* in the University greenhouse in Illinois (W. G. Johnson); on a palm in a dwelling house at London, Ont., Canada (King); on *Oleander* at Westbrook and *Hedera hibernica* at Portland, Maine (O. O. Stover). It is a common European species and found out of doors in California and Georgia.

35. **Aspidiotus hederæ** var. **ericæ** Boisd.

Found in a greenhouse at Lawrence, Mass., on *heather* (*Erica*) King. A European species (Signoret). Introduced.

36. **Aspidiotus myrsinæ** Sign.

A species allied to *hederæ* found on *Myrsina retusa* in the hothouse of the Luxembourg, Paris (Signoret). Introduced.

37. **Aspidiotus rapax** Comst. 1881.

In Colorado on Japan quince, *Aralia* and *Ficus elastica* (Baker); on house plants in New Mexico (Cockerell); in College greenhouse at Amherst, Mass., and is found on *Camellia* in greenhouses in France. Introduced.

38. **Aspidiotus cyanophylli** Sign. 1860.

In the Harvard botanical greenhouse at Cambridge, Mass. (King); in greenhouses at Lawrence, Mass. (King); on *Ficus* species (Comstock); on *Cyanophyllum* and *Cycas* in Ceylon (E. E. Green) and in greenhouses in France (Signoret). Introduced.

39. **Aspidiotus personatus** Comst. 1882.

Has been found on plants under glass at the Kew Botanical Gardens, England.

40. **Aspidiotus aurantii** Mask. 1878.

Found on an orange in a greenhouse at San Francisco, Cal. Introduced.

41. **Aspidiotus aurantii** var. *citrinus* Coquill.

On olive in the conservatory of the U. S. department of Agr, at Washington, D. C. (Marlatt). Introduced.

42. **Aspidiotus buddeiæ** Sign.

This was found on *Buddeia salicina* in a greenhouse of the Luxembourg, Paris (Signoret).

43. **Chrysomphalus aonidum** L. Syn. *Aspidiotus ficus* Ashm.

Originally described as *Coccus aonidum*; is found at Santa Fe, New Mexico (Cockerell); at Corvallis, Oregon (A. B. Cordley); on *Phormium tenax* in Colorado (Gillette); in greenhouses in Florida; on palms at Gloversville, N. Y. (G. W. Pool); on palms, *Cycas revoluta* and ferns in Georgia (W. M. Scott); in the department greenhouses, Washington, D. C., on *Allamanda;* at Bangor, Maine (O. O. Stover). A common species in greenhouses in Mass. (King), and a frequently found species in Europe in greenhouses. Introduced.

44. **Chrysomphalus dictyospermi** Morg. 1889.

Described as an *Aspidiotus;* is found at Santa Fe, New Mexico, on *Pandanus* (Cockerell); on *Chamærops elegans* in greenhouses in Colorado (Baker); on *Areca lutescens* at Columbus, Ohio (J. S. Hine). I have received it on *Cinnamon* from a greenhouse at Ottawa, Canada, Coll. Fletcher, and from Dr. Dimmock, found on *Ficus elastica* at Enfield, Conn. It is found in Trinidad on *Areca catechu* (Hart). Introduced.

45. **Disapis cacti** var. *calyptroides* Casta.

Was first described from a greenhouse and found on Cactus in Georgia (W. M. Scott); in the college greenhouse at Amherst, Mass. on *Cactus* (D. H. Hemenway). It lives out of doors on wild *Cactaceæ* at Tucson, Arizona. It is recorded from pineapple in Georgia. This seems to be an error; it must have been an *Aulacaspis* species, *bromeliæ* or *boisduvalii* [Ckll. in litt.].

46. **Aulacaspis elegans** Leon 1899.

Very destructive to *Cycas revoluta* in greenhouses at Springfield, Mass. (Dimmock), on *Cycas revoluta* in the Harvard Botanical greenhouse at Cambridge, and at Lawrence, Mass. (King). Originally described from Portici, Italy, on *Cycas revoluta*. Introduced.

47. **Aulacaspis bromeliæ** Kerner 1778.

On pineapple at San Jose, Cal., E. M. Ehrhorn, and received from O. O. Stover on *Latania borbonica* and *Livistona Chinensis* at Portland, Maine; on *Acacia*, *Olea fragans*, *Gnidia? simplex* and ivy at Plum Island and Amherst, Mass.; in the Botanical greenhouse at Cambridge, Mass. Introduced.

48. **Aulacaspis boisduvalii** Sign. 1869.

On palm in Colorado (Gillette); also on palms in greenhouse, Lawrence, Mass. (King). It is recorded as being found out of doors on apple and peach, but this seems very unlikely, as it is a tropical species. Introduced.

49. **Parlatoria proteus** var. **pergandei** Comst. 1880.

In a miscellaneous lot of scale insects sent to me by Prof. Cockerell for study, one on *Ficus* Sp., collected by P. J. Parrott, at Manhattan, Kansas, proved to be the above species. Introduced.

50. **Parlatoria proteus** var. **crotinis** Douglas 1887.

Was found on *Croton* under glass at Columbus, Ohio. Coll. Bogue (Cockerell). Introduced.

51. **Mytilaspis gloverii** Pack. 1860.

On orange and lemon in a greenhouse in New York; on orange at Marshallville, Georgia; also on *Magnolia fuscata* (W. M. Scott). A very common species on orange and lemon out of doors. Nativity uncertain, probably introduced.

52. **Mytilaspis beckii** E. Newman, 1869.

Described as *Coccus beckii* Syn. *M. citricola* Pack. Found on dwarf orange at Thomasville, Georgia; on *Citrus* sp. in a greenhouse at Manhattan, Kansas, Coll. P. J. Parrott, 1898. Very common out of doors on orange and lemon; also found in a greenhouse near Moscow, Russia, on lemon. Introduced.

53 **Pinnaspis pandani** Comst. 1881.

Found in Mass. under glass (Cockerell). Originally described under the name *Mytilaspis*. Introduced.

54. **Hemichionaspis aspidistræ** Sign. 1869.

Described as a *Chionaspis;* was found on fern in the department greenhouse of Washington, D. C. (Cooley): on fern (*Pteris serrulata*) received from Dr. Fletcher; in a greenhouse at Ottawa, Canada, 1900, also received on *Cycas* sp. from Orono, Maine, Coll. O. O. Stover, and found on fern (*Davallia moorei*) in the Harvard botanical greenhouse, Cambridge, Mass. (King). It is also a common greenhouse pest in Europe (E. E. Green) and lives out of doors on several food plants. Cited by Signoret. Introduced.

55. **Ischnaspis longirostris** Sign. 1882, *filiformis* Dougl.

On palm in department greenhouse at Washington, D. C. (Howard); on palms, *Cycas* and *Aroids* in Trinidad, and *Strychnos myristica* and other plants in the Royal Botanical Garden greenhouse, London, England. It is very common on cultivated plants in the West Indies and in Australia, on palms in greenhouses (Maskell), also found at Atlanta, Georgia, on a palm, *Kentia belmoriana* (W. M. Scott), and in a greenhouse at Boston, Mass., on *Monstera* sp. Coll. S. Henshaw. Introduced.

56. **Fiorinia fioriniæ** Targ. 1869.

This is recorded under several names, e.g., *F. camelliæ*, *Uhleria camelliæ*, *Diaspis fioriniæ*, *Fiorinia pellucida* and *Chermes arecæ*. It has been found at Washington, D. C., on *Camellia*, *Cycas reroluta* and palm *Kentia belmoriana* (Comst.); on *Camellia* at Baltimore, Maryland; on *Camellia japonica* and *Cycas revoluta* in Georgia (W. M. Scott); on *Kentia belmoriana* in conservatories at Kew, England (C. F. Morgan) and in greenhouses in France (Signoret). It is found out of doors in Europe and America.

(To be continued.)

Ormodes hexadactyla.—This species occurs also at Moscow, Idaho, where I have taken three specimens in nine years. A fourth was seen on the outside of a window, with its wings spread so as to display the peculiar structure; but when I came around to the place it had disappeared. —J. M. Aldrich.

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 a 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., MAY, 1902.

The preliminary report of the Secretary of Agriculture of Pennsylvania for 1901 contains the following statement: "Division of Economic Zoology. This division is in charge of a commissioner who is known as the Economic Zoologist, whose duties are to make examination and investigations into the insect enemies of crops and report upon their ravages and give suggestions for their control or eradication." . . . . . There is also incorporated the report of the work done in the Division of Zoology for the year ending December 31, 1901, and signed by the Economic Zoologist. Seven pages of the report of the Zoologist consist of the copy of an act passed at the last session of the Legislature. This act related to the protection of trees, shrubs, nursery stock, etc., against destructive insects. There is a half page devoted to other matters, in which it is stated that the "tent caterpillar was abundant" and that the "Angumois grain moth was again troublesome in the Eastern section."

"The office work of the division has been extensive. Hundreds of letters have been received and answered." The Economic Zoologist receives a salary of $2,500 and has an assistant who receives $1,800 per annum, making in all $4,300, which does not include the expenses of the department. We leave our readers to judge whether the people of Pennsylvania receive an adequate return for the money expended. The Act of Assembly was probably not copied by the Zoologist, but if it were, that work can be done at 25 cents an hour, and it could be done in two or three hours. We consider the report from the standpoint of Economic Entomology very unsatisfactory.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

CHRYSALIS OF *Melitæa gabbi*.—On April 5, 1901, I found a chrysalis of *Melitæa gabbi* hung to a cover of a paste board box, which was lying beside the road on the top of the Casitas Pass, which is 1200 feet above sea level and is about eighteen miles from Santa Barbara, California.

The chrysalis is half an inch long and was fastened at the anal extremity and with a girdle around the middle. It was of a brownish color all over, but when I found it you could see the spots of the wings very plainly. The shape of the chrysalis is more like the chrysalis of the genus *Thecla* or *Lycæna* than like *Melitæa* and strongly resembles the chrysalis of *titus*, only the anal extremity is pointed more and the other end is rounded more, otherwise it is the same. The chrysalid hatched April 9, 1901. The spots of the wings grew much plainer as the days went by.

EGG OF *Euchlœ sara* VARIETY *reakirti*.—On April 9, 1901, at Montecito, Santa Barbara, California, I watched a *Euchlœ sara* variety *reakirti* deposit an egg. It was about ten in the morning, when I noticed this butterfly hovering round some of the common mustard; suddenly it alighted on a leaf and curving abdomen round the leaf deposited an egg on the under side near the point; then it flew off to some wild turnip to feed. The egg was shaped like a spindle and was marked with lateral lines with raised vertical edges and of a yellow-white, green color. Upon looking at it April 10th the green color was gone and it was slightly brown. On looking at it April 11th, at nine o'clock in the morning it was the same as before, but when I went to look for it at half past eleven to take it into the house I found the whole field of grain had been cut and the mustard plant, too, much to my sorrow.—GEORGE R. MINOT.

Fumigation Methods, a Practical Treatise for Farmers, Fruit Growers, Nurserymen, Gardeners, Florists, Millers, Grain Dealers, Transportation Companies, Colleges and Experiment Station Workers, etc. By Willis G. Johnson. Orange Judd Company, New York. This is a work of 313 pages, and is profusely illustrated by "half-tones" and line engraving cuts. Prof. Johnson has produced a very valuable work on an important economic subject, and treats it in a thorough manner. Hydrocyanic acid gas and carbon bisulphide are among the most valuable insecticides known, and we feel sure that persons interested in Economic Entomology will find this work invaluable, as its author is an authority on the subject.—H. S.

THE entomologists of the experiment stations of Montana, Idaho, Washington and Oregon met for conference at Moscow, Idaho, March 14, continuing in session through the following day. The principal insect pests of the section are the San Jose Scale and the Codling Moth, which were fully discussed. Many other insects were more briefly taken up. The

relation of station entomologists to the state horticultural inspection work was one of the topics considered, the unanimous opinion being that the entomologist should keep in touch with this for the sake of the assistance it would give him in arranging his experimental work, but that he should not act as an inspection or quarantine officer. The most threatening insect pests at present are the Hessian Fly, already introduced about Portland, Ore., and the Plum Curculio, which are reported on good authority as existing in the Bitter Root Valley of western Montana, on the west side of the continental divide. Plans were made for the coming season, involving among other things a fuller study of the Codling Moth at all the stations, to determine the number of broods and to test the efficacy of sprays.

It was voted to hold an annual meeting, and the name "Pacific Northwest Economic Entomologists" was adopted. The membership being necessarily small, a secretary was the only officer elected, J. M. Aldrich, of Idaho, being chosen to this position.

THE ANNUAL DINNER of the New York Entomological Society was held at the Hotel Endicott on April 1st at 7 P. M. It was a success in every way and clearly demonstrated the increased interest in entomology. The following members and guests of the Society were present:

C. F. Groth, Wm. Beutenmuller, Chas. Palm, E. L. Graef, E. P. Felt, E. B. Southwick, W. D. Kearfoot, L. T. Münch, Jr., G. Franck, F. Fillion, L. Riederer, W. T. Davis, R. L. Ditmars, F. E. Watson, E. A. Bremser, H. F. Kudlich, G. Englehardt, J. D. Sherman, Jr., C. H. Roberts, C. W. Leng, L. H. Joutel, H. G. Barber, G. Schaeffer, G. Beyer, E. G. Love, C. H. Sunderland, F. V. Green, W. G. Johnson, A. C. Weeks, R. Ottolengui, J. B. Smith, E. C. Van Dyke, W. J. Holland, Henry Skinner.

NEW LOCATION FOR MEDITERRANEAN FLOUR MOTH.—The writer is in receipt of a sample of flour badly matted and webbed together by the Mediterranean flour moth, *Ephestia kuchniella*, taken from a mill in White County, Indiana. This, so far as the writer's records and knowledge of the distribution of this pest goes, is the first appearance of this destructive insect in Indiana.—PROF. W. G. JOHNSON, New York.

"THE COW PEA" is the title of the latest publication issued by the Experiment Farm of the North Carolina State Horticultural Society at Southern Pines, N. C. This book, neatly bound and illustrated, in plain and concise manner discusses the value and uses of this important crop, the Cow Pea. Every reader can get a copy free by writing to the Superintendent of Experiment Farm, Southern Pines, N. C.

CONCERNING MOSQUITOES.—It is always interesting to the entomologist to learn what other people think of him, his methods and proceedings. It is also a matter of importance that the student of economic problems should get the experience of others, especially if based upon observation. The mosquito problem in the State of New Jersey is far from solved; but

we do still have the voluntary assistant with us. He writes under date of April 9th, 1902, as follows:—"Dear Sir :—As I red in your Experlment Station about a Man wanting ten thousand Dollars to kil those Miskatoes Now if you will take and fill a barrel half full of water in hot weather and let it stand till it stagnated and then take your glasses and look careful in the water and you will see the Logerhead those turns to Muskatoes after a few days you can see them crawling up the barrel. If that Man will stop its raining so there is no stagnated water, I think their would be No Musketoes." The advice is good, no doubt; but there is just a little difficulty in getting it carried out!—J. B. SMITH.

Sphyracephala brevicornis SAY.—In the January NEWS, in the report of the meeting on November 21st of the Entomological Section of the Academy of Natural Sciences, I noticed a reference to this species, or the "hammer-headed fly," as it is sometimes termed here, and the statement that Ithaca is a "locality with no skunk cabbage nearby." Evidently Mr. Huntingdon was misinformed in regard to this, for there is certainly an abundance of *Symplocarpus* here, even within the city limits. The "Renwick flats" are thickly covered in places with skunk cabbage, and there is also a good supply of it in places along Fall Creek. However, one often takes these peculiar little flies at some distances from the skunk cabbage tracts. This last summer scores of them were swept from bushes and herbage along Fall Creek, down near the water, at points where there was none of this plant to be seen, but there was an abundance of it to be found higher up on the banks, at the top of the gorge.—C. O. HOUGHTON.

THE SHARON SUMMER SCHOOL, conducted by the Instructing Staff of the Biological Department of the Massachusetts Institute of Technology, will have a centre for outdoor work at the Sharon Biological Observatory, Sharon, Mass. Various courses will be given including Entomology. Opens July 9th and extends over four months. Fees $30, payable in advance. For particulars, address C. E. A. Winslow, Mass. Inst. Technology at Boston.

PRIZES FOR COLLECTIONS OF BEETLES.—In pursuing its purpose to encourage the study of local natural history the Science Museum of Springfield, Mass., offers two cash prizes for the collection of beetles. These prizes are open to children who are pupils below High School grade in any Springfield school. The prizes will be one of ten dollars and one of five dollars for the two best collections.

FOURTH ANNUAL SESSION, UNIVERSITY OF MONTANA BIOLOGICAL STATION, Flathead Lake, Montana. A field and laboratory course in Entomology will be given. Instruction in collecting, preserving and labelling insects; dissection and study of typical specimens. The facilities for excursions and collecting are excellent and the country interesting and beautiful. Begins July 14th. No fees. Board $5.00 per week. For information apply to Prof. M. J. Elrod, Missoula, Montana.

Entomological Literature.

COMPILED BY J. CHESTER BRADLEY.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

3. American Naturalist.—**4.** The Canadian Entomologist, London, Ontario, Canada.—**5.** Psyche, Cambridge, Mass.—**6.** Journal of the New York Entomological Society.—**9.** The Entomologist.—**10.** Nature, London.—**11.** The Annals and Magazine of Natural History, London.—**15.** Biologia Centrali Americana.—**19.** Horæ Societatis Entomologica Rossicæ, St. Petersburg.—**21.** The Entomologists' Record and Journal of Variation, London.—**22.** Zoologischer Anzeiger, Leipsig.—**35.** Annales Societé Entomologique de Belgique, Brussels.—**38.** Wiener Entomologische Zeitung.—**43.** La Cellule, Lierre et Louvain.—**44.** Verhandlungen der K. K. Zoologische Botanische Gesellschaft, Wien.—**45.** Deutsche Entomologische Zeitschrift, Berlin.—**55.** Le Naturaliste, Paris.—**59.** Sitzungsberichte, Gesellschaft der Naturforschenden Freunde, Berlin.—**86.** Naturwissenschaftliche Rundschau, Braunschweig.—**86a.** Annales Soc. Ent. de France, Paris.—**86b.** Bulletin Soc. Ent. de France, Paris.—**119.** Archiv für Naturgeschichte, Berlin.—**140.** Proc. Washington Academy Sciences.—**148.** Bull. New York Agric. Exper. Station, Geneva.—**157.** Ohio Naturalist.—**156.** Meddelanden af Societas Pro Fauna et Flora Fennica, Helsingfors.

THE GENERAL SUBJECT.—Bashmetiew, P.—Die Abhangigkeit des Kritischen Punkts bei Insecten von der Abkühlungs-geschwindigkeit. Insecten: Warum fliegen die Tagschmetterlinge nur am Tage und die meisten Nachtschmetterlinge nur in der Nacht? Experimentelle Entomologische Studien von physikalisch-chemischen Standpuncte aus. I. Temperatureverhältnisse bei Insekten, **86.** Braunschweig, xvii, p. 122, Mar., '02.—**Bataillon, E.** La théorie des métamorphoses de M. Ch. Pérez, **86b,** 1900, p. 58.—**Bourgeois, J.** Sur un mode particulier de progression souterraine chez quelques larves d' Insectes, **86b**, 1900, p. 261.—**Giard, A.** Cils vibratiles et prolongements ciliformes chez les Arthropodes, **86b,** 1900, p. 27. **Id.** La Métamorphose est-elle une crise de maturité génitale? **86b,** 1900, p. 54.—**Lutz, F. E.** Labels, **4,** xxxiv, p. 102.—**Peyerimhoff, P. de.** Sur l' application de la loi phylogénique de Brauer, **86b,** 1900, p. 219.—**Sharp, D.** Insecta, Zoological Record, xxxvii, 1900.—**Standfuss, M.** Zur Frage der Unterscheidung der Arten bei den Insekten. Entomologische Zeitschrift, xvi, p. 1.—**Terre, L.** Contribution à l' étude de l' histolyse du corps adi-

peux chez l' Abeille, **86b,** 1900, p. 62.—**Verhoeff.** Ueber Dermapteren Aufsatz: Versuch eines neuen, natürlicheren Systems auf vergleichend—morphologischer Grundlage und über den Mikrothorax der Insecten,* **22,** xxv, p. 181.

ECONOMIC ENTOMOLOGY.—Britton, W. E. Preliminary Experiments in Spraying to kill the San Jose Scale-insect. Connecticut Expmt. Sta. Bull., 136, Feb., '02, New Haven, Conn.—**Cordley, A. B.** Codling Moth and late spraying in Oregon. Bull. 69, Oreg. Agric. Exp. Stat.—**Felt, E. P.** Insects injurious to Elm trees. Fifth Annual Report Fisheries, Game and Forest Commission, State of New York.—**Johnson, W. G.** Fumigation methods. Orange Judd, Co., New York, 1902.—**Lowe, V. H. & Parrott, P. J.** San Jose Scale Investigations, iii, **148,** No. 202, Dec., '01.—**Noel, P.** Les Ennemis des Abeilles, **55,** Mar. 15, '02, p. 70.—**Quaintance, A. S.** Report of the State Entomologist of Maryland, 1901.—**Reuter, E.** *Physopus tenuicornis* Uzel als Erzeuger totaler Weissährigheit bei Hafer, **158,** 27, p. 115.—**Id.** *Rhizoglyphus echinopus* (Fum. et. Rob. Murray) ein neuer Schädiger des Hafers, **158,** 27, p. 121.—**Stephens, J. W. W. & Christophers, S. R.** Relation of malarial endemicity to "species" of *Anopheles.* Royal Society London, Reports to the Malarial Committee, Mar. 6, '02.

ARACHNIDA.—Banks, N. Field-notes by **Snodgrass, R. E.** Papers from the Hopkins Stanford Galapagos Expedition, 1898-9. Entomological Results (b), Arachnida,* **140,** iv, p. 49.—**Bösenberg, W.** Die Spinnen Deutschlands II, Zoologica; Original Abhandlungen aus dem Gesammtgebiete der Zoologie, Stuttgart, 1902.—**Cambridge, O. P.** Arachnida Araneidea, **15,** Vol. i, Pl. xxxix; Vol. ii, pp. 313-336, Pl. xxxi.—**Dahl, F.** Ueber abgebrochene Copulationsorgane männlicher Spinnen im Körper der Weibchen, Uebersicht der *Latrodectus* Arten,* **59,** 18, p. 36.—**Gough, L. H.** The developement of *Admetus pumilio* Koch, a contrib. to the embryol. of the Pedipalps. The Quarterly Journal of Microscopical Science, N. S, 180, p. 595, London, 1902.—**Lamy, E.** Note sur l' appareil respiratoire trachéen des Aranéides, **86b,** 1900, p, 267.—**Oudemans, A. C.** Ueber eine sonderbare Art von Ueberwinterung einer Milbe, **22,** xxv, 218, 10 Mar., '02.—**Peckham, G. W. & E. G.** Some new genera and species of Attidæ from South Africa, **5,** 9, p. 330.—**Pocock, R. I.** A Contribution to the Systematico of the Pedipalpi, **11,** 9, p. 157.—**Simon, E.** Études arachnologiques. Descr. d'espèces nouvelles de la famille des Attidæ,* **86a,** lxix, x, p. 27.—**Id.** Descriptions d'Arachnides nouveaux de la famille des Salticidæ (Attidæ), **35,** Tome 46, ii, p. 24, Feb., '02.—**Trotter, A.** Description d'une espèce nouvelle d'Eriophyes de l'Amérique du sud, **86b,** 1900, p. 224.

MYRIOPODA, Etc.—Bouvier, E. J. Observations nouvelles sur les *Peripatus,* **86b,** 1900, p. 396.—**Lucas, R.** Myropoda, **119i,** ii, p. 1029.—**Lucas, R.** Prototracheata, **119,** ii, p. 1206.—**Hansen, H. J.** On the genera and species of the Order Pauropoda,* Videnskabelige Meddelelser fra den naturhistoriske Forening, Copenhagen, 1901, p. 323.—**Verhoeff, K. W.** Beiträge

zur Kenntniss paläarktischer Myriopoden, xix, Aufsatz. Diplopoden aus Herzegowina, Ungarn und Baiern, **119,** 1, p. 221. xx, Aufsatz. Diplopoden des östlichen Mittelmeergebietes, **119,** 1, p. 241.

THYSANURA.—Folsom, J. W. Papers from the Harriman Alaska Expedition, xvii, Apterygota, **140,** iv, p. 87.—**Lecaillon, A.** Recherches sur la structure et le développement postembryonnaire de l' ovaire des Insectes, ii, *Campodea staphylinus* Westw., **86b,** 1900, p. 152; iii, *Machilis maritima* Latr., **86b,** 1900, p. 205.—**Lucas, R.** Apterygogenea, **119,** ii, p. 1016. —**Skorikow, A. S.** Einige Beobachtungen über die Häutung der Collembola, **19,** T. xxxv, No. 2, p. 156, St. Petersburg.—**Willem, V.** La position des Anurophoriens dans la classification des Collemboles, **35,** Tome 46, ii, p. 21, Feb., '02.

ODONATA.—Calvert, P. P. Neuroptera (Odonata)*, **15,** pp. 73–96.—**Lucas, R.** Odonata, **119,** ii, p. 1000.

CORRODENTIA.—Lucas, R. Corrodentia, **119,** ii, p. 901.

MALLOPHAGA.—Kellogg, V. L. Mallophaga from Birds of the Pacific Coast of N. America,* **6,** x, p. 20.—**Lucas, R.** Parasitica (Mallophaga), **119,** ii, p. 900.

ORTHOPTERA.—Bordas, L. See Hymenoptera.—**Bruner, L.** Orthoptera, **15,** ii, pp. 25–32.—**Caudell, A. N.** The Dectinean genus Eremopodes,* **4,** xxxiv, p. 98.—**Kuhlgatz, Th.** Orthoptera, **119,** ii, p. 917.—**Sinéty, R. de.** Les tubes de Malpighi chez les Phasmes, **86b,** 1900, p. 333.—**Id.** Homologation du testicule chez les Phasmes, **86b,** 1900, p. 350.—**Id.** Recherches sur la Biologie et l'Anatomie des Phasmes, **43,** xix, p. 119.

THYSANOPTERA.—Lucas, R. Thysanoptera, **119,** ii, p. 900.—**Reuter, O. M.** Thysanoptera tria mediterranea* Ofversigt af Finska Vetenskaps-societetens Förhandlingar Helsingfors, xliii, p. 214.

HEMIPTERA.—Breddin, G. Neue neotropische Wanzen und Zirpen,* Societas Entomologica, xvii, p. 1.—**Cockerell, T. D. A.** The Coccid genus *Aulacaspis*, **9,** Mar., '02, xxxv, p. 58.—**Id.** New Coccidæ from the Argentine Republic and Paraguay, **4,** xxxiv, p. 88.—**Kuwana, S. T.** Coccidæ (Scale Insects) of Japan. Proc. Calif. Acad. of Sciences, vol. iii, No. 2, p. 1, San Francisco.—**Id.** Coccidæ from the Galapagos Islands,* **6,** x, p. 28.—**Lucas, R.** Rhynchota, **119,** ii, p. 822.—**Osborn, H.** Remarks on the study of leaf hoppers, **157,** ii, p. 224.—**Reuter, O. M.** Monog. generis *Tarisa* Am. et Serv.* Ofversigt af Finska Vetenskaps, Societ. Förhandlingar, xliii, p. 25.

NEUROPTERA.—Lucas, R. Neuroptera (Planipennia), **119,** ii, p. 820.

MECOPTERA.—Lucas, R. Panorpatæ, **119,** ii, p. 819.

ISOPTERA.—Gounelle, E. See Hymenoptera.

PLECOPTERA.—Lucas, R. Plecoptera, **119,** ii, p. 999.

EPHEMERIDA.—Lucas, R. Agnatha, **119,** ii, p. 1013.

TRICHOPTERA.—Lucas, R. Trichoptera, **119,** ii, p. 815.

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des chrysalides de *Papilio demoleus* et de *Danais chrysippus*, **86b,** 1900, p. 234.—**Chapman, T. A.** Classification of *Gracilaria* and allied genera, **9,** xxxv, p 81.—**Dodd, F. P.** Scent Organs of Hepialidæ, **9,** Mar., '02, p. 73. —**Dyar, H. G.** Descr. of a new Noctuid,* **4,** xxxiv, p. 105.—**Id.** Life Histories of North Amer. Geometridæ, xxxi, **5,** vol. 9, p. 336.—**Id.** The larva of *Carama cretata*, **6,** x, p. 54.—**Finn, F.** Birds attacking Butterflies and Moths, **10,** lxv, p. 415.—**French, G. H.** The yellow-winged Catocalæ, **4,** xxxiv, p. 95.—**Fruhstorfer, H.** Eine neue Lokalform der seltenen *Ag. amydonius* Stdgr., **45,** xiv, p. 327, March, 1902.—**Id.** Eine neue Agrias,* **45,** xiv, p. 351, Mar., '02 —**Grote, A. R.** Changes in the color of butterflies, **4,** xxxiv, p. 94 —**Id.** Note on *Ctenucha Cressonana*, **4,** xxxiv, p. 104. —**Id.** On the use of *Eupethecia*, **4,** xxxiv, p. 104.—**Joannis, J. de.** Description de trois Lépidoptères de Cav-Bang (Tonkin), **86b,** 1900, p. 280.— **Linden, M. Von.** Le dessin des ailes des Lépidoptères, Annales des Sci. Natur. Zoolog. and Paleont., Paris, p. 1, 1902.—**Lucas, R.** Lepidoptera, **119,** ii, p. 451.— **Mabille, R.** Descr. d' une Hespéride nouvelle (Costa Rica),* **86b,** 1900, p. 230 —**Quail, A.** Formation of pattern on eggshell of a species of Lepidoptera, **9,** Mar., '02, xxxv, p. 57.—**Poulton, E. B.** Birds attacking butterflies and moths, **10,** 65, p. 465, Mar. 20, '02.—**Sahlberg, J.** Trädgärdsnunnen (*Ocneria dispar* F.) funnen i Finland, **158,** 27, p. 94.—**Schaus, W.** A new species of *Dirphia*, **6,** x, p. 54.—**Seifert, O.** Contributions to the knowledge of N. American Arctiidæ 1, ii, **6,** x, p. 1.—**Smith, G.** Variation in the genus *Erebia*, **9,** Mar., '02, xxxv, pp. 69, 89.—**Smith, J. B.** New species Noctuidæ for 1901,* **6,** x, p. 33.—**South, R.** Gynandrous examples of *Amphidasys betularia*, **9,** Mar., '02, xxxv, p. 72.—**Standfuss, M.** Études zoologiques expérimentales sur les Lépidoptères, résultats principaux obtenus jusqu' à la fin de 1898 (pl. 1 – 3), **86a,** 1900, p. 82.—**Thomann, H.** Schmetterlinge und Ameisen. Beobachtungen einer Symbiose zwischen *Lycæna argus* L., und *Formica cinerea* Mayr., Jahresbericht der Naturforschenden Gesellschaft Graubündens, xliv, ii, p. 1.—**Woodworth, C. W.** Butterflies. Nature Study Bulletins, University of California.

DIPTERA.—Bergroth. Uber eine auf Eulen schmarotzende Hippobosicide, **158,** 27, p. 146.—**Corti.** Di un nuovo nematode parasita in larva di *Chironomus*. Reale Istituto Lombardo di Scienze E Lettere Rendiconti, Serie II, Vol. xxxv, Fasc. II-III, Milano 1902.—**Escherich, K.** Ueber den sogen. "Mittelstrang" der Insekten. Biol. Centralblatt, Leipsig, 15 Mar. '02, 179.—**Hine, J. S.** New or little known Diptera.* **157,** II, p. 228, Mar '02.—**Keiffer, J. J.** Monog. des Cécidomyides d'Europe et d'Algerie, **86a,** lxix, p. 181.—**Laveran.** De quelques parasites des Culicides. Comptes Rend. Soci. de Biologie, Paris, liv, 233, March 7, '02.—**Lécaillon, A.** Recherches sur la structure et le developpement postembryonnaire de l'ovaire des insectes.—1 *Culex pipiens L.* **86b.** 1900, p. 96 —**Pantel, J.** Sur le vaisseau dorsal des larves des Tachinaires, **86b,** 1900, p. 258.—**Needham, J. G.** A remarkable occurrance of the fly, *Bibio fraternus*, Loew, **3,** xxxvi, p. 181. –**Smith, J. B.** Life history of *Aëdes smithii*, **6,** x, p. 10.—

Stein, P. Die Zetterstedt'schen, Holmgren'schen u. Boheman'schen Anthomyidentypen des Stockholmen Museums, **38,** xxi, p. 29.—**Vaney, C.** Note sur les tubes de Malpighi des larves de *Stratiomys*, **86b,** 1900. p 360.—**Villeneuve, J.** Observations sur quelques types de Meigen, **86b,** 1900, pp. 157, 341, 363, 380, 402.—**Wandolleck, B.** Diptera, **119,** II, p. 759.

SIPHONAPTERA.—Rothschild, N. C. Some new nearctic fleas.* **21,** xiv, p. 62, March 15, '02.

COLEOPTERA.—Allnand, Ch. Contributions a la faune entomologique de la Région malgache, **86b,** 1900, p. 18 —**Bedel, L.** Notes synonymiques d'apres les types de la collection R. Oberthür, **86b,** 1900, p. 247.—**Bernhauer, M.** Zur Staphylinidenfauna von Madagascar, **45,** 1901, II, p. 161.—**Bourgeois, J.** Descr. de deux *Malacodermes* nouveaux de l'Amerique méridionale,* **86b,** 1900, p. 118.—**Croissandeau, J.** Monographie des Scydmænidæ, **86a,** lxix, p. 116.—**Dierckx, F.** Les glandes pygidiennes des coléoptéres (2nd mémoire), Carabides (Bombardiers, etc.), Paussides. Cincindelides, Staphylinides, **43,** xviii, p. 255.—**Fairmaire, L.** Descr. d'un nouveau genre de Coléoptères du groupe des Rhysopaussides **86b,** 1900, p 45. **Id.** Descr. de Coléoptères recueillis par M. H. Perrier de la Bâthie à Madagascar, **86b,** 1900, p. 85. **Id.** Descr. de quelques Coléoptères malgaches, **86b,** 1900, p. 134.—**Ganglbauer, L.** Die generische Zerlegung der Byrrhiden, Gattung *Pedilophorus*, **44,** lii, p, 92, Jan. '02.—**Heller, K. M.** Rüsselkäfer aus Ceylon gesammelt von Dr. W. Horn, **45,** 1901, II, p. 337. —**Herrick, G. W.** Notes on the life history and habits of *Oncideres texana*, **6,** x, p. 15.—**Horn, W.** Ueber Hrn. Prof. Kolbe's neues Coleopteren System, **45,** 1901, II, p. 13. **Id.** De 7 novis Cicindelidis, **45,** 1901, II, p. 353 —**Jacobson, G.** Chrysomelidæ Sibiræ occidentalis, **19,** T. xxxv, No. 2, p. 73, St. Petersburg.—**Kerville, H. G. de.** L'accouplement des Coléoptères, **86b,** 1900, p. 101.—**Lesne, P.** Revision des Coléoptères de la famille des Bostrychides,* **86a,** lxix, 473. **Id.** Notes synonymiques et rectificatives sur quelques Bostrychides, **86b,** 1900, p. 46.—**Léveillé, A.** Catalogus Temnochilidum (seu Trogositidum) inter annos 1758–1900 editorum, **86a,** lxix. p. 1.—**Meinert, Fr.** Vandkalvelarverne (Larvæ Dytiscidarum), Memoires de l'Académie Royale des Sciences et des Lettres de Danemark, Copenhagen, 1901.—**Melander, A. L.** A new Silphid beetle from a simple insect trap, **5,** vol. 9, p. 328.—**Münster, Ths.** Die norwegischen Arten der Familie Byrrhidæ (Cistelidæ Reitter) nebst Beschreibung eines neuen Genus und zweier Arten, **44,** lii, p. 87, Jan. '02.—**Ohaus, F.** Beitrag zur Kenntnifs der afrikanischen Popillien, **45,** 1901, ii, p. 257.—**Olivier, E.** Voyage de M. E. Simon au Venezuela (décembre 1887-août 1888) Lampyrides, **86a,** lxix, p. 62.—**Peringuey, L.** Notes sur certaines Cétoines (Crémastochilides) recontrées dans des fourmilières ou termitières avec description d'espèce novelles, **86a,** lxix, p. 66.—**Pesruches, L. C. des.** Description d'un nouveau genre et d'une espèce nouvelle d'Aphodiide et note sur le genre *Epilissus*, **86b,** 1900, p. 122.—**Peyerimhoff, P. de.** Sur la valeur phylogénique et le nombre primitif des tubes de Malpighi chez les Coléopteres, **86b,** 1900, p.

295.—**Pic, M.** Diagnosis de Coléopteres nouveaux **55**, Mar. 15, '02, p. 68 **Id.** Description du *Bruchus scapularis* (Reiche), du Brésil, **86b**, 1900, p. 29. **Id.** Notes synonymiques. **86b**. 1900, p. 230. **Id.** Descr. d'un nouveau genre d'Elmides, de Tunisie, **86b,** 1900, p. 266.—**Poppius, B.** Ueber die Entwickelung von *Phyllotreta amoraciæ* Koch , **158,** 27, p. 106.—**Raffray, A.** Descr. de deux Psélaphides nouveaux, **86b,** 1900, p. 305 —**Reitter, E.** Verschiedenes über die Coleopteren der Tenebrioniden Abtheilung Helopina, **45,** 1901, ii, p. 209.—**Sahlberg, J.** Coleoptera i Polartrakterna, **158,** 27, p. 96.—**Schilsky, J.** Synonymische und andere Bemerkungen zur Gattung *Apion*, **45,** 1901, ii, 365.—**Schwartz, O.** *Cremnostethus* und *Metriaulacus* nov. gen. Elateridarum. Ein Beitrag zur Kenntniss der Elateriden Gattung *Melanotus* Eschs.* **45,** 1901, ii, p. 197. **Id.** Neue Elateriden,* **45,** 1901, ii, p. 311.—**Sharp, D.** Coleoptera,* **15,** Vol. ii, pt. 1, pp. 625-632.—**Tschitschirine, T.** Observations sur quelques types de Stockholm (Coleoptera-Carabidæ), **19,** T. xxxv, No. 2, p. 160, St. Petersburg. **Id.** Description de quelques nouvelles especes de la tribu des Platysmatini, **19,** T. xxxv, No. 2, p. 1, St. Petersburg. **Id.** Note sur quelques Platysmatini nouveaux on peu connus, **19,** T. xxxv, No. 2, p. 49, St. Petersburg. **Id.** Genera des Harpalini des regions palearctique et palearctique, **19,** xxxv, No. 2, p. 217, St. Petersburg.—**Tutt, J. W.** Migration and Dispersal of Insects : Coleoptera, **21,** xiv, p. 73, Mar. 15, '02.—**Weise, J.** Afrikanische Hispinen, **45,** 1901, ii, p. 225.—**Xambeu.** Mœurs et métamorphoses du *Telephorus obscurus* L. Coleoptera du groupe des Mollipennes, **55,** Mar. 15, '02, p. 69.

HYMENOPTERA.—Ashmead, W. H. Classification of the Fossorial, Predaceous and Parasitic Wasps, or the superfamily Vespoidea (iv), **4,** xxxiv, p. 79.—**Bordas, L.** Sur le revetement épithélial cilié de l'intestin moyen et des cæcums intestinaux chez les insectes (Hym. Orthop.), **86b,** 1900, p. 25.—**Buysson, R. Du.** Sur quelques Hyménoptéres de Madagascar, **86a,** lxix, p. 177.—**Cameron, P.** On some new genera and species of Hymen. (Ichneumonidæ, Chrysididæ, Fossores and Apidæ), **9,** xxxv, p. 108.—**Cockerell, T. D. A.** and **Atkins, E.** XXXIX. Contributions from the New Mexico Biological Station. XII.—On some genera of Bees, **11,** (7) 9, p. 230.—**Gounelle, E.** Sur des bruits produits par deux espèces américaines de Fourmis et de Termites, **86b,** 1900, p. 168.—**Harrington, W. H.** A Canadian Anoplonyx.* **4**, xxxiv, p. 93.—**Keiffer, J. J.** Note sur le genre Pristaulacus, **86b**, 1900, p. 338.—**Kokujew, N.** *Color semenowi*, gen. et sp. nov. (Hymenoptera Ichneumonidæ), **19,** T. xxxv, No. 2, p. 210, St. Petersburg. —**Lucas, R.** Hymenoptera, **119**, ii, p. 321 —**Marchal, P.** Sur un nouvel Hyménoptère aquatique, le *Limnodytes gerriphagus* n. gen. n. sp., **86a,** lxix, p. 171.—**Meunier, F.** Sur les *Mymaridæ* de l'ambre et du copal, **86b,** 1900, p. 364.—**Terre, L.** Sur l'histolyse musculaire des Hyménoptères, **86b**, 1900, p. 23.

Doings of Societies.

A regular meeting of the Chicago Entomological Society was held in the John Crerar Library Thursday evening, March 20, 1902, at 8 o'clock. Seven members present, with President Longley in the Chair. Visitor, Mrs. Westcott.

The subject chosen for discussion at next meeting was "Edible insects and products of insects useful to man." Talk to be led by Mr. John Healy. Mr. A. Kwiat read an interesting paper on the small Catocalæ, in which he attempted to straighten out their classification. President Longley also showed some Catocalæ, and Prof. Westcott exhibited *Catocala messalina*.

JOHN ADAMS COMSTOCK, *Secretary*.

At the March meeting of the Feldman Collecting Social held at the residence of Dr. Henry Skinner, 716 North 20th Street, eleven persons were present.

Prof. Smith reported some investigations on a scale insect infesting rose, blackberry and raspberry bushes, known as *Diaspis rosæ*. This insect winters in all stages of growth, an unusual condition in the insecta. In January were found stages from half grown to fully developed males and females, the latter with embryos. The anatomy of the piercing mouth parts, consisting of three lancets, was described.

Mr. H. Wenzel exhibited fifteen specimens of Cychrus, including *stenostomus*, *canadensis*, *LeContei* and *bicarinatus*, in order to illustrate the intergradation of these forms, which showed to his satisfaction that the whole series represented but one species. He also referred to specimens of *Cicindela* collected at Vowells Mills, Louisiana, all of which are immaculate forms of several known species.

Variation and geographical forms were discussed by Messrs. Wenzel, Smith and Skinner. Dr. Skinner referred to the difficulty of studying Argynnis from our present knowledge and spoke of the necessity of biological data in this connection. Mr. Laurent stated that the true *Cicindela longilabris* and the variety *laurenti* do not seem to commingle, the variety keeping to the woods, whereas the typical form occurs along roadways.

Mr. Daecke exhibited a specimen of *Dichelia sulfureus* which he had found on *Lemonium Carolinianum*. Also a specimen of *Crabro trifasciatus*, which had tunneled into a sumach stem. In the same tunnel he had found a dipterous pupa.

Dr. Skinner exhibited a drawer of Pamphila containing five or six named species which he believed to be only varieties of one form, belonging to the *comma*-group.

WILLIAM J. FOX, Secretary.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held March 27th. Mr. Laurent, Director, presiding. Eleven persons were present. Dr. Skinner exhibited a mass of small shells held together by the cocoon of a lepidopterous larva. Mr. Green exhibited specimens of *Physonsta unipunctata* with their larvæ, from Boonton, N. J. The species is new to New Jersey. Mr. Johnson spoke of an interesting Dipterous insect (*Tachytrechus binotatus*), in which the long slender arista bears a middle and terminal disc-like node; in this respect it resembles the European genus *Sybistroma*. It was captured by Mr. George M. Greene at Durham Pond, Morris County, N. J., and has not hitherto been recorded from the State. Mr. J. C, Bradley exhibited some interesting insects from Haiti. Mr. Laurent showed an aberration of *Colias philodice* ♂ with the neuration jet black. It was taken by James Gillen, at Ambler, Montgomery County, Pa., during the fall of last year. Mr. Laurent also exhibited the Coleoptera he took in Florida last winter and spring; 418 species were found, most of them being taken at Miami, Dade County. *Chlænius floridanus* Horn, taken at Enterprise, was specially mentioned. *Cicindela tortuosa* was seen in large numbers and fairly swarmed. The plant from which he had bred *Lagochirus araneiformis* was also shown. Some of the smaller species had been mounted by Mr. Charles Boerner. Mr. J. C. Bradley was elected a member of the Section.

HENRY SKINNER, *Recorder*.

H. Mansel, lith. Boston

SPADICARIUS. A.G. Weeks.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. JUNE, 1902. No. 6.

CONTENTS:

Our plate (VII) represents a species from Bolivia, described by Mr. Weeks in the Proceedings New England Zoological Club, Vol. 2, p. 72, 1901.

Three New Anthidiinae from Colorado.

By E. S. G. TITUS, Urbana, Illinios.

Anthidium pondreum n. sp.

♂.—Form and general appearance of *atrifrons* Say; black with deep yellow markings; closely punctured; pubescence white, very dense on face and pleura, sparse on cheeks and basal segments of abdomen, tufted at sides of other segments; venter polished, but segments narrowly pubescent at sides; femora, tibiæ, and first joint of tarsi anteriorly, thorax above and occiput with sparse ochraceous pubescence; ferruginous pubescence on inside of tarsi; the clypeus (except two black dots at base), anterior orbits of eyes half way up, spot behind summit of eyes, mandibles except ferruginous tips, anterior half of tegulæ, line beneath, spot on each side of anterior portion of mesothorax, line and before it a dot on each side of scutellum,

spots on posterior femora, tibiæ and first joint of tarsi anteriorly, bands on dorsal abdominal segments 1–6, interrupted in middle on 1–5, notched anteriorly on each side are all yellow; last segment with two large yellow spots, first segment notched sublaterally behind, sixth segment with a spine on each side, last segment deeply notched with a blunt black tooth in the center. Length 11 mm.

Described from two males, June 16, on *Astralagus* sp., at Fort Collins, Colorado. Differs from *atrifrons* Say by the yellow markings, scape entirely black and different shape of last abdominal segment.

Protanthidium cockerelli n. sp.

♂.—Large, broad, robust; in general appearance resembles some *Anthophora;* clypeus, face on each side narrowly continued above the base of the clypeus, mandibles, except tips, *white:* a line behind upper part of eye, two spots on scutellum posteriorly, ends of four anterior tibiæ on the outside, outer edge of posterior tibiæ, line on inside of anterior femora, first joint of tarsi, segments 1–6 of abdomen, dorsally with continuous bands slightly notched anteriorly in center of five and six, band broad on sixth segment, last segment with a small spot at tip; all *dark yellow;* rather coarsely and deeply punctured; pubescence dull ochraceous, sparse; scutellum slightly produced behind and somewhat bilobed; last dorsal segment of abdomen truncate, excepting a short obtuse tooth in the middle; *labial palpi* with *second joint scarcely longer than first; maxillary palpi distinctly three-jointed;* venation as in *Anthidium s. str.* Length 16 mm.

Described from two males; Rocky Ford, August 10, 1897 (Gillette); and Virginia Dale, Colo., (alt. 8000 ft.), Sept. 3, 1899 (Titus), on *Rudbeckia hirta* L. The types are in the Colo. Agr. College Museum at Fort Collins, Colo.

This species is somewhat related to *occidentalis* as determined by Prof. Cockerell; differs in color of pubescence and markings, and in position of markings on abdomen, is also broader and larger generally. The peculiar bilobate scutellum distinguishes this from any species I have seen. Though *Prothanthidium* Ckll. has for its type a bee from India, *P. steloides*

(Bing.), the species above described seems to answer all the generic characters given by the authors of the genus.

I take pleasure in dedicating this species to Prof. T. D. A. Cockerell.

Dianthidium balli n. sp.

♀.—Black; with dark rich yellow markings, head and thorax densely uniformly punctured, abdomen with punctures of *apical margins* of segments dorsally smaller and denser than on *basal* margins; the clypeus, excepting an inverted T in the middle, anterior orbits of eyes narrowed at tip above and line leaning away from eye; wide line continuous over occiput and extending down about half way on each side; spot on posterior orbit about half way up from end of line to base of eye; line on each side of mesothorax, tegulæ anteriorly, spot below, four short lines at scutellum, apical ends of posterior and middle femora, tibiæ and first joint of tarsi anteriorly, *all dark yellow;* remainder of tarsi ferruginous; tip of tibiæ exteriorly with a ferruginous spot on the middle, anterior tarsi strongly ferruginous, a short blunt spine at apex of first segment; claws partly black; bands on segments 1–5 narrowly interrupted in the middle and that on first segment notched laterally behind, on last segment broadly interrupted in the middle, *yellow;* last segment deeply notched behind with a shallower notch on each side; pubescence on face, cheeks, occiput and thorax above, *ochraceous;* pleura densely, base and venter of abdomen and legs, except tarsi, with *white* pubescence; tarsi ferruginously haired; dorsal abdominal segments above with scattered white pubescence; wings smoky, tips less densely so; second recurrent nervure entering close behind end of second submarginal cell. Length 14 mm.

Described from one female specimen taken at Ridgeway, Colo., July 31, by Prof. E. D. Ball, after whom I have named it. This species is quite close to *venustum*, but differs in color, markings and their positions and is larger. The labial and maxillary palpi show this to belong to the genus *Dianthidium* Ckll.

NOTE—The above descriptions are extracted from an unpublished thesis of the author's deposited with Sec'y State Board of Agriculture of Colorado, May 1, 1901.

Description of an Apparently New Species of Palindia.

By W. J. HOLLAND.

Through the kindness of Mr. H. D. Merrick of New Brighton, Pa., I have been permitted to carefully examine a specimen of the genus *Palindia* captured by him last year flying among low herbage in the outskirts of the town of New Brighton. I have carefully examined the literature of the subject and am inclined to believe that we are dealing with a new species of the genus, although the specimen in certain respects comes very near to *Palindia mabis* Guénée, which is a synonym for *Palindia fumata* of Felder and Rogenhofer. There is no traffic between New Brighton and tropical America, so far as is known, unless it be in tropical fruits. There is a bare possibility that the insect may have been imported from the South, but the specimen presents the appearance of having freshly emerged and is in good condition. It is altogether improbable that so frail a creature should have, by the action of the wind, and by the powers of flight, been transported from the tropics to the locality where it was captured.

Palindia merricki sp. nov.—Front, palpi, collar, thorax and tegulæ dark wood brown; upper side of abdomen paler wood brown; lower side of thorax and abdomen ashen gray. Legs concolorous, the tarsi white, ringed with black. The primaries are brown, more or less irrorated with purplish scales, clouded near the middle with a dark purplish shade and laved on the outer margin with the same color. There is a dark basal line which extends from the costa to the median vein. The transverse anterior and median lines run obliquely from the costa to the inner margin, very nearly parallel to each other, the transverse anterior terminating about the middle of the inner margin, the median line terminating just before the inner angle. The median line is defined externally by a pale yellow line running from the lower margin of the cell toward the inner angle, and this line is in turn defined externally by a narrow dark brown line. At the end of the cell there is a large pale reniform spot surrounded by a dark brown line. The transverse posterior line is sharply angulated below the costa and then runs from the costa to the inner angle, constantly diminishing in width. Between this and the subterminal line are some reddish shades. The subterminal line is more or less obscure, angulated inwardly just below the costa and on vein 2. At the points where this line is bent inwardly, and half way between these points, are dark brown shades produced inwardly. The marginal line is

black, relieved by a series of bright yellow dots at the extremity of each of the veins. The fringes are dark wood brown. The posterior wing on the upper side is dark wood brown. The wing is sharply produced at the extremity of vein 3. About the middle of the wing below the cell a series of pale blue parallel lines, succeeded by an irregular median line, which does not run to the costa, but originates beyond the cell, curves first downwardly and then outwardly to vein 3. Between veins 3 and 2 it forms an angle with its point directed towards the base, and then sweeps, by a regular curve, inwardly to the inner margin. This line is defined outwardly and inwardly by fine pale yellow lines. In the angle between veins 2 and 3 is a dark black triangular spot defined externally by a white patch and irrorated with bluish scales. This patch is succeeded by two small black points connected by a fine silvery white bar which is a portion of the submarginal line, which is interrupted with a dark shade at the point where the wing is externally produced at the extremity of vein 3. The marginal line is very fine, silvery white. The fringes are of the same color as on the upper wing. Both wings on the under side are gray clouded outwardly with dark fuscous. In both the dark transverse posterior lines of the upper surface are reproduced faintly, most conspicuously on the lower side of the secondaries, where the line is crenulate. There are a few minute white spots at the exremity of the subcostal nervures on this side.

Expanse 34 mm.

Type in collection of H. D. Merrick, New Brighton, Pa.

The Three Californias.

By F. E. Blaisdell, M.D.

To Prof. H. C. Fall is due the credit of the awakening that has taken place among the Californian Entomologists. In his recent and excellent effort* he has shown how interesting and stimulating a preliminary list may be, and besides he has exposed the inaccuracy of much of the previous work that has been done within the State.

Knowledge to be useful must be accurate; it necessarily follows that observers and recorders of biological data must be painstaking, and endeavor to eliminate error in order to place such data upon the altar of scientific perfection.

Unfortunately we have to attain precision—it is not born

* List of the Coleoptera of Southern California, with notes on Habits and Distribution (occasional papers of the Cal. Acad. Nat. Sci.).

with us. Careful work bears a stamp that is unmistakable; carelessness sees the fruits of its labors relegated to the last page of a memoir, reserved for doubtful data and unrecognized species.

Earlier observers lacked the facilities and modes of research that now smooth and render comparatively easy, the work that was once achieved by overcoming apparently insurmountable obstacles, that met the pioneers in our favorite field of research.

Who will say that the pleasure they enjoyed in opening up new faunas did not repay them ten-fold for their privations?

In those days it was sufficient to label a specimen Calif. Times are changed. California was as large a State then as now, stretching north and south for the distance of 700 miles, and as Dr. Edw. C. Van Dyke has said: "It is a land of many climates and faunas."

It is cold and damp in the north; hot and dry in the south, with an intermediate or middle portion partaking of both of its extremes. Thus it is customary to speak of Northern, Southern and Central California. The question has recently been raised, where does the one begin and where does the other leave off?

The locality labelling of most any collection that contains Californian specimens will be mute evidence that this question has never been answered. There being no definite boundaries to the three divisions of California just mentioned, we do not know positively what part of the State is really meant when a specimen is labelled Central Calif.

How is this to be remedied? How are past errors to be corrected? Prof. Fall partially gave an answer when he said: "Briefly described, the term Southern California includes that part of the State lying to the south and east of a line drawn from Point Conception eastward along the Santa Inez Mountains, then curving to the north and east around the southern end of the San Joaquin Valley, and along the desert slopes of the Sierra Nevada Mountains through Kern and Inyo Counties to the Nevada State line."

The author realized that it was impossible to draw a true

interfaunal line, it is an effort at approximation. It fills a long-felt want, whether it was ever before realized or not—it gives definite boundaries to Southern California, and is a step towards more recent knowledge.

To a most worthy veteran in the field of entomology—Mr. Chas. Fuchs—belongs the honor of giving the impetus that completed the answer to the above question; that brought about a discussion of the distribution of insects at the second regular meeting of the Calif. Ent. Club, which resulted in the reading of able papers at its third regular meeting on February 22nd.

As a result it was unanimously agreed to accept the divisional line suggested by Mr. Ralph Hopping for defining the boundary line between Northern and Central California, namely :—The term Northern California includes that part of the State lying to the north of a line drawn from the Golden Gate, following the Bay of San Francisco to the mouth of the San Joaquin River, thence along the northern boundaries of San Joaquin, Calaveras and Alpine Counties, to the Nevada State line; that the term Central California includes the intermediate part of the State lying between Hopping's line on the north, and Fall's line on the south.

By this act the boundary lines of Northern, Central and Southern California are definitely fixed.

The State faunal areas are unaffected by this division, and acquire new relatives, which will be ably treated at a later date.

Mr. Fuchs recommended that the Secretary of the Club publish an article calling the attention of entomologists at large to the fixing of definite boundaries for the three Californias, and that collectors and writers upon Californian entomology be urged to conform their future observations and writings to these—the latest efforts at accuracy in the study of geographical distribution and intra-State faunas.

This act and article are approved by the following members present at the third regular meeting of the California Entomological Club, held on the evening of February 22, 1902. Chas. Fuchs (*President*), Edw. Ehrhorn, Beverly Letcher, J. C. Huguenin, James W. Cottle, F. E. Blaisdell (*Secretary*).

Four New Species of Butterflies From South America.

By LEVI W. MENGEL, Reading, Pa.

(See Plate VIII)

Anatole modesta sp. nov.—Upper surface of fore wings generally white and variable shades of brown. The costal edge is very light brown, terminating half-way to the apex; broadest at the base. A patch of the same color, edged with white toward the exterior margin, appears three-quarters the distance to the apex. A row of spots, a shade darker, extends along the exterior margin, almost to the inner angle. The exterior edge is tipped at several places with white. A silver gray coloration appears at the base of the wing and extends along the interior margin half-way to the angle. A row of small, well marked light brown spots, white in color, extends across the the wing just within the marginal light brown spots from the costa to the interior margin. All the white and light brown markings are surrounded with very dark brown, except at the interior margin, where the white marks reach the edge and spread toward the angle. The same colors prevail on the posterior wings, with the white predominating. From the base a dark brown band extends half-way to the apex. Towards the base and adjoining the dark band the same silvery gray color as in the fore wing appears, spreading toward the inner margin, but fading to white. The white extends two-thirds across the wing from the anterior margin to the inner margin. The remaining portion of the wing is dark brown, darkest at the angle and fading toward the anal angle to very light brown. White and light brown spots are scattered through the dark marginal bands. Wings emarginate, tipped here and there with white. Undersides in both sexes, tawny and white. The dark brown and lighter color being replaced with tawny. Abdomen and thorax very dark above; white underneath. Markings of the female very much like male. The brown and light colors being replaced by a gray-black, almost uniform. There are but very few pale brown spots. The white band is more decided in the female. Female is one-eighth inch larger than the male.

Expanse, one and three-eighths inch.

Habitat.—Sapucay, Paraguay.

Apodemia ochracea sp. nov.—General colors, black and ochreous yellow, marked with white spots. Uppersides, base of fore wings uniformly ochreous; the color extending one-third along the anterior margin to the apex and half-way to the inner angle, along the inner margin. A black patch somewhat quadrangular in shape almost surrounded by ochreous is observed on the anterior margin. A well marked white spot appears in the black patch. A broad band of the ochreous color reaches almost from the anterior margin to the color of the base with a single white spot close to the margin. The inner edge of this band forms the

FOUR NEW SPECIES OF BUTTERFLIES FROM SOUTH AMERICA (MENGEL).

ANATOLE MODESTA.
ANATOLE MODESTA.
APODEMIA OCHRACEA.
BÆOTIS BIFASCIATA.
NECYRIA GERHARDI.

boundary of the black patch above mentioned. Balance of wing black marked along the outer margin by a band of ochreous spots. A row of white well defined spots extends from the outer portion of the anterior margin almost to the inner margin. This band begins three-quarters the distance from the base towards the apex. Inferior wings, black, marked by a well defined ochreous band beginning almost at the anterior margin and extending in a curve to the inner margin. There is a marginal band of ochreous color extending along the lower half of the exterior margin to the apex. Undersides very much lighter. The ochreous of the uppersides replaced by much lighter color, almost light yellow. The row of white spots of upper sides larger and better defined as is also the marginal band. Two black spots are seen in the yellow near the base. Posterior wings marked by a band of very pale yellow, extending across the middle of the wing from the anterior margin curving to the inner margin. Base black, variously marked with white spots. A row of white spots is seen in the black, reaching from the apex to the inner margin just above the margin. There is a marginal band of yellow spots along the outer margin. The yellow band in the posterior wings is broken by the nervules, which are black. Thorax and abdomen black. Abdomen marked by a yellow stripe along the sides. Collar yellow.

Expanse, one and three-eighths inch.

Habitat—Sapucay, Paraguay.

Bæotis bifasciata sp. nov.—Color above uniformly black with buff bars and spots, well marked. Extending from the interior margin, one-third to the inner angle from the base, a diagonal narrow bar of buff extends to the costa, not quite reaching the margin. Three-quarters the distance from the base to the apex, a narrow bar passes from the costa toward the inner angle, stopping half way across the wing. Two-thirds the distance from the base to the angle a small narrow bar extends from the inner margin towards the apex, one-fourth the distance to the apex. A small well defined spot appears at the inner angle; also one in the middle of the exterior margin. Lower wings. One-third the distance from the base to the apex, a bar extends from the anterior margin to the inner margin. Two-thirds the distance from the base to the apex, another bar passes parallel to the first from the anterior to the inner margin. Anal angle marked with a well defined spot. Another spot appears in the middle of the exterior margin. Female like male, buff markings stronger. Undersides same as above. Body uniformly dark approaching black.

Expanse 1 inch.

Habitat.—Sapucay, Paraguay.

Necyria gerhardi, sp. nov.—Superiors black, with a bar of metallic green, extending from the costa to the inner angle. Bar begins half way from the base to the apex. Inferiors black with a bar of the same metallic green extending from the apex almost to the inner angle. A large

bright red spot appears at the inner angle. The bars on both the superior and inferior wings are interrupted by the nervules, which are black. The undersides of the superiors uniform dark iridescent blue, covering the entire wing, except the apex and the exterior margin, which is black. Inferiors iridescent purple almost to the margins. A row of arrow shaped metallic green spots extends from the apex to almost the inner angle. The red spot seen on the upper side is larger and much more intensified. Thorax and abdomen black above, abdomen red beneath.

Expanse, one and five-eighths inch.

This species is nearest to *N. diva Stgr.*, but differs from it entirely.

Habitat.—Chauchamayo, Peru. Named in honor of Wm. J. Gerhard, Chicago, Ill.

Notes on the Acroceridae.*

By A. Leonard Melander.

Because of their brilliant color, anomalous structure and rare occurrence, the flies of the family Acroceridæ have generally been considered the *raræ aves* of the insect world. As but few collections in this country contain over a half dozen species, and scarcely any more individuals, the advent of a new form is heralded with interest. The following notes are made from specimens in the collections of Dr. Wheeler and myself.

1. **Oncodes costatus** Loew.

This seems to be the only representative of the family that occurs at all commonly in the northern States. It is readily recognized by the broad pale yellow bands extending across the fuscous abdomen. Specimens from Wisconsin and Ontario are in the collection.

2. **Oncodes** sp. indeterm.

An apparently undescribed species of *Oncodes* occurs in Pennsylvania. This form, which was taken by Mr. H. G. Klages, differs from the preceding in the wholly yellow color of the body.

3. **Oncodes eugonatus** Loew.

A specimen from Austin, Texas, taken in grass-sweepings,

* Contrib. from the Zool. Lab., Univ. of Texas, No. 31.

differs from the specimen Dr. Loew received from Mr. Belfrage, and taken some hundred miles north of here. The differences, however, do not seem to be of specific importance. In the Austin form the white bands of the abdomen are narrow, but clear cut, of uniform width, and only one-tenth as wide as the remaining shining black of the segments. The venter is similarly colored, although from the convexity of the abdomen, the white bands seem comparatively wider; the first ventral segment is black, with the narrow apical margin whitish. The knees, tibiæ and base of the tarsi are almost wholly pale fuscous, the darker coloration of the upper side of the tibiæ apparently less evident than in Mr. Belfrage's specimen. Instead of possessing a black margin the tegulæ are wholly translucent whitish. The base of the wings is lightly infumated.

4. **Acrocera** sp.

A very beautiful and brightly marked, but undetermined species was taken by Mr. F. Rauterberg at Rochester, Wisconsin. Although it agrees in part with *A. liturata* Williston from Washington, I prefer to pass this species by, as I have access to but a portion of the literature on this genus.

PTERODONTIA Gray.

Scutellum wholly testaceous . . . . . **flavipes** Gray.
Scutellum wholly or largely black . . . . . 2.
2. Discal cell closed; larger species (5 mm.) . . . . . **misella** O. S.
Discal cell open; species measuring 4 mm. . . . . **analis** Westw.

5. **Pterodontia analis** Westwood.

Several specimens of this species were taken on leaves of low trees in the damp woods about Wood's Hole, Massachusetts. The determination is doubtless correct, although the northern specimens disagree with the description in that they have wholly black eyes, almost blue-black, tegulæ with the disc but little translucent, and black femora. *Pt. flavipes* is said to be commoner in the Eastern States, but we have never met with it.

6. **Pterodontia misella** Osten Sacken.

A typical specimen from Alameda Co., California.

OPSEBIUS Costa.

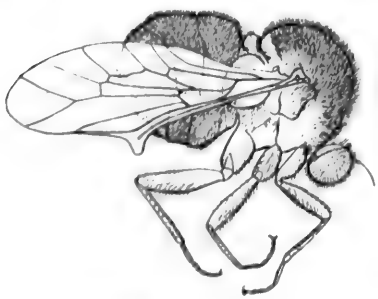
Wings with a prominent tooth; anal cell widely open . **agelenæ** sp. nov.
Costa nowheres projecting . . . . . 2.
2. Wings with a blackish tinge . . . . . 3.
Wings with a testaceous tinge . . . . . 4.
3. Anal cell open; third posterior cell longer than the fourth.
sulphuripes Loew.
Anal cell closed; third posterior cell shorter than fourth.
gagatinus Loew.
4. Wings pale at base and tip . . . . . **diligens** O. S.
Wings unicolorous . . . . . **paucus** O. S.

7. **Opsebius sulphuripes** Loew.

One specimen, Alameda Co., Calif.

Although from a State so distant from the locality type (New York), this specimen shows no important differences. The antennæ are piceous, however, the hind margin of the wing is scarcely paler, and the anterior (smaller) cross-vein is oblique; but aside from these, the form seems to be identical with Loew's species.

8. **Opsebius agelenæ** sp. nov.—♂. Length 6 mm. Of a shining semi-metallic, bronzed, blackish brown ground color, densely clothed with long fulvous pubescence, excepting (in the Texan form) the eyes, which are clothed with black hairs. Antennæ short, consisting of two minute oval fuscous joints, the outer smaller, the terminal slender, fuscous arista three times as long as the antenna. The hairs of the abdomen become a little sparser apically, but are still uniformly fulvous. Tegulæ translucent hyaline, the narrow margin testaceous. Halteres testaceous. Coxæ concolorous with the body, legs uniformly testaceous, the tips of the claws black. Wings clear hyaline; the marginal and first submarginal cells tinged with yellowish, veins pale yellow; the costa strongly thickened, angulate at the middle of the marginal cell and there bearing a large blunt projection; two submarginal cells and four posterior cells, the first posterior cell divided in two beyond the discal cell, but the position of the cross-vein inconstant; anal cell of even breath toward the tip, broadly open.



Opsebius agelenæ n. sp.

Described from two male specimens from Austin, Texas, and one male from Rochester, Wisconsin.

One of the Texas specimens was found under a stone, entangled in the web of the southwestern variety of *Agelena nævia* Bosc., apparently just after issuing from the body of the spider. The shrivelled spider was lying close by, with a round perforation near the base of the under side of the abdomen.

Were it not for the great variability in the neuration of the members of this family, this species might be thought out of place in *Opsebius*. As it, however, presents the characteristic habitus, the discrepancies in the costal tooth and widely open anal cell are insufficient to exclude it from the genus. Moreover, we may recall that in *sulphuripes* the anal cell is narrowly open, showing a trend in the directlon of *agelenæ*, while in *Pterodontia* the costal projection is quite variable in size, and even in *Opsebius diligens* the costa shows a thickening beyond the first vein.

9. **Eulonchus smaragdinus** Gerstaecker.

Two green females, measuring 8 and 10 mm., were taken in Marion Co., Calif.

10. **Eulonchus sapphirinus** Osten Sacken.

One male from Marion Co., Calif.

11. **Eulonchus tristis** Loew.

As this species seems to be relatively common in Idaho, according to Prof. Aldrich, *Eulonchus* can no longer be regarded as exclusively a Californian genus. The males have the third joint of the antennæ sharp at the apex; in the female it is scarcely attenuate and rather blunt. One female from Marion Co., California, has the abdomen brassy green; a pair from Idaho (Juliaetta and Craig's Mt.) are blue-black. There is a great inconstancy in the juncture of the veins beyond the tip of the discal cell. In the California specimen the vein separating off the second submarginal cell is angulated near its base, and bears a short spur at the angulation; while in the Idaho specimens this vein is evenly bisinuate, although it bears a similarly-placed short spur. The males have the second submarginal cell petiolate at the base; in the female it is pointed

but nearly sessile, the very short petiole thickened; while outwardly the bounding veins of this cell diverge rather prominently, not being parallel as in the male.

12. **Ocnæa helluo** Osten Sacken.

A specimen of this large species was taken entangled in a small spider-web at Marble Falls, Texas. As it presents the same differences in neuration as does the specimen mentioned by Dr. S. W. Williston (Trans. Am. Ent. Soc., XIII, p. 294), in that the outer first posterior cell is but slightly narrowed towards the margin, we are led to believe that Osten Sacken's specimen was a sport. The blue-black body, black coxæ, and shortened abdominal fasciæ are but a slight variation from the type which I have examined, and which otherwise is quite similar.

As nearly all the foregoing insects differ from the types, we are brought to realize the instability of characters in this family, and to notice that individual variation is strikingly prominent.

THE GENUS *Lithurgopsis*.—I would add two remarks to the interesting paper by Mr. Fox in your May number: (1) *L. echinocacti* is best distinguished in the ♀ from *apicalis* by the face being more narrowed below and the distance between the prongs of the facial prominence less. (2) I will accept Mr. Fox's identification of *L. gibbosus*, although Smith's description appears to agree equally well with my insect. The form I called *gibbosus*, with the dark hair on end of abdomen, may stand as *L. apicalis* var. *opuntiæ*, since it is a fairly distinct geographical race.

I may also note that Mr. E. E. Green has discovered that *Pseudolecanium* is a synonyn of *Aclerda*, so Mr. Kuwana's species (p. 134) becomes *Aclerda distichium*.—T. D. A. COCKERELL.

NOTE ON LITHURGOPSIS.—Since my article on *Lithurgopsis* appeared in the May issue of ENT. NEWS, Mr. T. D. A. Cockerell has written to me saying that the labial palpi of that genus are 4-jointed, and not 3-jointed as stated by me. I have examined these palpi again and concur with Mr. Cockerell's statement. The third joint is easily missed, appearing in line with the second, but if the specimen is carefully examined the two joints are seen to be well differentiated.—WILLIAM J. FOX.

A New Papilio.

By Henry Skinner.

P. polyxenes Fabr. var. **curvifascia** n. var.—Primaries of the male on the upper and under surfaces practically identical with *polyxenes*, except that the spots are larger and have more of an orange tinge. Secondaries above as in *polyxenes*, except that the orange spots of the mesial band are practically all of the same size and shape. The first three are nearly round and the next three slightly ovoid; the last one, preceding a mere line, is quadrate. There is an entire absence of any spot in the discal cell. The band of spots crossing the centre of the wing forms a distinct curve, with the concavity inward, while in *polyxenes* the band makes a straight line, and the inner edge of the spots makes a straight line. This band is the same on the underside of the wing, except that the spots are washed with a brick-red color.

The female is exactly like the male in markings, except that the spots on the primaries are lighter in color. The tails to the hind wings are shorter than in *polyxenes*, and the tails of seven specimens measure in length 5.5, 6, 6.6, 7, 9 mm. respectively.*

Described from six males and one female from Rincon, New Mexico, taken June 1, 1898, and kindly submitted for examination by Mr. Geo. Franck, of Brooklyn, N. Y. Mr. Franck said some of them suggested *Papilio indra*, but others had longer tails. They are very close to *brevicauda* found in Anticosti and Newfoundland, and show the same likeness of the sexes. It may be of interest to state that Godman and Salvin in the Biologia Centrali-Americana put *asteroides* Reakirt as a synonym of *polyxenes* Fabr. and properly so. The type (so marked) is in the collection of the American Entomological Society, and agrees perfectly with Reakirt's description. Strecker's figure does not represent this insect. The type specimen of *asteroides* in simply an inconstant and accidental variation, and a collector could take a dozen equally as aberrant wherever the species is common.

I have seen lately in the collection of Mr. George Franck, the following species of Hesperidæ caught within the limits of the United States and heretofore unrecorded.

Thespieus macareus Herr.—Schäff. From Marco Island, Florida.
Prenes Nero Fabr. Marco Island, Florida.
Prenes ares Feld. Cochise Co., Arizona.
Epargyreus exadeus Cramer. San Luis Obispo, California.

Henry Skinner.

* Measured from tip of tail to end of nearest marginal lunule.

Two New Texan Ant and Termite Guests.*

By Charles Thomas Brues.

(See Plate IX.)

Scarcely any method of entomological collecting yields a more varied and remarkable harvest of insects than the examination of ants' nests and their contents. As this is especially true of the warmer regions of our country, Texas is not without its full share of strange Myrmecophiles and Termitophiles.

The two remarkable species herein described, which were collected in the vicinity of Austin, Texas, add two genera to our fauna and serve well to indicate what a wealth of interesting forms we may expect to unearth in the future in similar locations.

STAPHYLINIDÆ.

ECITOXENIA Wasmann.

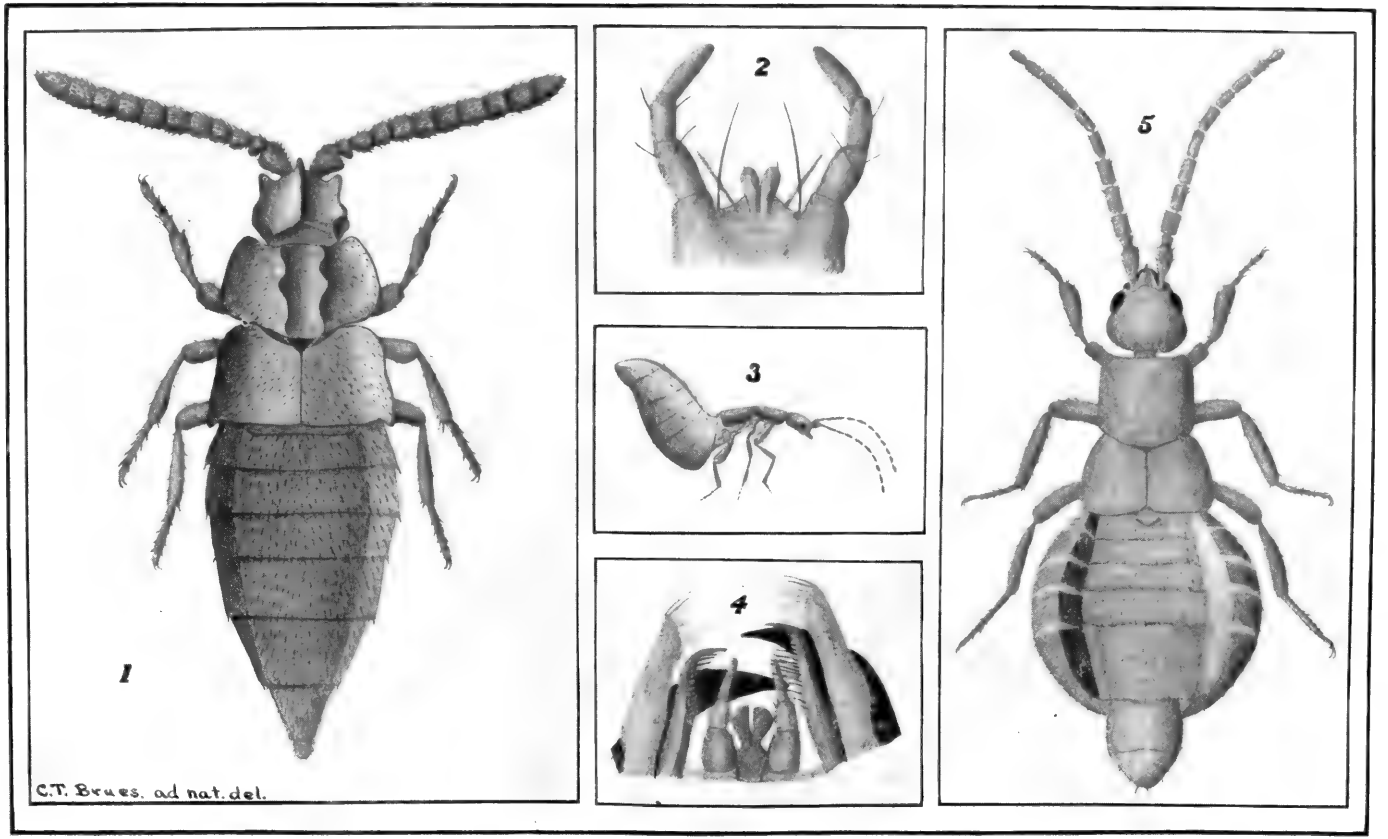
A beetle referable to this genus was collected in considerable numbers by Mr. A. L. Melander and the present writer in a nest of *Eciton schmitti* Em. On one of our entomological excursions, one afternoon during the past winter (January, 1902), we chanced upon a large colony of the *Eciton* clustered beneath a flat stone. On examining the nest more closely, we succeeded in discovering at least four different species of Myrmecophiles which we had previously seen,† besides one which was unfamiliar to us. The latter was quite agile in its movements, although, unlike most Ecitophiles, it possesses extremely short legs. Its flat body seemed almost to glide along on the surface of the stone, as it picked its way among the excited groups of ants.

In its general habitus this beetle greatly resembles the Brazilian *Ecitoxenia mirabilis*, described by Wasmann.‡ It is seen to differ considerably in detail however, and I should feel

* Contributions from the Zoological Laboratory of the University of Texas. No. 32.

† These were *Ecitonidia wheeleri* Wasm., *E. tenella* Wasm., two Staphylinid beetles; *Amblus affabilis* Brues, a blind Carabid beetle; and *Xanionotum hystrix* Brues, a wingless Phorid fly.

‡ Neue Dorylinengäste aus dem neotropischen und dem æthiopischen Faunengebiet, Zool. Jahrb. Abth. f. Syst., Bd. 4, Heft 3, 1900.



TWO NEW TEXAN ANT AND TERMITE GUESTS (BRUES).

constrained to consider it as the type of another genus, were it not for the already large number of monotypical genera of Myrmecophiles and Termitophiles already described. As such is the case, I think we must broaden our conception of genera in these groups where remarkable forms are of common occurrence. I can see no reason why this should not be done, for who would for a moment assert that the distinction between two genera of primitive insects like Orthoptera should be made as fine and delicate as between two genera of specialized Muscidæ, where the parts of the body have become so absolutely fixed? This tendency to produce strange forms in Myrmecophiles is so evident that it ought not to be ignored in our classification of them.

Following is the description of the new species:

Ecitoxenia brevipes sp. nov. (figs. 1 and 2).—Body broad, elongate-oval. Head and thorax carinated, as well as lateral margin of elytra. Abdomen very widely margined. Antennæ 11-jointed, reaching to the apices of the elytra, very stout, gradually and weakly clavate from the base of the second joint. First joint stout, as long as the two following, enlarged at apex, second small, triangular, third larger and less triangular, fourth to tenth quadrate, but little longer than wide, eleventh obtusely conical, one and one-third as long as the tenth. Head about as wide as long, rather acutely prolonged between the antennæ, this prolongation continuing back as a high carina, which extends to the middle of the head. Anterior angles also produced and elevated, forming an oval depression on each side of the median carina. Posterior angles raised and produced; two other oblique carinæ on posterior portion of head, forming with the median one a **A**. Eyes moderately finely granulated, not visible from above, being sunk in broad lateral depressions at about their own diameter behind the insertion of the antennæ. Mandibles simple, acute at apex. Labium wide, rounded truncate. Outer arm of maxilla about one-fourth longer than the inner; both densely ciliated, the outer one only for a short distance. Maxillary palpi 4-jointed, second and third joints about equal, the third broader, fourth very slender and obtusely pointed, half as long as the third. Ligula broad, bilobed at base, lobes broad and rounded at apex. Paraglossæ long, slender. Labial palpi 3-jointed, second joint twice as wide as long, slightly shorter than the first or third. Prothorax oval, nearly twice as wide as the head, transverse, with three hollow depressions separated by two high sinuous longitudinal carinæ. Lateral margin also carinated. Thorax sparsely hairy, as are also the head and elytra. Elytra about as long as the thorax, their lateral margins broadly turned up, truncate at apex, except for an emargination near the posterior angles, which are bluntly toothed. Abdomen com-

posed of seven segments, somewhat concave above and widely margined along the sides. Each segment somewhat dentate and bearing a short spine at the posterior angles. More or less clothed with short stiff hairs which become more delicate apically. Legs very short, tarsi 5-jointed, joints about equal on the four anterior feet, posterior pair with first joint the longest.

Length 3 mm.—Head, thorax, two or three apical segments of abdomen, elytra, legs and venter reddish fuscous. Abdomen piceous. Antennæ fuscous. Body opaque, except the abdomen, which is shining and sparsely punctured. The hairs on the head, thorax and abdomen sparse, brassy on head and thorax, yellowish on abdomen.

Described from numerous individuals collected at Austin, Texas, in a nest of *Eciton schmitti* Emery.

The hairs upon the head and thorax are similar to the complex hairs seen on *Ulkeus intricatus* Horn, another *Eciton* Myrmecophile. In this case each hair is composed of about four slender barbs, which are separate to the base, where they unite.

TERMITOGASTER Casey.

Up to the present time there seem to have been no truly Physogastric Termitophilous Staphylinids discovered in North America. Such species have been found in other parts of the world, and since the first discovery of *Corotoca* and *Spirachtha* by Schioedte in 1854 their number has increased considerably, until at the present time some fourteen or fifteen genera are recognized from various parts of the world. All of them seem to occur only in the nests of various species of termites. In 1889 Casey described *Termitogaster insolens** from Panama, but all the remaining genera are represented by forms from Madagascar, Africa and South America. The new form therefore adds considerably to the range of such genera, and it is interesting to note in this connection that the species of Termite, with which it lives (*Eutermes cinereus* Buckley), is a truly tropical form occurring at Cuernavaca, Mexico, from which locality I have also seen specimens.

Eutermes is rather rare at Austin, as we have seen only three or four nests of it during the several years which we have spent in this region. In two of these nests specimens of the new Termitophile were found. It resembles the queen of

* Annals of the N. Y. Acad. of Sci., vol. iv, p. 384.

the termite somewhat in color and shape, although it is very much smaller and can hardly be considered mimetic of it. It is quite conspicuous when seen running about in the galleries constructed by the *Eutermes*, which always nest in the ground under stones. It presents a very grotesque appearance, often carrying its abdomen flexed so far dorsally as to be directed straight forwards over the thorax much in the same way as has been figured by Schioedte for *Corotoca*.

Termitogaster texana sp. nov. (Figs. 3, 4 and 5).—Female. Length (with the abdomen held horizontally) 2 mm. Head rounded, much widened behind the eyes, broadly rounded behind. Eyes moderately large, but slightly convex, coarsely facetted, oval, more or less pointed posteriorly. Antennæ situated in cavities just above and in front of the eyes, somewhat attenuated towards the apex, 11-jointed, not geniculate, first joint very slightly longer than the second and third taken together, second short, hardly more than half as long and considerably narrower than the third, third slightly wider than the first, following joints narrower and very slightly shorter. Front very short. Labrum transverse, rounded anteriorly. Ligula considerably produced, extending to beyond the tips of the mandibles, thick and membranous as in *T. insolens* Cas. Palpi 3-jointed, more slender than in the male, and with the second joint only half as long as the basal one. Maxillary palpi 4-jointed, first joint very short, second and third equal, the third stouter, fourth one-half as long as the third and very slender. Mandibles rather slender and arcuate at tips. Prothorax considerably wider than the head, slightly wider than long, its angles rounded. Scutellum indistinguishable. Elytra not connate, about as long as the prothorax, with a few short bristles on the lateral margin. Wings well developed. Abdomen capable of being bent up over the elytra and prothorax, greatly swollen, almost circular when seen from above ; the dorsal segments not separated. Abdomen widely margined on the sides, this margin being raised rather sharply and then widely swollen out on the sides so that the swollen part is as wide as the margin when seen from above. The sclerites covering the margins and lateral surfaces of the segments are separated by white membrane. Abdomen everywhere sparsely short, bristly. First four dorsal segments gradually increasing in length, the fifth and sixth much longer. Sixth segment much narrower than the basal portion of the abdomen, appearing almost as an appendage to the circular part. Venter strongly convex and sparely setose, dorsum flat, except for the raised lateral margins. Legs moderately long, the anterior coxæ as long as the femora, and widely separated at their bases ; middle coxæ shorter and but slightly separated, posterior ones transverse, slightly separated. Femora and tibiæ moderately stout, tibial spurs extremely small. Tarsi with the first joint longest, fourth minute on the fore and hind feet. Claws edentate. Entire

body testaceous, except the elytra, which are more or less blackened apically; abdomen, and especially the venter, still paler, except for a fuscous spot at the base of the first segment on each side below.

Male.—Length 1 45 mm.—Differs from the female in having the antennæ more slender and with the second joint nearly as long as the third, and the eleventh nearly one-third longer than the tenth. Mandibles stouter, the left one with a small median tooth. Ligula much shorter and bilobed (see fig.) Maxillæ with the inner lobe spinose and hooked at tip, the outer lobe longer and very finely ciliate at the apex. Prothorax as wide as the elytra and bearing three lateral and six anterior strong marginal bristles. Elytra also strongly trisetose laterally. Abdomen only slightly swollen and widened, scarcely one and one-half times as wide as the prothorax. Broadly margined above on the sides and very strongly but sparsely setose, composed of seven segments. The abdomen has a tendency to be elevated as in the female, although not nearly to so great an extent. Elytra fuscous on apical half, and first ventral segment not maculate.

Described from one female and two male specimens collected in the nests of *Eutermes cinereus* Buckley, at Austin, Texas.

As may be gleaned from the description, this form is quite different from the Panama *Termitogaster insolens* Casey, but I have refrained from establishing another genus for its reception. The two sexes are seen to differ, especially in the structure of the mouth-parts and form of the abdomen; but as they are the only Termitophilous Staphylinidæ common in the nests of *Eutermes* at Austin, I think they must undoubtedly be the sexes of a single species. The mouth parts of the female are probably modified to conform with the method the Termites have of feeding one another upon regurgitated food, a share of which the *Termitogaster* doubtless begs from its hosts.

The Genus Phyllonotus.

I have received a communication from Prof. Theo. D. A. Cockerell in which he calls my attention to the fact that the name *Phyllonotus* is preoccupied. Swainson (according to Scudder's Nomenclator Zoologicus, p. 246) gave the name to a genus of mollusca, consequently my use of the term as applied to a genus of Tettigidæ, in my recent monograph "The Tettigidæ of North America," p. 45, necessitates a substitution. The name *Phyllotettix* is here proposed in the place of *Phyllonotus*.—J. L. HANCOCK.

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 a 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., JUNE, 1902.

The "Canadian Entomologist" has been indulging in some interesting discussion apropos of "Ecological labels." Much of this is ancient history, as one of our most esteemed dead and departed entomolgists used color labels long ago and some of us are still trying to translate them. It is said that an assistant who was color-blind put many of these labels on the pins. We hold that an insect pin should have on it the exact locality and date of capture. If individual opinion demands more than this we can offer no objection, but words fail to express our opinion of the individual who has nothing on the pin. (*People who sends insects here please take notice.*) We object to all systems which string a multitude of labels on the pin, especially if a key is needed to translate them. We object to big bill posters on the pin to be read without a key or to have certain parts underscored. We do not deny that it may be important to know more about an insect than where and when it was captured, and advocate in such cases that *printed* pin numbers be used corresponding with printed numbers in a record book. Then it is possible to write anything desired about a species. The caution in this case is that it should be seen to *that the book is part and parcel of the collection.*—H. S.

Entomological Literature.*

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

1. Proceedings of the Academy of Natural Sciences of Philadelphia, liii, pt. 3, 1902.—**35.** Annales, Société Entomologique de Belgique, xlvi, Brussels, 1902.—**68.** Science, xv, New York, 1902.

THE GENERAL SUBJECT.—**Anglas, J.** Nouvelles observations sur les métamorphoses internes, 1 pl., Archives d' Anatomie Microscopique, v, 1, Paris, April 20, 1902.—**Davis, C. A.** See Coleoptera.

ECONOMIC ENTOMOLOGY—**Beebe, C. W.** Preliminary observations on a sub-dermal mite, **68,** p. 754. **Clarke, W. T.** The Californian vine hopper (*Typhlocyba comes* Say), Report, Agricultural Exper. Station, University of Colorado, 1897-98, p. 179, 1900.—**Thiele, R.** Der Kampf gegen die Blutlaus, Gartenflora, Berlin, May 1, 1902.—**Woodworth, C. W.** Sprays and washes, Rep't. Agr. Exper. Stat. Univ. Colo., 1897-98, p. 181, 1900.

ARACHNIDA.—**Banks, N.** Some Arachnida from New Mexico,* **1,** p. 568.—**Beebe, C. W.** See Economic Entomology.—**Brucker, E. A.** Monographie de *Pediculoides ventricosus* Newport et Theorie des pièces buccales des Acariens, 4 pls. Bulletin Scientifique de la France et de la Belgique, xxxv, Paris, 1901.—**Michael, A. D.** Nomenclature of genera, etc, in the Oribatidæ, Annals and Magazine of Natural History, ix, p. 309, London, 1902.

ORTHOPTERA.—**Hancock, J. L.** The Tettigidæ of North America.* Chicago, 1902.—**Scudder, S. H.,** and **Cockerell, T. D. A.** A first list of the Orthoptera of New Mexico, Proceedings, Davenport Academy of Sciences, ix, p. 1, 1902.

ODONATA.—**Calvert, P. P.** On the systematic position of *Thaumatoneura inopinata* McLach., with some remarks on the classification of the suborder Zygoptera, Entomologist's Monthly Magazine, London, Feb., 1902.

HEMIPTERA.—**Cockerell, T. D. A.** The monophlebine Coccidæ, **68,** p. 717, 1902; **Id.** *Aspidiotus ancylus* Putnam, Proc. Davenport Acad. Sci., ix, 1902.

COLEOPTERA.—**Davis, C. A.** Instructions for collecting and mounting insects. A check list of the Coleoptera of the State of Rhode Island, 2d edition, Pilgrim Press, Providence, R. I.—**Deegener, P.** Bemerkungen

* Owing to the absence of Messrs. Viereck and Rehn and—the fortunately now past—illness of Mr. Bradley, the larger part of the list of entomological publications received must be deferred until the next issue of the NEWS.

über dem Bau der Regenerationskrypten des Mitteldarms von *Hydrophilus*, Zoologischer Anzeiger, Leipzig, April 7, 1902.—**Lameere, A.** Revision des Prionides, Ier memoir, Parandrines,* **35,** pp. 59-111.—**Lea, A. M.** List of Australian and Tasmanian Mordellidæ, etc. Transactions, Entomological Society of London, 1902, pt. 1, p. 1.—**Pic, M.** Addenda aux Xyletini du Brésil, **35,** pp. 130-1; **Id.** Essai dichotomique sur le genre *Gibboxyletinus* Pic, **35,** pp. 132-3.

DIPTERA.—Grimshaw, P. H. Fauna Hawaiiensis, iii, pt. 1. Diptera. Cambridge (England).—**Theobald, F. V.** A monograph of the Culicidæ or Mosquitoes, London, 1901. Published under authority of the Trustees of the British Museum. Two volumes text, one volume plates.—**Wesché, W.** Modifications of the legs in some dipterous flies, Journal, Quekett Microscopical Club, April, 1902, p. 245.

LEPIDOPTERA.—Busck, A. A review of the American moths of the genus *Depressaria* Haw., with descriptions of new species,* Proceedings, U. S. Nat. Museum, xxiv, pp. 731-749.—**Hampson, G. F.** Catalogue of the Lepidoptera Phalænæ, vol. iii, London, 1901. Published under the authority of the Trustees of the British Museum.—**von Linden, M.** Le dessin des ailes des Lépidoptères (fin), Annales des Sciences Naturelles, Zoologie, xiv, Nos. 4-6, Paris.—**Pagenstecher, A.** Callidulidæ, 19 figs. Das Thierreich, 17 Lieferung, Berlin, March, 1902.

HYMENOPTERA.—Bethe, A. Die Heimkehrfähigkeit der Ameisen und Bienen, zum Teil nach neuen Versuchen. Eine Erwiederung auf die Angriffe von v. Büttel-Reupen und von Forel, Biologisches Centralblatt, Leipzig, April 1 and 15, 1902.—**Cockerell, T. D. A.** A gall-making Cynipid fly in Jamaica, Nature, London, April 17, 1902.—**Dominique, J.** Description d'un *Harpactes* nouveau, 1 pl., Bulletin de la Société des Sciences Naturelles de l'Ouest de la France (2) i, 3-4, Nantes, Dec. 31, 1901.—**Field, A. M.** Further study of an ant, **1,** p. 521.—**Plateau, F.** Observations sur les erreurs commises par les Hymenoptères visitant les fleurs, **35,** pp. 113-129.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

We understand that the Entomological Societies of Philadelphia, New York, Brooklyn and Newark, will hold a field meeting at Jamesburg, New Jersey, on July the 4th, and that all entomologists are cordially invited to be present.

The Psychophora mix-up.—I.—Dr. Skinner approvingly quotes Dr. Smith's opinion that *Psychophora fasciata* Skinner (Ent. News, xiii, 141) is a Bombycid. If this means anything, it means that the species belongs to the family Bombycidæ. As I do not suppose that either of the gentlemen hold this opinion, the deduction is obvious that the opinion quoted means nothing.

I also am quoted as referring the insect to the Noctuidæ. I did so because the first specimen that Dr. Skinner sent me had vein 5 of the fore wings nearer to 4 than to 6; in the hind wings, vein 8 remote from 7, anastomosing with the cell shortly near the base. A second specimen, however, had vein 5 from the middle of the discocellulars, and is, therefore, a Geometrid, considering the other characters, tongue present, antennæ not clubbed nor dilated, hind wings with vein 1c absent. The position of vein 5 of the fore wings is not usually variable, but here it certainly is. A knowledge of the larva would be useful. I think that the best place for the species, at present, is in the Geometridæ. Later I expect to remark further on the subject and shall refer to Dr. Skinner's identification of the genus *Psychophora*, with which I am now inclined to agree.—HARRISON G. DYAR.

I AM not sufficiently interested in the Heterocera to try and establish the position of *Psychophora* in the classification of the moths, and now leave it to others. Dr. Dyar is correct in saying that this genus does not belong to the family Bombycidæ as at present restricted, but does it belong to the Geometridæ or Noctuidæ? Would it not be logical to infer that the first specimen Dr. Dyar examined belonged to the Noctuidæ; the second specimen to the Geometridæ, and a possible third to something else? If he is satisfied with his examination of the neuration, why does he say "A knowledge of the larvæ would be useful"? I have relaunched the genus and added a new species and now wish them a pleasant voyage to the land of species and synonyms.—HENRY SKINNER.

VARIATION IN HETÆRINA TITIA DRURY (ODONATA).—In my work on the Odonata in the Biologia Centrali-Americana, I have grouped the species of *Hetærina* according to the number of rows of cells on the hind wings lying between the lower sector of the triangle and the hind margin. In this scheme *H. titia* is placed among those species having "two rows of cells (not more) in a considerable part of the area mentioned." Since the publication of this work, Mr. Banks has sent me a male and a female of *titia* from Laredo, Texas, both of which have *three* rows of cells in this area for a length of seven cells (or five cells in the left wing of the male). This has caused me to re-examine the material enumerated in the Biol. C.-Am. consisting of 54 ♂, 31 ♀, to determine the exact proportion of individuals in which three rows exist. As the result I find frequently a single line of three cells, between the sector and the margin (and a single line of three cells does not of course constitute three *rows*), while in 18 wings of 9 ♂ and 2 ♀ are *three rows*. This means that in the 85 individuals, 10½ per cent. of the hing wings have three rows; or, to separate the sexes, 14.8 per cent. of the hind wings of the males and 3 per cent. of the hind wings of the females have three rows. These three rows extend for a distance of only two cells in 9 wings of males, and for a distance of from 3 to 6 cells in the remaining 9 wings, male and female.

It is further of interest to note that the individuals having three rows are thus distributed: Florida 1 ♂, Texas (probably near the Nueces River) 4 ♂, Nuevo Laredo (Tamaulipas) 3 ♂, 2 ♀, Teleman (Vera Paz, Guatemala) 1 ♂.

Undoubtedly the existence of this amount of variation in this character in *titia* impairs the value of the classification which I have employed. I have, however, implied its not infallible nature (*l. c.*, p. 20, lines 14–17), have cited some exceptions (*l. c.*, p. 22, foot-note), and am still unaware that a better character exists.—PHILIP P. CALVERT.

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.

NUMBER OF BROODS OF THE CODLING MOTH AS INDICATED BY PUBLISHED DATA.

By C. P. GILLETTE, Fort Collins, Col.

It seems as if the economic entomologists of the apple-growing sections of the United States should have determined, before this, the number of annual broods of the codling moth in their respective districts. Opinions as to the number are common enough, but these seem largely to be without definite data to rest upon. Some of the conclusions drawn from published records are plainly in error as I shall show.

The writer read a paper before the Association of Economic Entomologists in Denver last summer in which it was shown that the codling moth is quite definitely two-brooded in Colorado, both at the northern limit of successful apple-growing in Larimer County, and in the warm valleys of the south-west where the tender stone fruits are grown to perfection. Letters from Mr. Munson of the Maine Experiment Station and from Dr. Smith, of N. J. Experiment Station, were also quoted, stating that there were, at least, partial second boods in both those States the past summer, and the suggestion was made that perhaps we shall find, after all, that the codling moth is definitely two-brooded throughout its range. Dr. Smith expressed his opinion, however, that it was only a partial second brood that was appearing at New Brunswick. If the moth passes annually through one, or two, or one and a partial second broods in a locality, the fact could be easily determined. To determine with certainty, a partial third brood would not be easy, and it would require a large amount of very careful breeding-cage work to determine a partial fourth brood with any certainty at all.

In spite of the opinion of many entomological friends that there are

more than two broods of the codling moth in many parts of United States, I must say that I am unable to find any records published that tend strongly to prove such an opinion, to say nothing about an indication of even a partial fourth brood.

In Bulletin 25 of the Oregon Experiment Station, 1893, p. 5, Mr. Washburn gives a table and records which he considers to be "convincing proofs that the moth is at least four-brooded in Oregon."

In Mr. Washburn's table he places the beginning of egg-hatching for the first brood of moths June 21st, of the second brood Aug. 29th, and of the third Nov. 6th. The fourth he does not give, but figured like the others, it would come Jan. 15th, and the larvæ would not mature before the first week in Feb. As these dates were to mark the beginnings of the brood the last of each brood would come much later. This, of course, is quite absurd, but I think Mr. Washburn counted the fall bood in the fall and again in the spring and so increased the number of generations that appear during a year by one. This being true, it would cut his number to three broods as he estimated them. But with three broods the hatching of the first eggs for the third brood would come on Nov. 6th. Egg-laying would probably continue for fully six weeks which would carry it to December 18th. To this we should have to add fully three weeks for the development of the larvæ, which would take us to Jan. 8th, which surely is very much too late. If so, this would reduce the number of broods to two, unless there existed a partial brood, which I think it is best to doubt for almost any insect with an abundant food-supply until its presence is thoroughly proven.

Mr. A. B. Cordley, of the Oregon Experiment Station, has recently written me that during four years' work with the codling moth in that State he has never been able to rear a moth later than Sept. 15th. This corresponds almost exactly with our records for northern Colorado, and it means that the larvæ of the codling moth began to hibernate in Oregon as early as the first week in August, and almost certainly cuts the number of broods to two, as they occur in Colorado.

In Bulletin 21 of the Idaho Experiment Station, 1900, p. 101, Mr. Aldrich announces three broods and a partial fourth for that State in the vicinity of Boise, but gives no data to support such a conclusion. If records proving this number of broods are in existence, they should be published in full for the benefit of entomological workers and fruit growers.

Another published record given to prove three broods in Idaho appears in Bulletin 30, New Series, U. S. Dep. of Agr., Division of Entomology, p. 56. The record is by Mr. C. B. Simpson, agent of the division. An orchard of 140 trees was banded and the bands removed at intervals of a few days and the larvæ taken. A complete record of the captures was taken and is given to show the rise and fall in numbers corresponding to the rise and fall of the different broods. If we take the number given for each date in Mr. Simpson's record and divide it by the

number of days the bands were on since being last removed, we shall have a proper set of figures to show the rise and fall of the broods and the results will be as follows: In 1897 the first brood gradually increased in numbers until a maximum of 181 larvæ per day was attained in the period closing July 16th; then there was a rapid falling off to a minimum of 41 per day in the period closing August 9th. A gradual increase than began which gave a second maximum of 191 per day in the period closing Sept. 2d, and then a decline, at first slow and then rapid, to a minimum of 52 per day in the period closing Oct. 19th. As the last period was a long one—15 days—it is probable that the larvæ had almost ceased to come to the bands on the date of their removal.

Figures could hardly have been made to order that would better serve to indicate just two broods of this insect. The maximum of the first brood July 16th, and of the second brood Sept. 2d, compare remarkably well with our records for northern Colorado, and gives 48 days as the average time for the complete round of development. In my paper above referred to I gave 49 days, or seven weeks, as the average time in Colorado.

The records given by Mr. Simpson for 1898 are similar, except that the broods are both later, probably on account of a later spring, and the time elapsing between the two maxima is a little greater.

Both records are strong proofs of just two broods and yet the writer says "From these records, supplemented by observation, I can say definitely that there are three broods in the vicinity of Boise and the greater part of the Snake River Valley." I can only account for such a statement on the supposition that Mr. Simpson had a pre-formed opinion that he must make out, at least, three broods, and he did not have the courage to announce less. Pre-formed opinions are dangerous things when carrying on an experiment.

The data given by Mr. Cockerell in Bulletin 25, pp. 48-50, of the N. M. Experiment Station, 1898, indicate that there may be more than two broods of the codling moth in that State, but the evidence is not at all conclusive, particularly when we notice that on Sep. 3rd there were 53 larvæ taken, from which only three moths hatched. At Fort Collins we have hatched late moths of the second brood as late as Sept. 16th.

Is it not possible, yes probable, that many errors have been made and are being made by entomologists who announce an insect as varying in its number of generations in a locality or in different localities? It is certain that such announcements are repeatedly made in entomological literature without accompanying data to support them. Too often the the time required for the life cycle is estimated in days, and then the duration of the insect's occurrence in the year is estimated in days, and the latter number divided by the former to determine the number of broods. Such an estimate I believe will usually be erroneous if the number of broods is more than one or two. The codling moth requires, on an average, about seven weeks to pass through its transformations. This

would enable us to figure fully three and a half broods for Fort Collins, where we know there are but two broods.

In working to determine broods there are two factors that should be kept in mind. In the first place, the individuals of a brood do not all appear at one time but are usually distributed over many days, often several weeks. We have had the first brood of the codling moth appearing in our cages for over two months. And then the early individuals of the last brood of an insect begin to hibernate or otherwise prepare to go over winter long before the late individuals of the brood. Citing the codling moth again as an instance, the larvæ of the early part of the second brood begin to spin up to pass the winter as larvæ early in August at Fort Collins but the late members of the brood are in apples till winter.

Doings of Societies.

A regular meeting of the Chicago Entomological Society was held in the John Crerar Library April 17th. Seven members were present. President Longley in the chair. Mr. Healy gave an interesting talk on edible insects. Among other things he spoke of the Digger Indians eating grasshoppers. He also said he had heard his father tell of the troops in the Mexican war eating ants on their hardtack when food was scarce. Prof. Westcott told of an experiment which C. V. Riley had made on baked grasshoppers. It was suggested that the Society indulge in grasshopper cakes in the coming season. Mr. Longley spoke of a Mexican delicacy—the bottle ant. Many other instances of insects being eaten were discussed.

A meeting of the American Entomological Society was held April 24th. Dr. Calvert, President, in the chair. Fourteen persons were present. Dr. Skinner exhibited a new variety of *Papilio polyxenes* Fab. Mr. Laurent said he had had a specimen of *Thyreus abbotti* emerge to-day. The pupa was kept outside all winter. He attributed the early emergence to the warm spell. Mr. Wenzel said he and Prof. Smith had recently visited Anglesea, N. J., and had examined the ponds and found multitudes of mosquito larvæ. Mr. Wenzel predicted a large crop of the imagos this summer. Mr. Wenzel also reported the capture of both sexes of *Batrisus ione* at Angle-

sea, on April 20th. Mr. Huntington exhibited some Diptera which had been sent in butterfly papers and had arrived in good condition. Dr. Calvert advocated a separate cyanide jar for collecting Odonata. Otherwise the dragonflies were covered with scales of other insects which had to be removed. Mr. Daecke reported the capture of *Tetragoneura spinosa* ♀ April 21st, at Laurel Springs, N. J. Also took a pair *Xylophagus persequus* in coitu. Some Pentatomids were found feeding on a larva of *Haploa lecontei* and eight living larvæ of this moth were taken. Mr. J. Chester Bradley was elected a member.

HENRY SKINNER, *Secretary.*

The twenty-fourth regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of February 11, 1902, President Bolster in the chair. Fourteen persons were present. Dr. L. O. Howard was unanimously elected to honorary membership. Extensive exhibits of butterflies of the genus *Colias* were made by various members, and Mr. Field gave a talk upon the traits of *C. philodice*. Mr. Burrison gave an account of a recent visit to Mr. Thomas Bean, at Laggan. A communication from Mr. George B. King, dealing with myrmecophilous insects, was read.

W. L. W. FIELD, *Secretary.*

The twenty-fifth regular meeting of the Harris Club was held at 35 Court Street, Boston, March 11, 1902. Vice President Low presided. Sixteen members were present. Mr. Newcomb gave a few notes on April captures of Lepidoptera during the past three years. Mr. Kirkland spoke of the interesting captures to be made of early predaceous insects in the webs of the tent-caterpllar, *C. americana*. Exhibits of early spring Lepidoptera were made by Messrs. Newcomb, Rogers and Hall. Mr. Kirkland presented each of the members attending with a copy of his pamphlet, "The Shade Tree Insect Problem," containing accounts of the elm leaf beetle, gypsy moth, brown tail moth, etc., and methods of fighting them.

A. P. HALL, *Secretary pro tem.*

At the April meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, ten persons were present.

Prof. Smith exhibited portions of branches of elm showing the work of *Anthaxia ridifrons*. Associated with it were the burrows of a large unidentified Buprestid, and of *Neoclytus erythrocephalus;* the borings of the latter are round and quite deep as compared with the others. The borings of a probable Scolytid were also present.

Mr. Daecke reported the capture of *Vespa Carolina* at Lucastown, N. J., on April 14th, and asked concerning its building habits. Discussed by Messrs. Fox, Johnson and Smith.

Mr. H. Wenzel reported the capture of *Adranes LeContei* near Woodbury, N. J., April 13th, and of an interesting Staphylinid from a colony of termites.

Prof. Smith exhibited pieces of an old railway tie from Anglesea, N. J., by Mr. E. L. Dickeson with masses of eggs of some large orthopterous insect. They were unknown to the members, but Mr. Johnson and Mr. Seiss reported the finding of similar pods.

Mr. H. Wenzel exhibited immaculate forms of *Cicindela punctulata*, *splendida*, *cumatilis*, and *sexguttata* from Vowell's Mills, La.

Mr. Fox spoke on a new genus of bees, *Lithurgopsis* to replace *Lithurgus* as a name for the American species which had been referred to that genus.

Mr. Johnson exhibited specimens of *Phylloscelis pallescens* and *atra* and a mottled form, and spoke of the difference of opinion as to whether this latter form represented a distinct species or was the same as *atra*. He also showed living larvæ of *Stegomyia fasciata* from Cuba, which he had raised from eggs carried to him in a dry state by Mr. John Taylor, of Havana.

Prof. Smith stated that the eggs of *Aëdes Smithii* are laid in dry pitcher-plants, and hatch only when these are filled with water. *Culex canadensis* and *triseriata* hibernate apparently in larval stage. Although *Anopheles maculipennis* and *Culex pungens* were found in early April of this year in cellars at

Anglesea, N. J., no specimens of *Culex sollicitans* had been encountered. On April 11th larvæ of *Culex cantans* had been found but no *sollicitans*.

WILLIAM J. FOX, *Secretary*.

The third regular quarterly meeting of the California Entomological Club was held on the evening of February 22, 1902, at the residence of Mr. Beverly Letcher, 2701 Laguna Street, San Francisco. President Fuchs in the chair.

A paper by Dr. Edw. C. Van Dyke on "The Faunal Areas in California as seen by a Field Coleopterist" was then read.

The Doctor divided the State Faunal Areas into two divisions—the Boreal and the Sonoran, as indicative of their mode of origin. The Boreal was subdivided into the Maritime and the Sierran; the Sonoran into Southern California, Great Basin and the Sonoran proper.

He named the following species of Coleoptera as most typical of the several faunas: Of the Maritime, among the Carabidæ, *Pemphus angusticollis* with its races; *Brennus cristatus* and its more southern relative *reticulatus*, *Elaphrus pallipes*, *Loricera 10-punctata*, *Leistus ferruginosus*, *Promecognathus lævissimus*, *Bembidium erasum*, *B. 4-foveolatum*, *B. spectabile*, *Pterostichus crenicollis*, *Pt. amethystinus*, *Pt. longicollis*, and *Pt. vicinus*; several species of *Amara*, *Platynus*, *Tachycellus nigrinus*; *Haliplidæ*, *Brychius hornii*; Dytiscidæ, *Dytiscus marginalis*; several Silphides; Byrrhidæ, *Simplocaria nitida*, two species of *Pedilophorus*; Lucanidæ, *Ceruchus striatus*; Scarabæidæ, *Aphodius ursinus*; Cerambycidæ, *Opsimus 4-lineatus*, *Leptalia macilenta*, etc.; more southern species which, at one time, belonged to this fauna; *Bembidium laticeps*, *Trechus barbaræ*, *Pterostichus menetriesii*, *Pt. isabellæ and Pt. congestus*.

Of the Sierran, the genus *Omus*, *Cicindela perviridis*, *C. graminea*, most *Brennus*, *Pterostichus ater*, species of *Bembidium*, *Platynus*, *Harpalus*, *Nebria*, *Notiophilus*, *Trechus chalybeus*, *Patrobus septentrionis*, *Pleocoma*, *Hoplia*, *Dichelonycha*, coniferous wood-boring beetles in part, as also many of the Dytiscidæ, Mycetophagidæ, Endomychidæ and Coccinellidæ.

Of the Sonoran, *Edrotes ventricosus*, *Triorophus lævis*, *Cryp-*

toglossa verrucosa, many *Asida* and other Tenebrionidæ; *Polycesta velasco*, *Acmæodera gibbula*, *Tragidion annulatum*, *Hololepta yucateca*, and several genera of the Cantharidæ, etc.

Of the Great Basin (small districts in Mono, Inyo, Modoc and Lassen Counties in the south and north), *Cicindela cinctipennis*, *C. pseudosenilis*, *Eleodes nigrina*, several *Acmæodera*, etc.

Of the Southern Californian (northern and southern types somewhat mixed), southern forms like *Asida*, *Phlœodes*, *Zopherus*, *Eleodes*, *Pseudomorpha behrensii*, *Polycesta californica*, many *Acmæodera* and Cantharidæ.

He further stated "these various faunas and subfaunas are of course quite distinctive within certain limits, but along their margins they intermix, constituting the so-called transitional zones. Attention was called to the theory of a succession of migrations of southern types to account for southern species being domiciled within the region of more northern forms, such as the *Coniontini*, *Blapstinus* and several *Eleodes*.

Mr. Beverly Letcher in a paper on the "Distribution of Californian Day Fliers," said:—Consideration has been given to the distribution of Lepidoptera only, without reference to other orders, and the subject approached as though nothing existed in California but the butterfly.

One hundred and fifty-eight day fliers out of 225 species credited to the State are considered. Distribution closely follows the coast and Sierra Nevada Mountain ranges; the intervening valleys have no distinctive fauna; there is, in addition, the Southern California, including Santa Barbara, Ventura, Riverside, Los Angeles and San Diego Counties west of the mountains, and the desert in the southeastern part of the State, and the so-called Alaska Maritime and Great Basin faunas, which are not considered for lack for data.

Information with regard to desert fauna rests on one list published in the ENT. NEWS. Of 23 species reported, 18 are peculiar to the desert. Distribution of others as follows:

Peculiar to northern coast	. . .	22 species.
" " southern "	. . .	17 "
" " Sierra Nevada	. . .	27 "

Northern coast and Sierra Nevada have in common	23	"
Northern coast and southern coast have in common	17	"
Southern coast and Sierra Nevada have in common	4	"
All divisions, except desert, share . .	27	"

A number of species common to northern coast and Sierra Nevadas are found in the neighborhood of Mt. Shasta, where the two mountain ranges merge, and from which point the species range southerly, sometimes in the Sierras, sometimes in the coast, sometimes in both.

In order to compare and correlate plant and insect distribution as far as possible, an invitation was extended to Miss Alice Eastwood, Curator of the Herbarium of the California Academy Natural Sciences, to present her views upon the Floral Areas of California. Miss Eastwood responded, and among the many instructive things she said the following were to the point :—"At first sight it would seem that it would not be possible to draw a line between Central and Northern California, as there is no mountain chain here to make a natural barrier. However, San Francisco Bay and the great rivers that empty their waters therein can approximately be used.

"The flora also suggests this division. In the coast mountains, Mt. Talmalpais may be taken as the southern landmark of the northern flora and Mt. Diablo the most northern of the southern.

"On the former mountain *Quercus garryana*, *Rhododendron californicum* and *Ceanothus velutinus* find their southern limit. These are all species most abundant and characteristic in the north. On the latter mountain *Pinus torreyana* and *Arctostaphylos glauca* find their most northern home, and these species are characteristic of the flora of the southern coast mountains.

"In the Sierra Nevada the line reaches the Yosemite or some point north of it, perhaps the Calaveras grove of *Sequoia*. It is in this region that *Arbutus menziesii* ceases to grow, and that the Douglas spruce finds its southern home."

After discussion by Messrs. Letcher, Fuchs, Huguenin, Ehrhorn, Cottle and Blaisdell, it was decided by vote that a line of convenience should be drawn across the State as suggested by Mr. Ralph Hopping, as follows:—Beginning at the Golden Gate, following the Bay of San Francisco to the mouth of the San Joaquin River, thence along the northern boundaries of San Joaquin, Calaveras and Alpine Counties to the Nevada State line. By this act the boundary lines of Northern, Central and Southern California (Fall's line) are definitely fixed.

Notes on *Acmæodera mariposa* by Ralph Hopping were then read. He stated that "this rare species distributed in collections as follows:

1 specimen, Mokelumne Hill, Calaveras Co., Blaisdell coll.
1 " San Mateo Co., Van Dyke coll.
1 " Tuolumne Co., Fuchs coll.
1 " Horn coll.
1 " Kaweah, Tulare Co., Daggett coll.
3 " Tulare Co., Hopping coll.

Mr. Fall seems to think that *Ac. dohrnii* may possibly not be distinct from *mariposa*. At present we have the latter from Calaveras to Tulare County, while the former extends from Mariposa County to Los Angeles."

Notes on Lepidoptera and two specimens of *Cychrus* were received from the Grattum Naturalists' Club, El Dorado County.

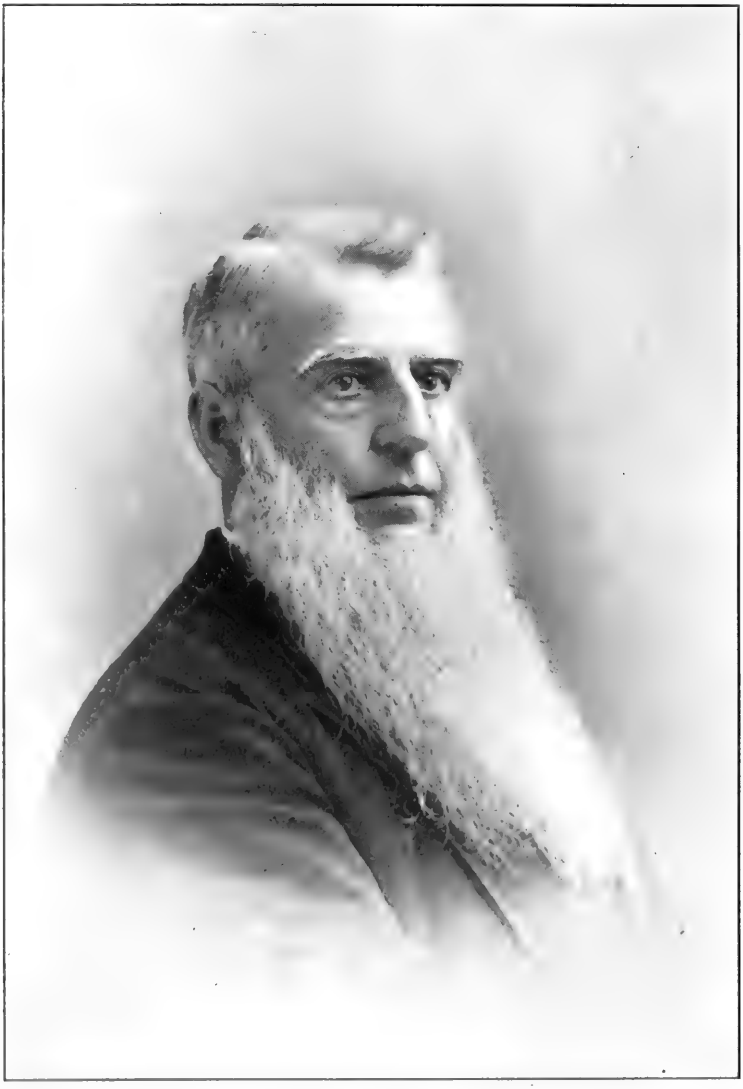
An anonymous and humorous communication was received from the U. S. Agric. Dept.

A vote of thanks was extended to Miss Eastwood for her interesting talk.

Mr. Edw. Ehrhorn exhibited an interesting collection of scale insects, explaining their beneficial and injurious properties, also their distribution by a map, stating that they follow their food plants, and that in 1875 there were only 570 species known, while at the present time over 1500 species are described.

Six members and two visitors were present. One new member elected. Adjournment.

F. E. BLAISDELL, *Secretary*.



HOMER FRANKLIN BASSETT.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. SEPTEMBER, 1902. No. 7.

CONTENTS:

OBITUARY.

Homer Franklin Bassett died at his home 120 Cooke Street, Waterbury, Conn., 4.20 A.M., June 28th. He was afflicted with disease of the heart and kidneys.

"Mr. Bassett was the eldest son of Ezra and Keziah Bassett; he was born in Florida, Mass., September 2, 1826. At an early age his parents removed to the Middle West, and he studied at Berea (Ohio) University and at Oberlin College. From 1837 to 1850 he resided at Rockport, Ohio, and from 1850 to 1858 spent his winters teaching in Ohio and Connecticut, returning for the summer months to his farm at Rockport. He taught during the winters of 1851, '52, '53 in Wolcott; in '56 and '57 at Berea, and in '58 and '59 in Waterbury. It was thus that he first became identified with Waterbury and its interests. He spent part of the year 1858 in Kansas, but in the spring of 1859 he opened a private school in Waterbury with quarters on the second floor of the building. He was obliged to discontinue this school eight years after its start, however, because of ill health.

"In 1871 he started an insurance agency in connection with

a real estate business. In 1872 he was appointed librarian of the Bronson Library, which place he held until his resignation because of age and ill health on March 1, 1901. During this long term of service Mr. Bassett became well known to a large part of Waterbury's population. He was happy among the books which he knew and loved. His storehouse of information, acquired with much study and thought, was always at the disposal of those who sought his aid, and although he sometimes seemed stern and unapproachable he was at heart kindly and sympathetic. As a result of his love for natural history the library is the richer by many rare and valuable scientific works brought to the shelves during his administration.

"The Bronson Library has hundreds of standard works on natural history that a less practical librarian would not have thought essential in a manufacturing city. It has three valuable collections: a botanical collection of about 1,500 specimens collected, classified and donated by him; a geological collection of several thousand specimens; the Anderson collections of Indian relics. While he did not pay for the last two, his interest and enthusiasm induced others to.

"He has done even more; he has in his own quiet, earnest way succeeded in making hundreds of men and women believe that their eyes were made to see, that nature was an open book, that they must, to enjoy the full measure of life, be students of nature.

"He believed that there were

Tongues in trees,
Books in the running brooks,
Sermons in stones and good in every thing,

"Mr. Bassett was a rarely developed man. He was a born teacher. He possessed that rare faculty of imparting knowledge to others and of unconsciously teaching men to teach themselves to be studious, to be thoughtful. He was keen and vigorous of intellect. He was tender and true of heart. His counsel, his knowledge, his advice will long be missed in this community."

He acquired an enviable position in American entomology through his studies of galls and gall flies, and wa as pioneer in

this branch of the subject. His writings form most valuable contributions, and he described many species new to science. A short time ago his superb collection of Cynipidæ, including the types, was presented to the American Entomological Society of which he was a corresponding member. This collection is to be kept intact under the name of the Bassett collection. His loss will be keenly felt in the entomological world. He leaves a widow and two daughters.

Notes on Casey's Revision of the American Coccinellidae.

By F. C. Bowditch.

Mr. Casey's change of our well-known *Megilla maculata* D. G. to *fuscilabris* Muls. seems to be doubtful even on his own showing, as he speaks of them "as in all probability distinct." Such changes should only be made on a certainty. *Megilla strenua* from Brownsville, Tex. = *maculata* D. G.; beyond any reasonable question, his *M. medialis* is probably also a synonym (see also Biolog. VII, p. 151). In *Hippodamia* my specimens, which agree with his descriptions of *puncticollis* and *dispar* and come from the same localities, I call 5-*signata* Kby.; several of his other species I fail to identify with certainty, but they seem to be mere variations of established forms.

Eriopsis connexia Germ., he states should be stricken from our lists as not occurring in the United States, though Crotch says it does. I have a specimen from Texas.

Coccinella impressa Casey and *alutacea* Casey = 5-*notata* Kby., or *transversogutta* Fab., whichever of these latter names stands. I fail to separate *perplexa* Muls., *juliana* Muls. and *eugenii* Muls. from our well-known *trifasciata* Linn.; a form of which I have three examples from Colorado and one from Kansas is at present labelled a variety of the last, it has the black part of the thorax continued to the front margin. It is possible this form may tend to *difficilis* Cr.; *C. degener* Casey = 9-*notata*. I think the validity of *C. nevadica* Casey is very dubious, as I have a specimen which shows traces of the spots of 9-*notata*.

Cycloneda immaculata Fabr., *rubripennis* Casey, *limpifer*

Casey, *munda* Say and *polita* Casey. I have many specimens including ones from the exact localities these forms are said to come from, and I confess to a total inability to separate them from *sanguinea* Say (see Biolog. VII, p. 170–71).

Cleis minor and *hudsonica* Casey are varieties of *C. picta* Rand.

I find it impossible to separate my series of *Anatis* 15-*punctata* Oliv. and *mali* Say; the latter is undoubtedly a synonym.

Neomysia interrupta Casey seems the same as *horni* Cr.—my specimens indicate that *randalli* Casey is a variety of *pullata* Say.

I am unable to trace the differences of his new species of *Psyllobora*.

In *Exochomus*, p. 109, speaking of the forms *childreni* to *æthiops*, it is said they may be regarded as derivatives of the *marginipennis* type but specifically distinct. I have the three forms *childreni*, *latiusculus* and *fasciatus*; then I have an example from Yuma, California, which has the elytra of *childreni* and the thorax of *fasciatus*, except that in one the anterior black elytral markings are connected with the posterior, bringing up against specimens of *marginipennis* from St. Louis and Florida.

Chilocorus bivulnerus Muls. is said to occur as far west as Iowa, and there are three new California species. I have examples from California, Oregon and Colorado, which I cannot call anything but *bivulnerus*, and the specimens which I have marked off as the new species seem to be rather shadowy. *Cacti* Linn. is spoken of as from Honduras, but Texan specimens seem plenty. Gorham in Biolog. VII, p. 175, gives California and Texas as localities.

Axion pilatei Muls. is noted as probably distinct from *plagiatum* Lec. because of its red abdomen. I have an example of *pilatei* from Texas which has a red abdomen with a central black cloud. *C. 3-pustulatum* D. G. I have from Missouri, Texas, Wisconsin, New Jersey and Pennsylvania.

Brachyacantha illustris Casey = *albifrons* Say; *decora* Casey = *erythrocephala* Muls. I have a pair of this species from Orizaba, Mexico, *in cop.*, which has the "confluent pale spots" entirely separate in the ♂ and confluent in the ♀. I do not find any difference between 10-*pustulata* Mels. and *testudo* Casey or *socialis* Casey and *dentipes* Fab.

Hyperaspis pinguis Casey, I query = *lateralis* Muls. and the same with *lævipennis* Casey ; *wickhami* Casey = *centralis* Muls. ; *globula* Casey extends into Mexico (Vera Cruz) ; 6-*verrucata* Fabr. occurs from Texas, Colorado, Arizona. It seems strange Mr. Casey should have written so elaborate a paper without seeing examples of *tædata*, *pratensis*, etc. I have sundry specimens which do not fit in anywhere, but without a much larger series should hesitate to call them new. Mr. Casey's treatment of the genus seems incomplete and unsatisfactory.

Scymnus—is a wilderness, though I have the benefit of all Mr. Wickham's material, most of which was worked over by Dr. Horn ; I am lost in Mr. Casey's windings—*brunnescens* Casey was apparently thought by Horn to be a variety of *terminatus* Say, *subtropicus* Casey = *collaris* Mels., *Texanus* Casey = *fraternus* Lec., *renoicus* Casey and *calaveras* Casey = *lacustris* Lec.

Lantern Trapping.

By E. J. Smith, Natick, Mass.

For the past two seasons I have been using a moth trap, and had such good luck with it that I would like to tell your readers about it. The trap I used was designed by Mr. A. P. Morse of Wellesley College, who kindly lent it to me. It consists of a box of wood having glass on each of its four sides, and a cover with arrangement for outlet of heat and smoke similar to ordinary old style street lanterns. At the bottom are holes for ingress of air. The box is large enough to contain an ordinary kerosene lamp with chimney, and is supported over a wooden box about 18 inches square, which in turn contains a zinc pan about 2 inches deep, and as large as will go in the box. At the base of each pane of glass is a slot the whole width of the glass and about one inch wide which opens directly into the pan below. The pan is filled about half full of water, and then about a pint of kerosene is poured on top. The moth strikes the glass and falls through the slot and is killed by the oil. I have taken hundreds of moths in a single night, and for many weeks in succession. I let it burn until it goes out, putting enough oil in the lamp to last until towards

morning. In the morning I take a good sized pasteboard box, in the bottom of which is about a dozen thicknesses of old newspaper, and with a slender pair of forceps I pick the moths out by the legs and lay them on the paper. I let them lie there about two hours to get rid of most of the oil and water, then I put them in a large shallow pan of gasoline and cover with a pane of glass and leave for some hours, frequently over night. Then pick them out and lay on blotting paper and the gasoline soon evaporates, leaving the moths as clean and bright as though never wet. The greatest drawback to this method is the "dor bugs" (*Lachnosterna*), which in May and June will swarm into the pan and, of course, damage some of the moths. But in spite of that I have taken many very fine specimens for my cabinet that I never should have seen otherwise. I have used the trap in my orchard about a dozen rods from my door and have taken about 500 different species and varieties. Among them are three species of Deltoids which are, so far as I can learn, not heretofore recorded from this State. They are *Hormisa orciferalis*, *H. litophora* and *Zanclognatha pedipilalis*. I also took *H. bivittata* and *Salia interpunctata*. Besides the above I took *Paonias astylus*, *Hydrœcia speciosissima*, *H. impecuniosa*, *Hyparpax aurora* and *Perophora melsheimerii*, besides others too numerous to mention.

In using the trap care must be taken to add more oil every night, and in the hottest weather the water should be changed twice a week. If in very hot weather a tendency to sliminess appears, it can be prevented by the addition of a spoonful or two of saturated solution of alum in water to the contents of the pan. If too much is added it will form a precipitate, which, however, does no harm. It keeps the water clear much longer than it would otherwise be, but if too strong will corrode the zinc somewhat.

And now a word about the economic side of the question. A firm is advertising a cheap form of trap among farmers and in seed catalogues, and claiming that by using their trap that all insects which are injurious to garden products will be attracted and destroyed, and that it is more effectual and much cheaper than spraying. I think my experience has

fully proved that trapping is worse than useless. I had two traps in my orchard all last season, from March to November, and one the previous season, and last season my apples were so wormy and knotty that I got absolutely no good fruit, while men half a mile away who sprayed got a good crop of fair, fine marketable apples. Great stress is laid on the capture of "coddling" moths in the circulars, meaning, I suppose, *Carpocapsa pomonella*. Although I carefully examined all that I caught, I have a record of only one specimen of that species in the two seasons! Of course, it gets a good many "dor bugs," but I think they are largely males, and at any rate there were more last season than the previous one. It catches also many ant lions, Carabidæ, ichneumons, and species which do not eat anything that is of any use to farmers, and I really think that the destruction of beneficial insects more than balances any good that may be done. But "the fool and his money are soon parted," and farmers are always an easy prey for bunko men and land sharks, so I suppose that many traps will be sold, and many orchards unsprayed in consequence.

I find that the great majority of specimens caught are males, and, of course, as they don't lay eggs, their capture is of no value to the farmer. Of several very common things I have never taken a ♀, though I have carefully examined all, hoping to get specimens for my collection.

The Larvae of Myrmeleon texanus Banks and M. rusticus Hagen.

(See Plate XI.)

J. F. McCLENDON.

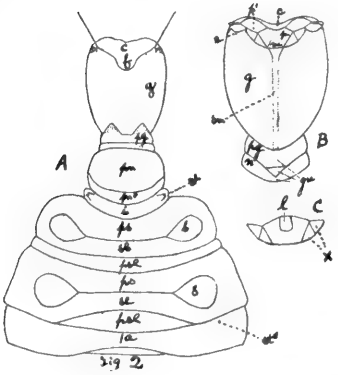
(Contributions from the Zoological Laboratory of the University of Texas, No. 33.)

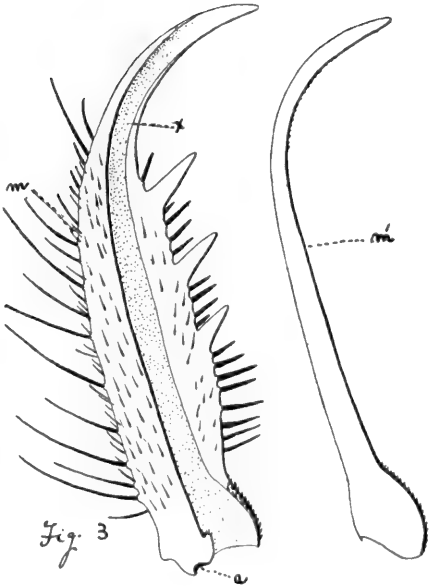
In addition to the technical description of the larvæ of *Myrmeleon texanus* Banks, and *M. rusticus* Hagen, the following paper includes a few paragraphs on the homologies between the external anatomy of the larva and imago. This subject has received some attention from Hagen, Redtenbacher and other entomologists, but their work was of a general nature. In the present paper I have carefully compared the larva with

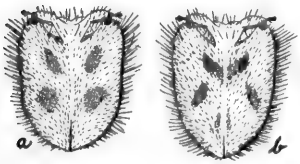
the imago, and with the larvæ and imagines of *Corydalis cornuta* and some other Neuroptera. The two myrmeleon larvæ differ but slightly in form, so that the following description will apply to both.

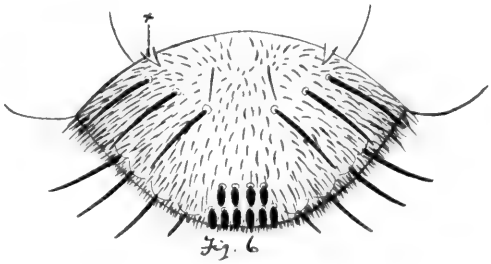
The epicranial suture is obsolete, so the two genæ are fused above (Fig. 2, *g*) but the forked portion remains, and separates the front (Fig. 2, *f*) from the genæ. The suture between the front and the clypeus (Fig. 2, *c*) is obsolete. The middle portion of the clypeus is produced downward in front and meets the palpiger of the labium. The labrum and ligula (Fig. 2, *i*) are small and infolded into the mouth, the two adhering together and closing the oral orifice in front. The eye is represented by a conical peduncle (Fig. 4, *o*) bearing six simple eyes. The antenna (Fig. 4, *a*) arises from the gena, close to the postero-lateral edge of the clypeus. The mandible (Fig. 3, *m*) articulates with the clypeus above and apparently with the gena below; it is grooved beneath, and the maxilla (Fig. 3, m^1), which is devoid of a lacinia, galea or palpus, fits in the groove, the two forming a duct leading to the pharynx. The remainder of the head is more difficult of analysis. Between the head proper and the prothorax there are two segments (Fig. 2, *pg* and *n*). The posterior represents the neck of the imago, the ventral portion being the gula, or a part of it. The dorsal portion of the anterior represents the occiput; and the lateral portions the postgenæ, or rather a part of them, for the postgenæ of the imago extend forward and articulate with the mandibles. The ventral portion of this segment probably represents part of the gula. The genæ are separated below by a narrow strip of thinner chitin, which probably represents the submentum (Fig. 2, *sm*). The mentum is probably represented by a triangular piece (Fig. 2, *m*) partially fused with the palpiger. The palpiger (Fig. 2, *p*) bears, on each side, a lobe (Fig. 2, *c*, *x*) formed of two triangular pieces. The palpus consists of a large flat basal joint (Fig. 2, p^1) and three small joints. The ligula is infolded into the mouth as stated above.

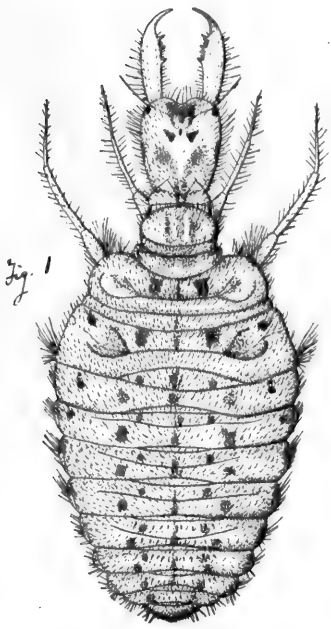
The pronotum is divided transversely into two pieces (Fig. 2, *pn*, pn^1), but these apparently do not represent the scutum











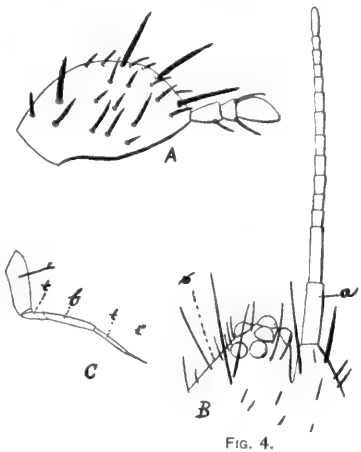


FIG. 4.

LARVÆ OF MYRMELEON TEXANUS BANKS AND M. RUSTICUS HAGEN.

and scutellum. Between the pro- and mesothorax is an intersegmental piece Fig. 2, *i*) which bears the mesothoracic stigmata (Fig. 2, *st*). The metathoracic stigmata are closed. The mesonotum and metanotum are each divided into a prescutum, scutum, scutellum and post-scutellum (Fig. 2, *ps*, *s*, *sl*, *psl*). Each scutum is represented by two widely separated oval pieces. The thoracic pleurites are so modified as to bear little resemblance to those of the imago. Each leg (Fig. 4, *C*) consists of a coxa, trochanter, femur, tibia and tarsus. The coxa has not a meron, this being represented by the elevated portion of the thorax to which the coxa is attached. A comparison of the larva and imago of Corydalis shows how the meron has been separated from the thorax and united to the coxa. The abdomen consists of nine segments, the ninth representing the fusion of the ninth, tenth and eleventh of the insect embryo. The first pair of abdominal stigmata are above (Fig. 2, st^1), the remaining seven pairs are on the midlateral line. The anus, which functions as an opening for the extrusion of the spinneret when the cocoon is woven, is minute, and lies on the upper side of the last segment near the posterior border.

Myrmeleon texanus, Banks.

Larva —Length including mandibles, 12 mm. (my specimens are not apparently full grown). Head somewhat rectangular, suddenly narrowed behind, emarginated in front, thicker behind than in front. Ocular peduncles (Fig. 4, *o*) short, conoid, each with six eyes, three of which are in a row on the end of the peduncle, two more in line behind the middle one of the first three, and the sixth near the outer margin. The antenna (Fig. 4, *a*) reaches the first mandibular tooth, and consists of a variable number of segments, from twelve to fourteen, first segment large, three and one half times as long as broad, second more slender but of about the same length ; remainder of antenna tapering toward the tip and composed of short segments ; terminal segment as long as preceding two, ending in a small hair. Mandible (Fig. 3, *m*) stout, distal tooth longest, proximal shortest. First joint of palpus (Fig. 4, *A*) a little longer than broad and about twice as long as the three remaining joints together ; second joint slender ; third about half as long as second ; fourth nearly as long as second and third together, pointed at tip, swollen on anterior side. The abdomen varies in size and shape according to condition of the larva. Eighth abdominal segment with a pair of short horn-shaped projections on posterior border below (Fig. 6, *x*). The whole body clothed with stiff hairs. Hair on lateral and anterior margins of head very long ; sub-

mentum (Fig. 2, *B*, *sm*) devoid of hair. Hairs on lateral margins of mandibles quite long and stiff; one spine in front of distal mandibular tooth, from two to four spines in each space between consecutive teeth, most often three, least often four. A villosity on each anterior lateral margin of the mesothorax above, inward from which is a smaller one. A villosity on each posterior lateral corner of metathorax above. A row of villosities on each side of the ventral surface of the abdomen, parallel with the margin. Two parallel rows of villosities (or rather tufts of bristles) on each side of abdomen. There is a transverse row of spines on upper surface of last abdominal segment; on the ventral surface a row of spines near the free border each side, the anterior spine longest, each succeeding one shorter; another row of three spines each side, parallel to the preceeding; a pair of smaller spines near the anterior border; a row of six stout cylindrical spines on posterior border, preceded by a row of four similar spines. The larva is yellow with brown spots and markings; all hairs are black. Five spots on dorsal surface of head; one larger spot on anterior border, behind which is a pair of triangular ones, succeeded by a pair of elongate spots reaching from the middle of the head to the posterior border, nearly touching behind, and diverging in front. Two pairs of large spots on ventral surface of head, set far apart; anterior pair narrow, diverging in front; posterior pair larger, nearly circular. Two elongate spots on each side of head, one near the middle, one near posterior border. Ocular peduncles and eyes black. Antenna yellow, shaded into fuscous toward tip. Curved portion of mandible and tips of teeth ferruginous. Terminal segment of palpus brown. The thorax has on upper surface a mid-dorsal broken stripe and two longitudinal rows of spots which diverge behind; thorax is spotted below. The metathorax has a black spot near each anterior lateral border above. The metathorax, coxæ and femurs are sometimes striped longitudinally; all the ungues are fuscous. The abdomen has a mid-dorsal broken stripe, on each side of which are two longitudinal rows of spots curving inwards behind, the inner one of smaller spots; first and second segments each having a black spot near each lateral border above; a mid-ventral row of minute spots, on each side of which are two rows of spots curving inwards behind.

Six specimens from Galveston, Texas, June, 1900.

Myrmeleon rusticus Hagen.

Larva.—Length, including mandibles, 14 mm. Similar to the preceeding (I will describe this larva by comparing it with the preceding). Head slightly variable in shape, generally narrower behind. Antenna of thirteen to fifteen segments. From two to three spines between each two consecutive madibular teeth, more often two. Markings variable in size and shape in individuals of the same locality and to a greater extent in individuals of different localities. Specimens from Laredo, Texas, are not very different from *M. texanus* in marking, while the markings on specimens from Austin, Texas, are larger and darker, being fuscous or black.

Anterior pair of spots on lower surface of head nearly touch on the median line; posterior pair are elongate, wider apart and diverge behind. There are several additional spots on upper side of thorax. There are many additional minute spots on abdomen. In darker specimens the two rows of spots each side of mid-dorsal stripe have united to form a broken stripe.

Habitat.—Texas, New Mexico.

A New Hesperid.

By Henry Skinner.

Pamphila viereckl n. sp.

Male.—Expands 43 mm. Primaries. Upper side. Light grayish brown in color. There are three small sub-apical spots on the costa; an hour-glass shaped spot at the end of the discal cell. This spot may be nearly or quite divided into two by a central constriction. There is a small spot at the origin of the upper median interspace and a larger sub-rectangular spot in the second median interspace. These two in conjunction with the spot in the cell make a triangle. In all but one specimen there is an additional spot above the last median nervure. Secondaries. The color immaculate. Fringes cinereous. The spots of the primaries are white and translucent. Underside. Primaries: Lighter in color with the spots repeated excepting the one near the interior margin. Secondaries: Light gray with a brown line near center of the wing, 5 mm. in length and parallel with marginal curve of the wing.

Female.—Expanse 46 mm. Marked like the male but with the spots larger.

Described from 6 ♂ 2 ♀.

Types in the collection of the Academy of Natural Sciences of Philadelphia.

Taken by Henry L. Viereck in Dry Canon, Alamogordo, New Mexico, May 8th to 13th. Imago feeds on the flowers of *Opuntia*, prickly pear.

This species is allied to *deva*, described by Mr. W. H. Edwards in Trans. Am. Ent. Soc., v, 292, 1876. It is lighter in color above and below than *deva*. *Deva* lacks the spot at the end of the cell. I have seen many specimens of *deva* from South Arizona and have four males and ten females before me at this writing and none have spots at end of discal cell, excepting two females which have a pin-point trace. The two species in question may be separated at a glance by the differ-

ence in color alone. *Deva* is the larger and more robust species of the two. Mr. W. H. Edwards has evidently described *vierecki* in mistake for *deva*, in Papilio ii, 138, 1882. I have a very large series of *deva* in my own collection and one female of *vierecki*, which I have had without a name for many years. The type of *deva* came from Prescott, Arizona, and most of the specimens I have are from Mt. Graham, Arizona. Godman and Salvin, in the Biologia Centrali Americana, Rhop. ii, 492, 1900, erect the genus *Atrytonopsis* for *deva*. What they figure as *A. python* ♀ is *pittacus* ♀. They suggest the possibility of this error.

DR. M. E. HOAG, of Maxwell, Iowa, contemplates making a change in his business affairs, and will be unable to negotiate any new exchanges for the present. Part of his time will probably be spent abroad. Correspondents will please take notice.

"LAST summer I was coming across the meadows this side of Atlantic City N. J., on my wheel, when my attention was attracted by the sound of a cow bell. It had such a strange, unusual sound that I dismounted to investigate, and soon encountered a huge mosquito. She had eaten the cow and was ringing the bell to attract the calf, that she might devour that also."—Referred to the State Entomologist to establish the truth of this.

A MT. AIRY girl sat on the porch steps and watched the fireflies flitting about through the trees. "I wonder if it is true that they get into haymows of barns and set fire to them," she remarked. The other people on the porch laughed with scorn. "Well, I read about it in the paper," said the girl, waxing indignant. "Only yesterday there was a piece that was headed: 'Work of Firebugs,' and then went on to tell how a barn had been set on fire and was totally destroyed." And after this explanation she still continued to wonder why the other people laughed.

Animal Activities.—A First Book in Zoölogy. By Nathaniel S. French, Ph. D. Longmans, Green & Co., 91 Fifth Avenue, New York. This is a work of 262 pages and 205 illustrations. Directions are given for collecting and preserving the material needed for study. An excellent feature is a vocabulary of the terms used at the end of each chapter. The system of questions is also a very valuable means of imparting information when the student is expected to answer them from an examination of the actual specimens. Insects receive considerable attention from the standpoint of anatomy and physiology. We think the work will prove useful as an elementary guide and we can recommend it.—H. S.

ENTOMOLOGICAL NEWS.

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Entomological Literature.

COMPILED BY H. L. VIERECK AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

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1. Proceedings of the Academy of Natural Sciences of Philadelphia, liii.—**2.** Transactions of the American Entomological Society, Philadelphia, xxvii.—**3.** American Naturalist, Cambridge, Mass., xxxvi.—**4.** The Canadian Entomologist, London, Ont., xxxiv.—**5.** Psyche, Cambridge, Mass., ix.—**6.** Journal of the New York Entomological Society, x, No. 2. —**7.** United States Department of Agriculture, Washington.—**9.** The Entomologist, London, xxxv.—**12.** Comptes Rendus l'Academie des Sciences, Paris.—**13.** Comptes Rendus Societe de Biologie, Paris, cxxxiv.—**21.** The Entomologist's Record, London, xiv.—**35.** Annales de Societe Entomologique de Belgique, Brussels, xlv.—**36.** Transactions of the Entomological Society of London, 1902.—**37.** Le Naturaliste Canadien, Chicoutimi, xxix.—**38.** Wiener Entomologische Zeitung, Vienna, xxi, heft v.—**49.** Termeszetrajzi Füzetek, Budapest, xxv.—**50.** Proceedings of the United States National Museum, Washington, xxiv.—**68.** Science, New York, (n. s.) xv.—**75.** Annual Report of the Entomological Society of Ontario, London, 1901.—**79.** Le Nature, Paris.—**97.** Zeitschrift für Wissenschaftliche Zoologie, Leipsig, lxxi, heft 4.—**116.** Biological Bulletin, Boston, iii —**143.** Ohio Naturalist, Columbus, ii, No. 8.—**148.** Bulletin of the New York State Agricultural Station, Geneva.—**156.** Zeitschrift für Systematische Hymenopterologie und Dipterologie, Teschendorf, ii.—**159.** Allgemeine Zeitschrift für Entomologie, Neudamm, bd. vii.

THE GENERAL SUBJECT.—Anon. La chasse des insects en hiver, **37,** p. 91.—**Ball, E. D.** A simple form of accessions catalogue, **7,** Bull. 3, n. s., p. 37.—**Cockerell, T. D. A.** Some insects of the Hudsonian zone in New Mexico. **5,** p. 346. Diptera, Lepidoptera and Hymenoptera.—**Cook, M. T.** Galls and insects producing them, **143,** p. 263.—**Dewitz, M. J.** La suppression de la métamorphose chez des larves d'insectes, **13,** liv, No. 22, pp 747-48 —**Evans, J. D.** Collecting at light in 1901, **75,** p. 78.—**Fletcher, J.** Entomological Record for 1901, **75,** p. 99.—**French, N. S.** Animal Activities [six chapters on Insects], New York, 1902.—**Fyles, T. W.** Annual address of Pres. of Ent. Soc. of Ontario. The importance of entomological studies to the community at large, **75,** p. 13.—**Hendel, F.** Wird die Art durch die Form der secundären Genital organe abgestempelt? Wiener Ent. Zeitung, Vienna, xxi July, iv heft, p. 83.—**Lochhead, W.** The hibernation of insects, **75,** p. 74. —**McClung, C. E.** The Accessory Chromosome—Sex determinant? **116,** p. 43.—**Moffat, J. A.** Notes on the

season of 1901, **75,** p. 40.—**Osten Sacken, C. R.** Record of my life work in entomology, ii, Heidelberg, 1902.—**Prowazek, S.** Vital färbungen an Insekten, **159,** p. 12.—**Stevenson, C.** Commercial Entomology, **75,** p. 113.—**Walker, E. M.** A collecting trip in Southwestern Ontario, **75,** p. 85.—**Webster, F. M.** The trend of insect diffusion in North America, **75,** p. 63.—**Winn, A. F.** Milk-weed at dusk, **75,** p. 82.

ECONOMIC ENTOMOLOGY.—**Berkeley, W. N.** Laboratory work with mosquitoes. Pediatrics Laboratory, New York, 1902.—**Britton, W. E.** First Report of the State Entomologist of Connecticut for year 1901, New Haven.—**Embleton, A. L.** On the economic importance of the parasites of Coccidæ, **36,** pp. 219-229.—**Felt, E. P.** The Hessian Fly in New York State, **7,** Bull. 31, n. s., p. 22. Observations on forest and shade tree insects in the State of New York, **7,** Bull. 31, n. s., p 63.—**Gillette, C. P.** Life History studies on the codling moth, **7,** Bull., 31, n. s., p. 5. Insects and Insecticides, Bull. 71, The Agri. Exp. Sta. of the Agri. Coll. of Colorado, Fort Collins. Notes on some Colorado insects, **7,** Bull. 31, n. s., p. 51.—**Gossard, H. A.** Review of White-fly investigations, with incidental problems, **7,** Bull. 31, n. s., p. 68.—**Herrera, A. L.** La Plaga de Mosquitos en la Ciudad de Mexico, Mem. y Rev. Sociedad Cientifica Mexico, Tomo xvi, p. 207.—**Hopkins, A. D.** Insects detrimental and destructive to forest products used for construction material, **7,** Bull. 31, n. s., p. 60. Insect enemies of the pine in the Black Hills forest reserve, **7,** Bull. 32, n. s.—**Howard, L. O.** How insects affect health in rural districts, **7,** Farmer's Bull., No. 155.—**Kirkland, A. H.** The shade tree insect problem, Boston, Dec. 3, '01. Notes on four imported pests, **7,** Bull. 31, n. s., p. 93.—**Lochhead, W.** Injurious insects of the season 1901, **75,** p. 40.—**Lowe, V. H.** Miscellaneous Notes on Injurious Insects, II (See Hemiptera, Lepidoptera and Coleoptera), **148,** Bull. No. 212.—**Murtfeldt, M. E.** Drought, heat, and insect life, **7,** Bull., 31, n. s., p. 97.—**Scott, W. M.** A preliminary note on a new species of *Aphis,* injurious to peaches and plums in Georgia, **7,** Bull. 31, n. s., p. 56.—**Scott, W. M.,** and **Fiske, W. F.** Jarring for the Curculio on an extensive scale in Georgia with a list of the insects caught, **7,** Bull. 31, n. ., p. 24.—**Sirrine, F. A.** Treatment for San José Scale in Orchards. II. Spraying with kerosene and crude petroleum, **148,** Bull. No. 213. Treatment for San José scale in Orchards, Orchard Fumigation, **148,** Bull. 209.—**Smith, J. B.** The mosquito campaign in New Jersey, **68,** p. 899. Practical suggestions for mosquito control, New Jersey State Agri. Expt. Sta. Modern method of studying and dealing with horticultural insect pests, from the Rept. N. J. Hort. Soc., Jan., 1902. Nursery inspection and notes on crude petroleum and its effects upon plants and insects, office of Expt. Sta., Bull. 99. Quarantine against foreign insects ; how far can it be effective? Proc. of the 19th Ann. Meeting of the Soc. for the Promotion of Agricultural Science, 1898. Treatment for San José Scale in Orchard and Nursery, Dept. Agri. of Pennsylvania, Bull. No. 90.—**Webster, F. M.** The common cheese mite (*Tyroglyphus siro*) living in *Sporotrichum globuliferum,* **75,**

p. 73. The imported Willow and Poplar *Curculio*, **75,** p. 67.—**Webster, F. M.,** and **Newell, W.** Insects of the year in Ohio, **7,** Bull. 31, n. ser., p. 84.

ARACHNIDA.—**Banks, N.** New genera and species of Acarians, **4,** p. 171. Some Arachnida from New Mexico,* **1,** p. 568.—**Cambridge, F. O. P.** Arachnida Araneidea (Biologia Centrali-Americana), **15,** pp. 337-360, pls. xxxii and xxxiii. New species of spiders belonging to the genus *Clenus*, with supplementary notes, **11,** (7) ix, pp. 401-415.—**Riley, W. A.** The so called mandibles of spiders, **5,** p. 368.—**Simon, E.** Descriptions d'Arachnides Nouveaux de la Famille des Attidæ (Suite 1), **35,** pp. 141-161.—**Ward, H. B.** The subdermal mite occurring among birds, **68,** p. 911.

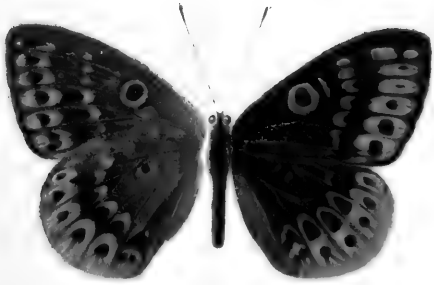
MYRIOPODA.—**Chamberlain, R. V.** Utah Chilopods of the Geophilidæ,* **3,** xxxvi, pp. 473 480. *Henicops dolichopus*, a new chilopod from Utah, **50,** p. 797.—**Rossi, G.** Sulla locomozione dei Miriapodi, Atti della Soc. Ligustica di Scienze Nat. e Geog., Genova, xii, p. 169.

THYSANURA.—**Folsom, J. W.** Collembola of the grave,* **5,** p 363.—**Lécaillon, A.** Sur un testicule 'd '*Anurophorus laricis* Nic., Bulletin de Société Philomathique de Paris, n. ser., iv, p. 46.

MALLOPHAGA.—**Kellogg, V. L.** Are the Mallophaga degenerate Psocids? **5,** p. 339.

ORTHOPTERA.—**Baumgartner, W. J.** Spermatid transformations in *Gryllus assimilis*, with a special reference to the nebenkern, Kansas University Science Bulletin, Vol. i, No. 2, p. 47.—**Bolivar, J.** Un nuevo ortoptero mirmecofilo *Attaphila Bergi*, Com. del Museo Nac. de Buenos Aires, i, No. 10, p. 331, December, 1901.—**Bordas, J.** Structure du réceptacle urinaire et du canal excréteur (urétre) des tubes de Malpighi chez les "Gryllidæ," **13,** liv, p. 639.—**Burr, M.** The new system of the Dermaptera, **21,** p. 156. Some notes on the classification of earwigs, **21,** p. 96. A monograph of the genus *Acrida*, Stal (= *Truxalis* Fabr.) with notes of some allied genera, and descriptions of new species. **36,** p. 149.—**Caudell, N. A.** A new species of *Melanoplus* from Arizona,* **4,** p. 169.—**Fyles, T. W.** Crickets, **75,** p. 90.—**Hancock, J. L.** The Tettigidæ of N. A.,* Chicago, 1902.—**Rehn, J. A. G.** Notes on Southern California Orthoptera,* **4,** p. 141.—**Walker, E. M.** Entomological Record, 1901, Orthoptera [Canadian], **75,** p. 108.

HEMIPTERA.—**Baker, C. F.** Another note of *Dellocephalus melsheimerii*. **5,** p 348.—**Ball, E. D.** New North American Fulgoridæ,* **4,** p. 147. **Buckton, G. B.** Monograph of the Membracidæ,* part III, 8 colored plates; Monographiæ Entomologicæ, II, London, 1902.—**Cockerell, T. D. A.** A new *Aspidiotus* from *Pinus sylvestris*,* **143,** p. 287. Additions to the fauna of Mexico (Bees and Coccidæ), **9,** p. 177. A contribution to the knowledge of the Coccidæ,* **11,** (7) ix, pp. 450-456.—**Distant, W. L.** Rhyncotal Notes, Heteroptera Tingitidæ, Phymatidæ and Aradidæ, **11,** ix (7th ser.), p. 353.—**Embleton, A. L.** On the economic importance of the parasites of Coccidæ, **36,** p. 219.—**Fernald, C. H.** On the genus Leca-



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DESCRIPTION IN CANADIAN ENTOMOLOGIST, VOL. XXXIII, PAGE 268, 1901.

nium, **4,** p. 177.—**King, G. B.** Coccidæ of British North America,* **4,** p. 158. Errata (King's Coccidæ of British N. A.), **4,** p. 166.—**Kirkaldy, G. W.** Memoir upon the Rynchotal family *Capsidæ*, Auctt (part), **36,** pp. 243-270. Miscellanea Rhynchotalia (4 Heteroptera), **4,** xxxv, p. 164.—**Lowe, V. H.** The Periodical Cicada, **148,** Bull. No. 212.—**Osborn, H.,** and **Ball, E. D.** A review of the N. Amer. species of *Athysanus* (Jassidæ),* **157,** p. 231.—**Pergande, Theo.** The history of two species of plant-lice, inhabiting both the witchhazel and birch, **7,** Bull. Technical series 9.—**Pettit, P. H.** The scale insects or Coccidæ, Second Report Michigan Academy Sciences, Lansing, p. 78.—**Sanders, J. G.** A New *Phenacoccus* on *Platanus occidentalis*,* **143,** p. 284.—**Sirrine, F. A.** See Economic Entomology, **148,** Bull. No. 213.

NEUROPTERA.—**McClendon, J. F.** The Life History of *Ulula hyalina* Latreille, **3,** xxxvi, pp. 421-429.

ISOPTERA.—**Silvestri, F.** Ergebnisse biologischer Studien an Südamerikanischen Termiten, **159,** p. 173.

LEPIDOPTERA.—**Bachmetjew, P.** Kalorimetrische Messungen an Schmetterlingspuppen, **97,** pp. 550-624.—**Beutenmüller, W.** Description of a new *Sesia*, **6,** p. 125.—**Bordas, L.** Sur l'appareil digestif de quelques Lépidoptères, **13,** liv, No. 22, pp. 769-771.—**Busck, A.** Notes on North American Tineina, **6,** p. 89. A Review of the N. Amer. moths of the genus *Depressaria*, Haworth, with descr. of new species,* **50,** pp. 731-749, 1902.—**Chapman, T. A.** The classification of *Gracilaria* and allied genera, **9,** xxxv, 159. On Hypotianæ, a new sub-family of Pyralidæ, **36,** p. 49.—**Cockerell, T. D. A.** See general subject.—**Dixey, F. A.** Notes on some cases of seasonal Dimorphism in Butterflies, with an account of Experiments by Mr. G. A. K. Marshall, **36,** pp. 189-218.—**Dognin, P.** Description d'un Hétérocère Nouveau de l'Amerique du Sud, Le Naturaliste (2d ser.), xxiv, p. 121, Paris, May 15, 1902. Hétérocères Nouveaux de l'Amerique du Sud, **65,** pp. 173-226, 304-335.—**Druce, H.** Descr. of some new species of Lepidoptera,* **11,** ix, p. 321.—**Dyar, H. G.** A Generic subdivision of the genus Plusia, **6,** p. 79. The larva of *Enthisanotia timais*, **6,** p. 126. Life Histories of North American Geometridæ, xxxii, **5,** pp. 344-371.—**Fischer, E.** Weitere Untersuchungen über die Vererbung erworbener Eigenschaften, **159,** p. 201.—**Fletcher, J.** The painted lady butterfly (*Pyrameis cardui*), **75,** p. 54.—**Gibson, A.** Note on the larvæ of *Penthina hebesana*, Walk, **4,** p. 182.—**Gillmer, M.** Fünf Zwitter, **159,** p. 208.—**Grote, A. R.** Results obtained from a search for the type of *Noctua* Linn., and conclusions as to types of Huebnerian noctuid genera represented in the North American fauna, Proc. Amer. Philos. Soc., xli, p. 4.—**Heylaerts, F. J. M.** Description d'une Psychide inédite de la Republique Argentine, *Chalia künckelii*, **35,** p. 97.—**Lowe, V. H.** *Papilio asterias* attacking Celery, **148,** Bull., No. 212.—**Lyman, H. H.** North Amer. Gall webworms, **75,** p. 57. Mr. Grotes' Criticisms, **4,** p. 167.—**Kearfott, W. D.** A revision of the North American species of the genus Choreutes, **6,** p. 106.—**Meyrick, E.** Descriptions of new Australian Lepi-

doptera, **36,** p. 25.—**Moffat, J. A.** *Anosia archippus* does not hibernate, **75,** p. 78; Acknowledgments, **4,** p. 170.—**Ottolengui, R.** Notes on Calocampa with descriptions of new species, **6,** p. 77. Plusia and allied genera with descriptions of new species, **6,** p. 57.—**Packard, A. S.** Two new genera of Bunænine African moths, **6,** p. 100.—**Pagenstecher, A.** Die arktische Lepidopteren fauna, Fauna Arctica, ii, p. 200.—**Ragonot, E. L.** Edited by **Hampson, G. F.** Monographie des Phycitinæ et des Galleriinæ,* 34 col. pls. Memoirs sur les Lépidoptères, Tome, viii, St. Petersbourg, 1901.—**Scudder, S. H.** Group characteristics of some North American Butterflies, **5,** p. 370.—**Seifert, O.** Contributions to the knowledge of North American Arctiidæ, iii, **5,** p. 82.—**Walsingham** and **Durrant.** Revision of the nomenclature of Micro-Lepidoptera (cont.), The Entomologist's Monthly Magazine, London (2), xiii (Vol. xxxviii), London, p. 163.—**Weeks, A. G.** New Diurnal Lepidoptera from Bolivia, **4,** p. 138.

DIPTERA.—**Aldrich, J. M.** Dolichopodidæ of Grenada, W. I., Kansas Univ. Science Bull., Vol. i, No. 3, p. 75.—**Becker, H.** Die Meigen'schen Typen der sogen Muscidæ acalypteræ (Muscaria holometopa), in Paris u. Wein, **156,** 2 jhg., 4 hft., p. 209.—**Berkeley, W. N.** See Economic.—**Bezzi, M.** Neue Namen für einige Dipteren gattungen, **156,** jhg., 3 hft., p. 190.—**Brues, C. T.** Notes on the larvæ of some Texas Diptera,* **5,** p. 351.—**Cockerell, T. D. A.** Some Gall insects,* **4,** p. 183. See general subject.—**Escherich, K.** Zur Entwicklung des Nervensystems der Musciden, mit besonderer Berücksichtigung des sog. Mittelstranges, **97,** pp. 525-549.—**Giard, A.** Sur la spermatogenèse des Dipteres du genre *Sciara*, **13,** p. 1124. Sur l' ethologie des larves de *Sciara medullaris* Gd., **12,** p. 1179.—**Kertèsz, K.** Uebersicht der Sudamerikanischen Ceria-Arten, **49,** p. 85. Neue Südamerikanische Chrysopila-Arten, **49,** p. 145. Ueber die Familie der Rhiphiden, **49,** p. 4.—**Lochhead, W.** Nature study lessons on mosquitoes, **75,** p. 94.—**Long, W. H.** New species of *Ceratopogon*,* **116,** p. 3.—**Melander, A. L.** Two new Embiidæ,* **116,** p. 16.—**Ricardo, G.** Further Notes on the Pangoninæ of the Family Tabanidæ in the British Museum Collection, **11,** ix, pp, 424-438.—**Schnabl, J.** *Limnospila* n. g. Anthomyidarum, **38,** p. 107.—**Smith, J. B.** Notes on the early stages of *Corethra Brakeleyi*, **4,** p. 139.—**Speiser, P.** Besprechung einiger Gattungen und arten der Diptera pupipara, **49,** p. 327. Studien über Diptera pupipara, **156,** 2 jhg., 3 hft., p. 145.—**Stein, P.** Einige Wiedemann'sche u. Jaennicke'sche aussereuropäische Anthomyiden, **156,** 2 jhg., 3 hft., p. 129.—**Tutt, J. W.** Migration and Dispersal of Insects, Diptera: **21,** p. 173.

COLEOPTERA.—**Belon, R. P.** Le Genre *Cortilena* Motsch (Lathridiidæ), **35,** pp. 86-89.—**Chapais, J. C.** La Calandre des Greniers, La Selandrie de la Ronce, **37,** p. 65.—**Kerremans, C.** Considerations sur les Buprestides, **35,** pp. 165-173.—**Knaus, W.** Additions to list of Kansas Coleoptera for 1899 and 1900, Trans. Kans. Acad. Sciences, vol. xvii, p. 109.—**Lameere, A.** Revision des Prionides (II Anoplodermines), **35,** p. 191. Étude sur la Phylogénie des Longicornes, **35,** pp. 314-323.—**Leon, N.** Recherches morphologiques sur les pieces labiales des Hydrocores,

Sassey (Roumanie), 1901.—**Leng, C. W.** Revision of the *Cicindelidæ* of Boreal America,* xxviii, pp. 93-183.—**Lowe, V. H.** White grubs attacking aster plants, **148,** Bull. No. 212.—**Luze, G.** Eine neue Staphylinidengattung der Tribes *Aleocharini*, Verh. der K. K. Zool. Bot. Gesell. in Wien, Vienna, lii, 5 hft., p. 304.—**Moffat, J. A.** Acknowledgments, **4,** p. 170.—**Ouellet, C. J.** Liste de Coleopteres, **37,** p. 82.—**Pic, M.** Diagnosis d' Anthicidæ Exotiques, **35,** pp. 89 91. Deuxième Supplément a ma liste des Anthicides, **35,** pp. 248-257.—**Roy, E.** L'Orthophagus nuchicornis Lin., **35,** p. 81.—**Schenkling, C.** Die Käfergattung *Otiorhynchus* Germ, Insekten Börse, Leipsig, 19 jhg., No. 18, p. 140.—**Schroeder, C.** Die Variabilität der *Adalia bipunctata* L. (col.) gleichzeitig ein Beitrag zur Descendenz-Theorie (Fortsetzung), **159,** pp. 5, 37, 65.—**Sharp, D.** Coleoptera (Biologia Centrali-Americana), Vol. ii, part 1, **15,** pp. 622-633, pl. xix.—**Webster, F. M.** See Economic Entomology.—**Weise, J.** Neue Coccinelliden, **35,** pp. 273-286.—**Wickham, H. F.** Two new Silphidæ from Colorado,* p. 180.

HYMENOPTERA.—Ashmead, W. H. Classification of the Fossorial Predaceous and Parasitic Wasps,* **4,** p. 131-163. A new species of Diapriids from Texas,* **116,** p. 15, fig. p. 12. A new *Catolaccas* on *Sitotroga cerealella*, Oliv,* **5**, p. 345. Papers from the Harriman Alaska Expedition, xxviii, Hymenoptera,* Proc. Washington Academy of Sciences, iv, pp. 117-274, May 29, 1902.—**Bradley, J. C.** A genus and species of Aquatic Hymenoptera, **4,** p. 179.—**Cameron, P.** On some new genera and species of Hymenoptera (Ichneumonidæ, Chrysididæ, Fossores and Apidæ), **9,** No. 470, p. 179.—**Clements, A. L.** Les Chasseurs d'araignées, **79,** May 31, '02, p, 408.—**Cockerell, T. D. A.,** and **Atkins, E.** Contributions from the New Mexico Biological Station, xiii, On the bees of the family *Nomadidæ* of Ashmead, **11,** No. 55, p. 40. See general subject ; some gall insects,* **4**, p. 183. Additions to the fauna of Mexico (Bees and Coccidæ), **9,** p. 177.—**Crawford, J. C.** North American bees of the genus *Agapostemon* Guerin,* Proc. Nebraska Academy of Sciences, Lincoln, vii, p. 156.—**Ducke, A.** Ein wenig bekanntes Chrysididen genus *Amisega* Cam., **156,** 3 hft., p. 141. Neue Goldwespen von Para, **156,** 4 hft., p. 204. —**Emery, C.** Notes sur les Sous-Familles des Dorylines et Ponérines (Famille des Formicides), **35,** pp. 32-54. A propos de la Classification des Formicides (Réponse à l'article publié sous le méme titre par M. le Prof. Forel), **35,** pp. 197-198.—**Forel, A.** Fourmis Termitophages, Lestobiose, Alta tardigrada, Sous-genres d'Euponera, **35,** pp. 389-398. Variétés Myrmécologiques,* **35,** pp. 334-382. A propos de la Classification des Fourmis, **35,** pp. 136-141. Fourmis Mexicanies récoltées par M. le Professeur W. M. Wheeler, **35,** pp. 123-136.—**Fox, W. J.** Contributions to a knowledge of the Hymenoptera of Brazil, Eumenidæ [continued] (genus *Odynerus*), **1,** p. 44.—**Friese, H.** Beitrag zur Apiden fauna der grossen Antillen, **156,** 4 hft., p. 196. Zur Synonomie der Apiden, **156,** 3 hft., p. 187. Zwei neue Bienengattungen, **156,** 3 hft., p. 185.—**Habermehl.**—*Hoiocrytus* n. g. Cryptidarum (Africa), **156,** 3hft., p. 135.—**King, Geo. B.** Further

Notes on New England Formicidæ, **5,** p. 367.—**Konow, F. W.** Eine neue Eriocampa Htg., **156,** 3 hft., p. 140. Systematische Zusammenstellung der bisher bekannt gewordenen Chalastogastra, **156,** 4 hft., p. 257.—**Melander, A. G.** The nesting habit of Anthidium, **116,** p. 27.—**Melander, A. G.,** and **Brues, C. J.** New species of Hymenoptera,* **116,** p. 33.—**Mocsary, A.** Species aliquot Chrysididarum novæ, **49,** p. 339.—**Muckermann, H.** The structure of the nest of some N. A. species of Formica, **5,** p. 355.—**Perkins, R. C. L.** Four new species and a new genus of Parasitic Hymenoptera (Ichneumonidæ sub. fam. Ophioninæ) from the Hawaiian Islands, **36,** p. 141. On the generic characters of Hawaiian Crabronidæ. Four new genera characterized, **36,** p. 145.—**Plateau, F.** Observation sur le Phénomène de la constance chez quelques Hyménoptéres, **35,** pp. 56 83.—**Syepligeti, Gy.** Tropische Cenocœlioniden und Braconiden aus der sammlung der Ungarischen National Museums, **49,** p. 39.—**Wasmann, E.** Neues über die zusammengesetzten nester und gemischten Kolonien der Ameisen, **159,** pp. 1, 33, 72, 100, 136, 167, 206.—**Wheeler, W. M.** Notices Biologique sur les Fourmis Mexicanies (Notes on Mexican Ants collected by W. M. Wheeler), **35,** pp. 199-205.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

On June 12th we received a News subscription blank and one dollar. The blank lacked name and address. The letter bore post mark New York. Please let us know your name.

Mr. Chas. W. Leng's Revision of the Cicindelidæ of Boreal America (Trans. Am. Ent. Soc.) is out, and reflects great credit on the author. It seems to be a conservative and painstaking piece of work. The typography, etc., is a credit to the editor of the Transactions and the printer.

There has been considerable activity in collecting during this Spring and Summer. J. A. G. Rehn and Henry L. Viereck have been at work in the Sacramento Mountains, in New Mexico, on behalf of the Academy of Natural Sciences of Philadelphia. Two hundred birds, mammals and reptiles; five hundred shells; two thousand plants and twenty-five thousand insects were collected.

Mr. J. C. Bradley is collecting near Dingman's Ferry in Pike County, Penna.

Prof. T. D. A. Cockerell has done some collecting at Beulah, New Mexico.

Mr. H. H. Newcomb, of Boston, expected to visit the San Juan country in Southwestern Colorado.

Mr. Wm. Beutenmuller and Dr. E. C. Van Dyke spent some time collecting near Mt. Mitchell, N. C.

MR. ERNST J. OSLAR has been collecting in Arizona.

PROF. A. J. SNYDER and the Comstock brothers are making a wagon trip across the Rockies in Colorado.

Mr. ERICH DAECKE is constantly adding species to the New Jersey list. His stamping ground is Southern New Jersey.

MR. WARREN KNAUS, of McPherson, Kansas, spent some time at Cloudcroft, Sacramento Mountains, New Mexico.

J. A. G. REHN, G. M. Greene, Chas. T. Greene, W. S. Huntington, and C. W. Fenninger are going to Lehigh Gap, Pa., to collect.

MR. LANCASTER THOMAS is again among the mountains of North Carolina, and he will doubtless add to the list of North Carolina Lepidoptera as usual.

HENRY W. WENZEL and his son, Harry, are trying to exterminate the Coleoptera in the mountains of North Carolina. We are expecting big returns, as both father and son are famous collectors.

MR. O. C. POLING, of Quincy, Illinois, has been exploring the Tonto Basin, about one hundred miles south of Flagstaff, Arizona. Some new and many rare species were captured. He went through a very wild and interesting country, having been gone five weeks.

OTHERS not mentioned are doubtless doing good work, but neglected to advise us of their outings. The people that like to read Notes and News never send us any.

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.

NOTES ON LIME-SULPHUR-SALT WASH AS AN INSECTICIDE.

BY C. W. MALLY.

Agricultural Department, Cape Town, Africa.

The white peach scale, *Diaspis pentagona* Targ., is the most destructive scale pest of peach trees in the Colony. During the last ten years or more lime-sulphur-salt wash has been largely used for its destruction, and well made and thoroughly applied has given satisfactory results.

One peculiarity of the treatment is the fact,—observed by the Government Entomologist, Mr. Charles P. Lounsbury,—that, although the trees were thoroughly sprayed, much live scale could be found for some time afterward, and still at the

close of the season the trees would be quite free from scale. The following questions naturally suggested themselves :

1. Is the effectiveness of the wash due to the percentage of the scales killed at the time of treatment?

2. Does the coating on the trees prevent the successful attachment of the young scales?

3. If it prevents the attachment of the young scales is the entire combination necessary?

In order to get definite information on the points in question, the following tests were made by me, under Mr. Lounsbury's direction, at the Government wine farm, Constantia.

1. Lime-sulphur-salt wash, using 40 pounds of lime.
2. Lime-sulphur-salt wash, using 20 pounds of lime.
3. Lime-salt wash.
4. Lime wash.
5. Lime-sulphur sheep dip ; 1 part dip to 5 parts water.
6. Lime-sulphur sheep dip ; 1 part dip to 10 parts water.

The washes of the first four tests were prepared on the basis of the following formula : Unslaked lime, 40 punds ; sulphur, 20 pounds ; stock salt, 15 pounds ; water to make 50 imperial gallons. Ten pounds of lime and 20 pounds of sulphur were placed in the cooking kettle with 15 imperial gallons of water boiled until the sulphur was all dissolved. In tests 1 and 2 the remaining lime was slaked, the salt added, and while hot the two mixed with the lime-sulphur solution and the whole boiled for 30 minutes. No analysis was made of this batch of washes, but the lime-sulphur solution of another prepared in exactly the same way and with the same quality of lime, proved to contain lime and sulphur in solution in the ratio of 1 : 1.81. (by volume); another batch made with poorer, long slaked lime, contained a higher proportion of sulphur, namely, 1 : 2.07. It was noticed that, without exception, the proportion of sulphur was decreased by the addition of the extra lime, and that the half hour's hard boiling did not restore the apparent loss ; the ratio generally becoming about 1 : 1.60. In tests 3 and 4, lime and salt, and lime alone, respectively, were used in the proportion to water given in the formula for the complete wash. The sheep dip is a concentrated solution of combined lime and sul-

phur prepared for this department for the dipping of sheep under the provisions of the Sheep Scab Act. The analysis of ten drums, including the one used from in the experiments, showed the strength to be nearly uniform and the ratio of lime to sulphur to be about 1 : 2. In test 5 the strength of the wash in terms of the dissolved lime and sulphur was estimated to approximate that of the ordinary lime-sulphur-salt wash, while that used in test 6 was half this strength. It was desirable to test the sheep dip because it is a reliable article, easily procurable at moderate cost and ready for dilution with water.

Large bearing trees in consecutive rows of four trees each were selected for treatment and six similar trees reserved for "controls," making a total of thirty trees under observation.

Duplicate tests were made on the farm of Mr. Henry Myers, at Simondium, near Paarl, about 40 miles from Cape Town, using a large number of trees under a great variety of conditions, three series of four trees each being thoroughly drenched with water one, two and three days after treatment with the hope of getting some idea of the effect of a heavy rain soon after spraying.

Live scale and eggs were abundant on all of the trees, but in some cases at least 50 per cent. of the scales, other than those that had reproduced and died, were already dead, especially on the trunk and larger limbs—an unexplained fact often observed during the winter season in regard to both *Aspidiotus aurantii* Maskell and the species under consideration.

The wash in each case was applied while hot. The lot that was tested registered 155° F. in the tank. Six to eight inches from the nozzle the spray registered 140° F.; about two feet away, only warm ; farther away, cold. The advantage in keeping the solution hot is due to the fact that the soluble compounds show a tendency to crystallize when cold, especially if left standing over night. In such case considerable boiling is necessary to redissolve the crystals, otherwise they are apt to be left in the tank. Even though kept in suspension by the constant agitation of the mixture, the crystals will not only lodge on the tree unevenly but will be more easily removed by wind and rain.

The trees at Constantia were sprayed August 13 to 17, 1901, the usual time of application here in order that the treatment may serve for both the scale and the leaf-curl, the fruit buds starting about the first of September, depending on the season.

There was a light rain during the night after tests 1 and 2 were applied, but it had no appreciable effect on the appearance of the trees. The trees in the different tests could be distinguished easily by the color. One and 2 showed a distinct olive tinge, which was not quite so distinct in 1 as in 2 on account of the greater amount of lime. Three and 4 were very white, 3 slightly dull as compared to 4, while 5 and 6 showed only a peculiar light yellowish green tinge with no apparent coating. The lime coating was the coarsest of all and showed the greatest tendency to flake off, leaving considerable patches unprotected. The lime-salt wash was finer grained and adhered better than the lime. The lime-sulphur-salt wash is uniformly fine grained and adheres well, the trees still retaining the characteristic appearance to some extent by January 3, 1902, whereas on the other trees the coating has almost entirely disappeared.

The trees were carefully examined at frequent intervals, and it soon became apparent that in all of the tests only a very small percentage of the insects had been killed,—possibly the imperfectly protected ones,—and that the eggs escaped without injury. Oviposition continued the same as on the untreated trees. In some cases the waxy covering showed a tendency to slough off, leaving the insects exposed. In one instance the unprotected female was ovipositing freely, the eggs lodging in the mass of surrounding scale.

The eggs were hatching freely by October 1st, and it was with no little interest that the progress of the young scale was noted. Thus far, January 4, 1902, none of them have survived on the trees sprayed with lime-sulphur-salt, 1 and 2, nor on the trees sprayed with sheep dip, 5 and 6. On the trees sprayed with lime-salt and lime, the young have settled without any apparent difficulty, showing no appreciable preference for the patches where the lime had scaled off, thus showing that lime-salt and lime have no special preventive value. It should be

noted, however, that the lime, forming a granular coating on the tree, has a tendency to prevent the proper attachment of the waxy covering, thus causing a slight percentage of the young scales to slough off.

On the lime-sulphur-salt and the sheep dip trees the young scales attempt to settle but die *in situ*, and thousands of them can still be seen clinging to the bark, apparently held in place by the mouthparts.

Although the coating on the lime-sulphur-salt trees is much finer than on the lime-salt and lime trees, that is not a satisfactory explanation, because on the trees treated with sheep dip there is no apparent coating and the young scales die in the same way, showing that the soluble compounds form the essential part of the mixture. This is an important practical item here in the Colony,—good quicklime being both expensive and hard to obtain,—for it greatly reduces the cost of the wash as well as the difficulty in application.

The meteorological record shows a total rainfall of 10.145 inches from August 13, 1901 to January 3, 1902, distributed in 45 rains, not counting 4 "trace" records, as follows: August 13th, 0.005; 21st, 0.02; 22d, 0.04; 23d, 0.07; 24th, trace; 25th, 0.22; September 1st, 0.04; 2d, 0.04; 3d, 0.12; 7th, 0.11; 8th, 1.44; 9th, 0.10; 11th, 0.48; 12th, 0.37; 15th, 0.72; 16th, trace; 18th, 0.18; 28th, 0.04; 30th, 0.17; October 1st, 0.35; 4th, 0.75; 5th, 0.02; 6th, 0.14; 20th, 0.07; 21st, 0.01; 24th, trace; 25th, 0.20; 28th, 0.03; 30th, 0.02; 31st, trace; November 4th, 0.04; 5th, 0.13; 9th, 0.76; 10th, 0.07; 18th, 0.57; 19th, 0.63; 20th, 0.29; 21st, 0.11; 28th, 0.02; December 2d, 0.02; 8th, 1.00; 9th, 0.02; 11th, 0.09; 20th, 0.02; 26th, 0.05; 29th, 0.34; 30th, 0.01; January 2, 1902, 4.05; 3d, 0.17.

It will be noticed that the first heavy rain came September 8th, twenty-six days after tests 1 and 2, allowing ample time for the destruction of the old scale, but as stated above, very few seemed to succumb. Its effectiveness is limited to the destruction of the young scales, thousands of which emerged but, as far as can be determined, none of them have survived, although on the control trees the second generation is appear-

ing, January 3, 1902. The only explanation that suggests itself is that the frequent light rains, though they were not heavy enough to remove the soluble compounds, dissolved them sufficiently to destroy the young before these could form the protecting scale. The dead young scales vary considerably in size, suggesting that the larger ones emerged soon after one rain and the smaller ones just before the next.

The weak point in the life history of *Diaspis pentagona* Targ., is the fact that the scale is formed very slowly, for some time consisting simply of long, irregularly matted, waxy filaments easily penetrated under the influence of rain. Whether the young of species like *Aspidiotus aurantii* Maskell and *A. perniciosus* Comstock, which form a dense scale in a few days, can be destroyed in the same way is an interesting point that has not yet been determined.

It is clear, however from Californian experience, that lime-sulphur-salt wash is effectual against *Aspidiotus perniciosus* Comstock in that State. Different experimenters have reported it to fail under the climatic conditions of the Eastern States, but it seems likely that results were looked for too soon and observations discontinued before the wash actually became operative. Even though the results at first may be apparently negative, it seems quite possible that the after effect on the young scales of applications made just before the buds unfold will give results comparing favorably with those attained in the West.

Strangely enough, many of the old scales on the trees treated in the tests described are still alive and ovipositing, the young continuing to emerge but still failing to settle successfully. This great irregularity in development, together with the almost perfect protection by the scale, is the strong point in the life history of the species. On trees thoroughly sprayed with either lime-sulphur-salt wash or sheep dip, the only hope of survival seems to depend on the ability of the old scales to hold out until the rains reduce the soluble compounds of the wash sufficiently to render them harmless to the young.

Owing to martial law regulations it has not been possible to keep full notes on the tests made at Simondium, but the available records are in harmony with the observations made at

Constantia. The thorough drenching of the trees within three days after spraying apparently had no injurious effect.

In Bulletin No. 30, new series, Division of Entomology, U. S. Department of Agriculture, Mr. C. L. Marlatt records an interesting test with lime-sulphur-salt wash, but reports no definite observations after the first heavy rain. It would have been very interesting had the observations been continued several months longer so as to note the effect on the young scales as they emerged. Judging from Mr. Marlatt's statement that "the infested trees, especially those that had been pruned back, made a very vigorous growth, and the fruiting and growth of the others were entirely satisfactory," the young scales were probably destroyed as well, for, if *Diaspis pentagona* Targ. increases in the latitude of Washington as rapidly as it does here at the Cape, with 50 per cent. or more of the scales on the young wood alive, the trees would certainly be badly infested before the next dormant period.

Other similarly infected trees were sprayed at the same time with kerosene emulsion in varying strengths up to one part emulsion to two parts water, but the results were uniformly unsatisfactory. With whale oil soap at the rate of two pounds per imperial gallon, the destruction of the scale was apparently complete without injuring the tree. Weaker strengths, from one-quarter to one pound per imperial gallon, were not effectual in destroying the old scales, but the after effect on the young was similar, though not so marked, to that of the lime-sulphur-salt wash and the sheep dip. A similar after effect has been noticed in treating pear and citrous trees with soft soap, one pound to three imperial gallons of water, for the destruction of *Aspidiotus aurantii* Maskell, the old scales succumbing after a time, leaving the trees quite free.

The observations up to January 4, 1902, indicate:

1. Under South African conditions, neither lime-sulphur-salt wash nor lime-sulphur sheep dip have any marked insecticidal value for *Diaspis pentagona* Targ. after the scale is complete.

2. The young are destroyed soon after emerging, even though three months or more may have elapsed since the application.

3. Lime-sulphur wash, as represented by the lime-sulphur

sheep dip, is thoroughly effectual, making the great amount of lime called for by the formula unnecessary, thus reducing the cost of material as well as the difficulty of application.

4. Frequent light rains seem to be advantageous for the destruction of the young scales.

5. A coating of lime has little or no value in preventing the attachment of the young scales.

If possible, additional tests will be made during the dry season to determine whether the young scales will be destroyed to the same extent in the absence of rain.

Doings of Societies.

A meeting of the American Entomological Society was held June 26th, Dr. P. P. Calvert, President, in the chair. Fifteen persons were present. Mr. Huntington exhibited some Diptera which had been sent in butterfly papers and had arrived in good condition. Mr. Johnson said he had received *Criorrhina verbosa* from Olympia, Washington. Mr. Huntington had also received it from Vancouver.

Dr. Skinner exhibited specimens of *Cicada septendecim* var. *cassini*.

Mr. Wenzel spoke of finding the chimneys of the periodical *Cicada* at Castle Rock, Pa., and asked if reason for these formations had been discovered.

Mr. Johnson said he had found chimneys in burnt-over land and on low land. The hills nearby did not contain any. It was the sense of the meeting that the adults of this species in question do not feed. Observations had been made to try and discover adults feeding.

Mr. Hornig exhibited a gall found on the stem of a chestnut-oak. The speaker also described the feeding habits and moults of the larva of *Actias luna* which were fed on sour gum.

Dr. Castle spoke of the influence of under-feeding on the determination of sex.

Mr. Laurent exhibited a specimen of *Hemerophila unitaria* taken at Mt. Airy, Philadelphia, at light, on June 22nd. He believed it to be the second record for Pennsylvania.

Mr. J. A. G. Rehn exhibited pictures of the region around Alamogordo, New Mexico.

Dr. Calvert exhibited a male and a female dragonfly from Guatemala, marked as having been taken together, and belonging to an undescribed species of *Protoneura*.* The female has on each side of the dorsal surface of the front part of its mesothorax a two-pronged forked process, directed forward and upward, one prong lying above the other in a vertical plane. The male has the superior appendages at the apex of the abdomen two-branched, the branches lying in a horizontal plane. The inferior appendages are longer than the superior, but unbranched. Comparison of the two sexes suggests that in coitu each superior appendage of the male is received between the two prongs of the mesothoracic process of the female, and in this way a perfect interlocking would be the result. Although we have little exact information, it is usually believed that among the Agrioninæ (to which *Protoneura* belongs) it is the *prothorax* of the female which is clasped by the male. The speaker could not recall any other equally complicated *mesothoracic* structure for copulatory purposes on any of the Odonata, and few females show such a highly developed copulatory structure on any part of the body.

HENRY SKINNER, *Secretary.*

At the May meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, fourteen members were present.

Prof. Smith stated that the larvæ which Mr. Johnson gave him sometime ago turned out to be *Stegomyia fasciata*, of which he bred twenty specimens.

Mr. H. Wenzel stated that the egg masses from Anglesea, referred to at the last meeting, turned out to be grasshoppers.

Mr. Boerner stated that at Bellevue, Del., May 11th, he had taken three species of *Dicaelus—dilatatus, ambiguus* and *ovalis*, and upon May 18th he had taken *D. dilatatus* and *ovalis* at Arcola, Pa. He reported *Trechus chalybeus* from Westville, N. J.

* This species, for which I propose the name *Protoneura peramans*, will be described at length in the Biologia Centrali-Americana.—P. P. CALVERT.

Dr. Skinner reported that *Cicada septendecim* had been seen at Fairville, Chester County, Penna., on April 19th. This is the earliest record for the appearance of this insect in this locality. Discussed by Messrs. Daecke, Boerner and Skinner.

Prof. Smith said he had noticed *Cicada* cones to be most abundant in burnt over areas and the suggestion had been made that the heat caused them to appear earlier than they would under natural conditions, and finding upon reaching the top that it was too early they would most likely stay in their burrows for a few more days. He also stated that observation seemed to show that the adults do not eat. He spoke about the fungus which is a parasite on the testes of the *Cicada* and in time this seems to rot the abdomen which drops off. This has only been noted upon this one species. Discussed by the members.

Dr. Castle, in speaking about his recent trip to Florida, said that he collected twenty-four days at Enterprise and spent a short time at a number of other places. He secured a very large amount of material which is especially rich in Chrysomelidæ. He also spoke of the manner of collecting in the districts visited.

Dr. Skinner spoke about the insects sent to the Academy of Natural Sciences by Mr. Viereck who is collecting in New Mexico and Texas. Some very rare species have been sent home.

Mr. Laurent exhibited cocoons of *Attacus cecropia*. His specimens seemed to show that the females weave the loose cocoons while the males weave the tight ones.

W. R. REINICK, *Sec'y pro tem.*

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held May 22d. Fifteen members were present.

Dr. Calvert exhibited two curious larvæ belonging to the family Syrphidæ, genus *Microdon*. They were found in an ants' nest near Moosehead Lake, Maine. The colors of the specimens had been altered by being kept in alcohol.

Extracts were read from various works which describe these larvæ. Mr. Johnson said he had found pupæ but not larvæ.

Mr. Huntington took exception to a note in the last NEWS in relation to *Sphyracephala brevicornis* by Mr. Houghton. The speaker said he did not doubt that there was skunk cabbage about Ithaca, but re-affirmed his original statement that his specimens were found at least a mile from any skunk cabbage plants.

Mr. Hornig related some interesting experiences in rearing *Actias luna* from the egg.

Dr. Skinner exhibited specimens of *Grapholitha caryana* and their pupæ from hickory husks. The husks were collected by Mr. H. W. Wenzel.

Mr. J. C. Bradley exhibited a net with a flexible ring which was adapted for catching ground insects. He reported great success with it.

The twenty-sixth regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of April 8, 1902. Nine members present; President Bolster in the chair.

Mr. Weeks exhibited a pair of the rare and curious *Ornithoptera paradisea*, also varieties of *O. priamus*. Several interesting exhibits of the genus *Plusia* were made by members. Mr. Newcomb spoke briefly of a call on Dr. Otto Siefort, made during a recent trip to Washington, and described some interesting experiments made by the Doctor on the effects of heat and cold on the pupæ of butterflies and moths. Specimens were exhibited showing the effects described.

A. P. HALL, *Sec. pro tem.*

The twenty-seventh regular meeting of the Harris Club was held on the evening of May 13th. President Bolster presided; attendance eighteen. Mr. Field spoke on the colonization of certain districts in New England by southern insects which are extending their ranges northward, and also reviewed Prof. Webster's recent paper on "The Trend of Insect Diffusion in North America." It was voted to begin at once the formation of a Club Library. Mr. Newcomb exhibited a new form of trap-lantern. A committe on Field Meetings was appointed by the chair.

W. L. W. FIELD, *Secretary.*

A regular meeting of the Chicago Entomological Society was held in the John Crerar Library, Thursday evening, May 15th, 1902, at 8 o'clock. Seven members present. W. E. Longley presiding.

It was decided to continue the discussion on spring insects at next meeting.

Mr. Kwiat read a report of the recent acquisitions to the Society's library.

The question of a field day for May 30th was brought up. On motion of Mr. Healy it was decided to meet at Glen Ellyn, and invite the Chicago Mycological to go with us.

On the discussion of spring insects Mr. Kwiat mentioned, among others, the capture of the following Lepidoptera: *Ichthyura albosigma*, on April 27th; *Himella intractata*, on April 28th; *Lemiothisa denticulata*, on April 29th; *Morrisonia evicta* and *vomerina*, on May 2d; *Epirrita 12-linearia*, on May 2d; *Acronycta populi*, *Arsilonche albovenosa*, *Gastropacha Americana* and *Biston ursarius* were also taken; all at light.

Lycæna lygdamas (8) and *comyntas*, *Nisoniades martialis* and *Aspilates coloraria* were taken in field at Palos Park. The first is very rare in this locality.

Prof. Westcott read some notes on early insects and exhibited several specimens. Exhibits were also shown by Mr. Kwiat and Mr. Comstock. JOHN COMSTOCK, *Secretary.*

A regular meeting of the Chicago Entomological Society was held in the John Crerar Library, Thursday, June 19th, 1902, at 8 o'clock, P. M. Seven members were present.

Mr. Frank J. Hall, of Kansas City, was a visitor.

On motion of Mr. Healy, Clarke, Indiana, was selected as the place in which to hold the Fourth of July Field Day.

Informal discussion followed the transaction of regular business, and Messrs. Longley, Healy and Westcott exhibited some of their captures of this year.

It was suggested that the genus *Homoptera* be selected for discussion at the September meeting. Mr. Longley agreed to assume the initiative and lead the discussion.

A. KWIAT, *Sec'y pro tem.*

B Mintorn lith Boston

1 Cyclamine Albidula A.G.Weeks Jr. 2 Amarynthis Muscolor A.G.Weeks Jr.
3 Thecla Inpeligens A.G.Weeks Jr. 4 Hymenitis Andreas A.G.Weeks Jr.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. OCTOBER, 1902. No. 8.

CONTENTS:

Our plate this month was presented by Mr. A. G. Weeks, Jr., and represents new species from Bolivia. *Dynamine albidula* and *Amarynthis muscolor* were described in the Canadian Entomologist, XXXIII, 266 and 267, 1901, and *Thecla infrequens* and *Hymenitis andreas* in Entomological News, XII, 264 and 265, 1901.

Notes on Derobrachus and Acanthocinus.

BY C. SCHAEFFER, New York.

The description of *Derobrachus forreri* Bates, Biol. Cent. Am., vol. v, p. 230, fits well the examples seen from lower California, which pass very likely in many collections as *D. geminatus* Lec. My attention was called to this species by a specimen in the Edwards collection, Am. Mus. Nat. History, which came from Dr. Horn and was labelled *D. geminatus*. Although a very small specimen, the distinctness of this species on comparison with the true *geminatus* was quite obvious. *Forreri* differs from *geminatus* in the more approximate eyes, narrower neck, antennal joints longer and more slender, especially the first three or four joints, the bispinose ♂ elytra and the tibiæ longitudinally sulcate on the upper as well as on the outer side. The characters mentioned are all constant in the very large series I have seen, and which were mostly all collected by Mr. G. Beyer last year.

While in Philadelphia I looked over Dr. Horn's material, but found not a single specimen of the true *D. geminatus*, all his specimens being from lower California, otherwise the distinctness of the two species would very likely not have escaped him.

Our three species may be separated by the following table:

Sides of thorax with three spines.

Eyes approximate, elytra scabrous with indistinct costæ, apex of ♂ elytra bispinose, tibiæ on the upper side convex. . . **brevicollis.**

Sides of thorax with four spines.

Eyes approximate, the first four antennal joints longer and more slender, elytra smooth with few punctures near base, each elytron at apex bispinose in the males, tibiæ on the upper as well as the outer side longitudinally sulcate. . . . . **forreri.**

Eyes more widely separated, the first four antennal joints generally stouter and shorter, elytra smooth with a few punctures near base, each elytron at apex in the male with only a sutural spine, tibiæ on the upper side convex, outer side sulcate . **geminatus.**

In the larger specimens of *D. geminatus* and *forreri* the difference in the length and stoutness of the first four antennal joints is very pronounced, while the smaller specimens have the joints nearly as in *forreri* but the more approximate eyes, the tibiæ sulcate on the upper side and the bispinose apex of ♂ elytra, which are all very constant characters, will easily separate *D. forreri* from *D. geminatus*.

A similar confusion of two species is found under *Acanthocinus obsoletus* Oliv. The true *obsoletus* has each elytron obliquely prolonged, pointed in the males and somewhat rounded in the females, and is found from the northern parts of America to South Carolina; the type came from the last locality. The other form has the elytra broadly rounded at apex in both sexes and, as I am told by Mr. Leng, was considered by our authorities to be Kirby's *Crophisurus* (*Acanthocinus*) *pusillus*, which was put in synonomy of *obsoletus* on the authority of Mr. Bates, who stated that the type was a poorly developed specimen of *A. obsoletus* Oliv. If our identification of the insect is correct, *A. pusillus* Kirby has to be restored to our lists as a good species, otherwise a new name has to be given to this form. It differs from *obsoletus*, besides the different form of the apices of elytra, in having the punctures at the base of the

elytra finer and more closely placed, the vestiture, especially in fresh specimens, much denser, nearly concealing the punctuation of the elytra, and the markings always more confused. This species seems to be confined more to the northern parts of our continent, all the specimens I have seen came from Canada, Michigan, Wisconsin and Minnesota. The punctures at the base of the elytra in *A. obsoletus* Oliv. are larger and more sparsely placed, the vestiture not dense, showing the punctuation very plainly, the markings are always better defined. Of both species I have seen about forty specimens and found the characters mentioned very constant; even in a few very small males of *obsoletus* the obliquely pointed apices of the elytra are very prominent and show no sign of becoming rounded.

Concerning Bees.

By Henry L. Viereck.

Andrena fulvipennis Sm.

Process of labrum divided into two small shining tubercles, mandibles broad. Thorax almost uniformly roughened.

♀.—Length 9 mm. Front striate, occiput very finely sculptured, dull, clypeus with distinct punctures irregularly but somewhat closely arranged, the longitudinal median impunctate area almost obsolete, noticeable more by the slight elevation of the clypeus along the middle. The third joint of antennæ almost as long as joints four, five and six. Pubescence of head short and close, pale ochreous, frontal foveæ with a pale brown sericeous lining. Dorsulum finely sculptured, with short, stiff black hairs arising from the poorly defined punctures, central line and parapsidal grooves faintly impressed on anterior half of the mesonotum. The lateral smooth lines prominent, shining, the surface around them also more shining than that of the rest of the dorsulum. The pleuræ around the tubercles with a rich ochreous pubescence, on the inferior half the hairs are more like those on the head. Sculpture of scutellum much like that of dorsulum, postscutellum with a fringe of pale ochreous hairs. Metathorax dull, the surface distinctly roughened, enclosure not defined, floccus of metapleuræ pale, strongly developed. Wings fuscous, uniformly clouded, nervures almost black, stigma pale brown, second recurrent nervure received by the second submarginal cell at or a little before the middle. Abdomen uniformly dull, microscopically granular. Fringe on first dorsal segment almost obsolete, that on second, third and fourth segments thick, very distinct, ochreous. Anal fimbria abundant, dull brown. Pubescence of femora pale, that of tibiæ and tarsi brownish to fuscous. Black. Tibial spurs whitish, tarsal claws brownish.

Two ♀ ♀, Lucaston, Camden Co., N. J., September 24, 1901 (E. Daecke). I consider this the autumnal type of *Andrena fulvipennis*, easily recognized by the time of its occurrence, the fuliginous wings, dark mandibles, legs and anal fimbria. A ♀, Clementon, May 7, 1900 (Viereck), agrees well with Smith's description and is probably a race, being darker generally than the described type from Florida.

Andrena salicis Robt.

Process of tubercle triangular, polished, the apex sodose. Thorax finely roughened.

♀.—Length 9 mm. Front striate, though not distinctly, vertex and cheeks microscopically sculptured. Clypeus with coarse shallow punctures, somewhat flat in the middle, without a median impunctate line. Mandibles with a blunt tooth below the apex on the inner margin. Third joint of antennæ a little longer than joints four and five united. On the apical half the flagellum is pale brownish beneath. Dorsulum dull finely sculptured, with indistinct punctures. Scutellum swollen, slightly impressed medially, rather shining. Metathorax finely sculptured, the enclosure distinguished by being more strongly roughened than the surrounding areas. Subcostal nervure brown, the other nervures and stigma almost testaceous. First recurrent nervure received a little before the middle of the second submarginal cell. Abdomen subopaque, microscopically sculptured. Pygidium broad, dull. All pubescence uniformly dull, ochreous, plentiful on head and thorax sparsest dorsally. Second, third and fourth dorsal segments with a distinct apical fringe of closely arranged ochreous hairs. Fimbria of two apical segments brownish. Black. Tibial spurs whitish, apical tarsal joints and claws brownish.

Philadelphia, Pa., April 15, 1897. Nine ♀ ♀. One specimen is but 7.5 mm. in length. This appears to be one of the earliest of *Andrena* for this vicinity. The tubercle has a very narrowly truncated appearance, but it is doubtless *A. salicis*.

Cheap Tropical American Butterflies.

By O. W. Barrett.

The low price at which many species of tropical "flies" can be bought nowadays is a subject of wonder to many northern collectors. Among the several reasons for this apparent cheapness the following are, I believe, the most practical.

In the tropics where life-cycles are shorter, any disturbance of the relations among the species of a locality is marked by

more sudden and vehement changes in the relative abundance or scarcity of the concerned species. Thus certain butterflies are greatly benefited by the making of "clearings" in virgin land and these hover in swarms about the settlers' fields and dwellings; this is true of the *Anartia* spp., *Junonia* spp., *Lycæna* spp., some Papilios, and many Pierinæ and Hesperidæ. Other species frequent the roadways and paths through the forests; it is not unusual to see 50 to 100 specimens of *Caligo* spp. during an afternoon's ride in the forest.

There are two classes of butterfly collectors: natives, most of whom have enough Caucasian blood in their veins to be interested in the work and perhaps slightly ambitious and who may become able to swing a rude net in the open with considerable strength if not skill; and foreigners—mostly resident Germans, some traveling Englishmen, some investigating Americans—all with more or less zeal limited by their spare time, degree of health, and fear of fevers and forest dangers. A collector of either of these classes can, for six or eight months of the year, collect daily 100 to 200 specimens of some twenty species of butterflies within a few rods of his door.

Now, suppose a collector takes 100 salable specimens per day, fifty collectors in seven months (one rainy season) will take one million specimens. Of course, about half the material is not first class, and then there is a loss from mold and ants, but it is *a wonder that the cheap species are not cheaper.* Without the delays and heavy expenses of traveling the native or resident collector can run a very lucrative "side line" by netting the butterflies in his back yard—providing the wholesale dealer will accept and in part pay for them.

Undoubtedly the dealers who are receiving specimens of "flies in lots of tens of thousands would gladly retail their common species at a fraction of the listed prices were it not for the "looks of it." The rapidly increasing demand for cheap tropical insects with which to tone up temperate collections keeps their retail prices from falling flat. As more and more regions are made accessible to the professional collector and as more and more men are willing to face death in the low "hot country" and endure the hardships of living and trying to

work among the innumerable dangers of virgin land, the prices of "rare spp." will gradually fall.

And yet there are reasons why many tropical American butterflies will always be things beyond lists and treasures,—but "that's another story," as says the Jungle Book man.

Two New Species of N. American Stenopelmatinae.

By James A. G. Rehn.

Stenopelmatus terrenus* n. sp.

Type: ♀, Texas. Coll. Acad. Nat. Sciences, Philadelphia.

Related to *S. histrio* Saussure but differing in the much larger size, the spine formula of the caudal tibiæ and the caudal constriction of the pronotum. In the latter respect it approaches *S. longispina* Brunner, but the comparative size of the femora and tibiæ immediately differentiates it from that species.

Head with the vertex globose, slightly narrower than the extreme width of the pronotum; front with the apex subrotundate; eyes small, pyriform. Pronotum with the cephalic portion broad, the caudal portion constricted; cephalic and caudal borders emarginate centrally, the cephalic portion with a strong intermarginal sulcus; cephalic shoulder broadly rounded. Abdomen almost twice as long as head and pronotum. Cephalic femora short and thick, unarmed, the median pair slender but of the same length. Cephalic tibiæ with two spurs on the caudal border, the apical spurs long, reaching almost to the extremity of the second tarsal joint. Median tibiæ with 3 to 4 spurs on the borders, apical spurs only half as long as the first tarsal joint. Caudal femora very robust, reaching to the extremity of the seventh abdominal segment; tibiæ slightly shorter than the femora, bearing two spines on the external margins, four on the internal margins, dorsal surface of the tibiæ flat, central pair of apical spurs short, less than half as long as lateral apical spurs, the longest internal apical spine equalling the first joint of the tarsus in length.

General color dull ochraceous-brown, the apical spurs of the tibiæ and the mandibles tipped with black. Abdominal segments posteriorly margined with pale ochraceous.

Measurements:

Total length	30 mm.
Length of pronotum . . .	6.5 "
Cephalic width of pronotum . .	8. "

* In allusion to the Mexican name "niña del tierra" (child of the earth), applied to species of this genus in the Southwestern United States.

Caudal width of pronotum . .	5. mm.
Length of caudal femora . .	10.5 "
Length of caudal tibiæ . . .	10. "

Phrixocnemis hastiferus n. sp.

Type: ♀, Arizona. Coll. U. S. National Museum.

Allied to P. *bellicosus* Scudder from Colorado, but differing in the much larger size, in the spined caudal carina of the median femora, the presence of 8 instead of 3-4 raised points on the caudal edge of the dorsal aspect of the caudal femora, in the presence of 8 pairs of spurs on the caudal tibiæ instead of 6 as in the related species, and also in numerous other minor characters.

Size large (largest known species of the genus). Head subovate as viewed from the cephalic aspect; vertex smooth, connecting with the frontal region by a narrow ridge; eyes subovate, the axis inclining inward. Pronotum sub-uniform in width, the cephalic border emarginate centrally; ventral border of the lateral lobes broadly rotundate. Cephalic and median femora compressed; the former considerably bowed and bearing a number of spines on the cephalic margin; the latter with the cephalic margin with 2 to 3 spines, the caudal margin with 3 to 4 spines, the distal portion of the limb bearing a stout, blunt genicular spine. Cephalic tibiæ with the dorsal surface unarmed, the ventral borders bearing three pairs of spines besides the apical spurs. Median tibiæ bearing four pairs of spines on the dorsal face, the ventral border being supplied with three pairs of rather small spines located on the distal half, all these spines being extra-apical. Caudal femora robust, the ventro-lateral border bearing 11–13 spines in a group on the distal portion, the dorsal portion having 8 raised joints placed on the internal face; tibiæ broad, the dorsal face flat, the lateral margins bearing 8 pairs of spurs besides the interspersed spines of the second order; first tarsal joint considerably longer than the fourth. Ovipositor straight, suddenly upturned at the apex, the inner valves each bearing four recurved hooks.

General color ochraceous, of a golden tint in the medio-dorsal region, dull whitish beneath. Lateral portions of the pro-, meso- and metanotum washed with whitish, the margins pellucid. Longer spines tipped with brownish black.

Measurements:

Total length	19. mm.
Length of pronotum . . .	5. "
Width of pronotum . . .	7. "
Length of caudal femora . .	12. "
Length of caudal tibiæ . . .	9 5 "

Note on Rhagoletis Suavis Lw. with a Description of the Larva and Puparium.

By George F. Babb, Amherst, Mass.

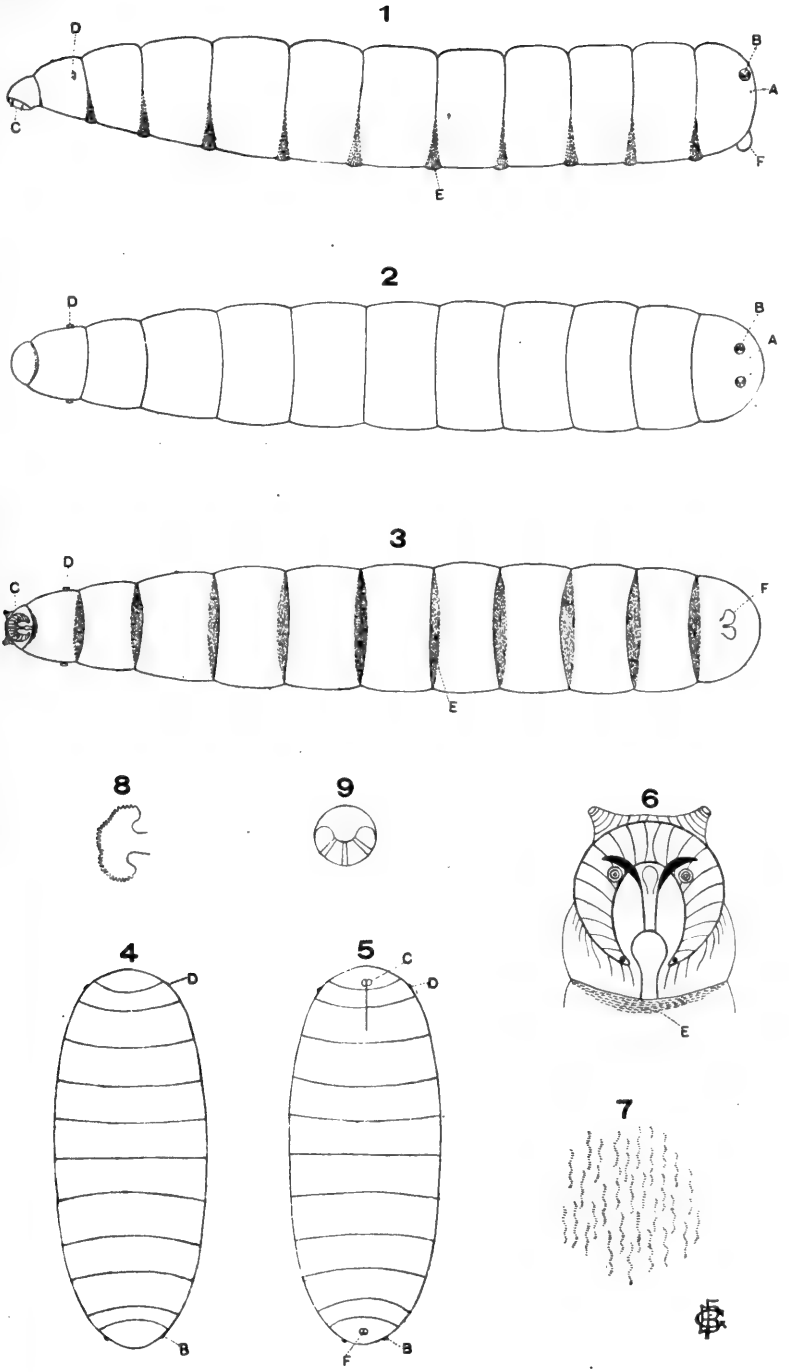
A large number of dipterous larvæ were seen last fall in the pulpy coverings of the fruit of the black walnut, *Juglans nigra*, on the grounds of the Entomological Laboratory of the Massachusetts Agricultural College. Many of these larvæ were collected and allowed to pupate. This spring several specimens of *Rhagoletis suavis* Lw. and some hymenopterous parasites of the species *Aphæreta auripes* Prov. emerged from the pupæ saved. I am indebted to Messrs. Coquilette and Ashmead of the National Museum for determinations.

A description of the larva and puparium of this species, not having been hitherto published, is here given.

Length 10 mm. Greatest width 1.5 mm., 12-segmented, brownish yellow, gradually tapering to the anterior end, slightly to the posterior end which is blunt. The first anterior segment bears the depressed mouth parts which are of peculiar structure. The second segment bears on each side a prominent free structure like a human ear in shape. The twelfth or posterior segment bears on the dorsum of the blunt face a pair of projections whose crescent-shaped extremities are each marked with three pairs of dark lines. Below these projections is a pair of spots and on the ventral edge are two pear-shaped protuberances. The ventral half of each joint is armed with very short setæ directed backward and arranged in short wavy lines which, under low magnification, appear like punctured lines. Those on the first joint appear all around, on the dorsum as well as on the venter. The puparium is ellipsoidal in shape, 5 mm. long and 2 mm. in greatest width. It bears all the external features of the larva but in a degenerate form.

EXPLANATION OF PLATE XIV.

Figs. 1-3 are lateral, dorsal and ventral views respectively of the larva.
Figs. 4 and 5, dorsal and ventral views of puparium.
Fig. 6, the mouth parts magnified.
a. Small spots on last segment.
b. Projections on dorsal part of same.
c. Mouth parts.
d. Lateral prominence on second segment.
e. Areas with setæ.
f. Projections on ventral part of last segment.
Letters are the same in all figures.
Fig. 7, magnified portion of *e*.
Fig. 8, magnified projection *d*.
Fig. 9, magnified projection *b*.



RHAGOLETIS SUAVIS LW.—(BABB.)

Lost Knowledge.

By John B. Smith.

In the April number of the News Mr. Baker calls attention to a matter under the above heading that has no doubt occurred to every student and every collector. To one who has done editorial work the subject is a constant aggravation. Men have told me of really interesting observations made and have had no hesitation in giving their experience freely when opportunity served; but as to putting it on paper—"not all the king's horses nor all the king's men" could induce them to do that.

There is no experienced collector or student who does not have a stock of information concerning his especial hobby that no one else has; but it is not always possible to formulate this information for publication.

Dr. Lugger, to whom Mr. Baker refers, was a somewhat extreme type, whom it was a pleasure to know and of whom it certainly could not be said that he hesitated about imparting observations when they were called for. I have been with him often, in the field, and never without learning from his experience; but it would have been very hard to have put what I thus gained into readable form. It was a fragment here and there; brought up by a locality, by a specimen or by some casual remark or observation. And so, when sitting over his collection, comments would be made; on a structure, on some peculiar life habit or on some point of systematic interest. In the evening, over a social glass, other experiences would be discussed and many useful points were brought out.

This leads to the point that there are many fragmentary observations that really assume importance only when brought out by some others which they complement or confirm. Hence the place for such observations is in the discussions at society meetings. On turning back to the earlier numbers of the Proc. Ent. Soc. Wash., it will be found that Dr. Lugger kept up his end of the discussions there and brought out from his stores such facts as were called for. They appeared, credited to him and just where they belonged. Reading over some of the Reports of the meetings of the Ent. Club of the A. A. A. S., numerous records of this character will be found, and in the Reports of the meeting of the Association of Economic Entomologists is a perfect storehouse of interesting and useful notes.

What is needed in all societies is a recording secretary who thoroughly understands the subject; who can grasp the points made by each, and who can state succinctly just what was intended, giving proper credit to each speaker. With a presiding officer who knows the members and who can encourage each to bring out his experience, the records of the meetings when published will make all these individual observations available.

Now I am quite aware that this does not in all respects cover the point made by Mr. Baker; but experienced students do not like to publish fragments, for, until they have them in their relation to the entire surround-

ings, they may be misleading or actually erroneous. The very fact that so many erroneous fragments do get into the journals keeps the more conservative student out. He fears that until he *knows* he may expose himself to the same "shrug" that he gives when he sees a printed error.

After all, is not the trouble with the "younger students" merely an ignorance of what has been published? Do we not find the same things repeated, again and again, simply because the writer had no idea that it had been done half a dozen times before? I realize the difficulty: good entomological libraries are scarce and books cost money—to print as well as to buy. Full sets of the NEWS, Canadian Entomologist, Insect Life, Entomologica Americana, Papilio, Psyche and many others, as well as the Proceedings and Transactions of other bodies are necessary before it is possible to get even a fair idea of what is known. The "younger student" ignores all this, necessarily in most cases, and pitches in to record what seems new and interesting. The older man wants to make sure that somebody else has not done it all before; so puts off publishing until he can get time to look the matter up—which he rarely does.

What is the bearing of all this? It means a society whenever you can get two men interested in insects to form one; it means free discussion; it means a record of that discussion; it means a discriminating editor who will differentiate between actual additions to knowledge and mere duplications, and it means that while every student owes it to his fellows to help them along by making his discoveries public, he should not assume that they are new, merely because he had never known it before.

Pests and Grease.

BY E. J. SMITH, Natick, Mass.

In the February number of the NEWS I saw an article on "Pests and Grease," by Mr. F. W. Dod, and write to make a few criticisms on the subject.

He says "it is hardly worth while to treat any but really valuable specimens after the grease has spread over the wings."

I think differently. Of course, if one is going to use ether the cost is so large that that might be a drawback, but when ordinary stove gasoline at fifteen cents or thereabouts per gallon is in every way just as good, the expense is reduced to a mere nothing. I have used a great deal of it and always with the best of results. If one has many specimens on pins to be cleaned the best thing to do is to get a tin pan about 9 by 12 inches by 2 or more inches deep, have a few common pins bent at right angles near the middle and soldered to the bottom of

the pan in such a way that the points stand upright. Then press sheet cork down on the pins until the points come through, bend over and the cork is held firmly. Take a very fine and sharp pair of surgeon's scissors and split the bodies underside of all that are large enough to admit of it (the grease usually softens them so this can easily be done), then pin them on the cork and pour in gasoline enough to well cover the specimens, lay about two thicknesses of blotting paper over the top and on that lay a pane of glass an inch or two larger than the pan each way, and on top of that a heavy book or similar weight and leave for almost three days, then pour off the gasoline into a bottle and save to clean paint brushes or thin paint, or for any similar use. Hold a slip of blotting paper to the end of abdomen of the insects to remove the surplus of liquid, and stand the pan in a slight draught of air and in a few minutes they will be all dry and the grease all gone. When fully dry I go over them with a blower and by blowing against the grain of the "fur" I loosen and lighten up the scales that have been more or less laid down, and restore the natural fluffy look. My blower is a rubber bulb to which a small metal tube is attached. It is very similar to a tool used by dentists. I do not approve of removing the bodies at all because if there is much grease in the abdomen some of it is almost sure to run down into the thorax to make further trouble. I have seen specimens split all to pieces by verdigris (or more properly, I suppose, oleate of copper) which had formed in a large ball on the pin. This seems to be caused by some acid in the body in combination with the grease, and cannot form if the grease is removed. In an insect where this has begun to form the gasoline will stop all further trouble by removing the grease, and the oxide will be reduced to a dry powder which can be easily dislodged with a setting needle. If abdomens are removed I prefer a solution of white shellac in alcohol for cementing them on again if the color is light, but if dark, I make a cement by mixing a little lampblack with the shellac. On a black body this can scarcely be seen.

For repairing wings I prefer gum tragacanth, to which is added a little carbolic acid or oil of clove to prevent mould.

The Denton Bro's., of Wellesley, Mass., who handle large numbers of lepidoptera every season and who have almost everything sent them in papers, tell me that they put everything, regardless of whether greasy or not, into gasoline, papers and all, and leave for two weeks, then take out and spread to dry without removing from papers. In this way they claim the grease is all drawn out of the insects by the paper, and when dry they are as fluffy and fresh looking as though never wet. If taken from the papers they say that they will not look as well as though dried in the envelopes. Incidentally this treatment also kills any insect pests that may be among them.

Concerning the tendency of specimens which have been dried out of shape and relaxed to warp, I think that they are always more or less in danger of eventually returning at least in some degree to their first shape if exposed to dampness, but I think the danger is very much lessened by thoroughly damping in the first place. They should be left in the damping box until well relaxed even if it takes a week. If plenty of napthaline flakes are scattered over the surface of the sand they will not mould for many days if ever. This is better than carbolic or anything else that I know of. The only way to be sure of keeping any specimens absolutely flat is to put them up in the Denton tablets, but this is rather expensive.

Sixth 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, 132; vol. ix, p. 111).

44. **Nannothemis bella** Uhl.

1899, June 26, one ♂ on marsh.

17*a*. **Gomphus abbreviatus** Hag.

1898, June 9, one teneral ♂ in road.

1901, June 10, two imperfect ♂ ♂ and one ♀, on the shore of Lake Cobbosseecontee, near twilight. A strong wind from the west all day had evidently prevented a proper development of these specimens for they did not improve after capture.

4*a*. **Ischnura kellicotti** Williamson.

1900, July 2, one ♂, three orange ♀ ♀ on margin of Round Pond. Identified by Philip P. Calvert, Ph. D., who informs me that this species has not before this been found in Maine; although he has taken it on Block Island, off the Rhode Island coast. On the day I found this species I saw many other orange ♀ ♀ on the lily pads and nearly all out of reach. The one ♂ was with an orange ♀ when taken. The place, Round Pond, was an ideal one for dragonflies.

On June 20, 1901, I saw a *Cordulegaster maculatus* ovipositing by forcibly striking the water with the tip of her abdomen. I did not find one of the eggs, and the ♀ escaped after being in the net.

A List of Insects Taken in the Adirondack Mountains, New York.—I.

By Alex. MacGillivray and C. O. Houghton.

As is well known to most of the systematic entomologists of the country but little collecting has been done in the Adirondack Mountains, although the White Mountains of New Hampshire, an adjoining State, have received a good deal of attention from various well-known collectors. As long ago as 1878 Dr. Lintner* remarked upon this fact, and after referring to some of the work done in the White Mountains says: "Meanwhile, the extensive Adirondack region with its numerous lofty mountain peaks, its deep gorges, its hundreds of lakes—perhaps second only to the White Mountains in point of interest to the entomologist of any locality in the United States east of the Rocky Mountains—has been permitted each year to bury within itself its entire entomological wealth. Previous to the collection noticed in this paper, scarce an insect had been drawn from it. At the present, nothing has been reported of its mountain insect fauna. Many new species are doubtless to be discovered there, and the first comparison of its fauna with that of other elevated and more northern regions is yet to be made. It is not impos-

* List of Lepidoptera collected in the Adirondack region of New York. Entomological Contributions, No. iv, 1878, pp. 141–154.

sible (although our Eastern friends will not admit the possibility) that the naked summit of Mt. Marcy may yield to earnest search another locality for that very interesting butterfly of so restricted range, *Chionobas semidea*, while aspirations less lofty would in all probability be rewarded by the addition of *Argynnis montinus* to our State fauna.

"It is sincerely to be hoped that, from the growing interest manifested in entomology, the numerous accessions to the number of its students, the facility afforded by recent publications and in several extensive classified collections—the reproach resting on the entomologists of New York may be speedily removed. And while the thorough exploration of any locality can scarcely fail of bringing to light much new material, the ambitious student may have for his incentive the assurance that in the Adirondack region, and especially among the Adirondack Mountains proper, there is open to him an unexplored field where faithful search will assuredly yield him a most abundant return."

Although nearly a quarter of a century has elapsed since the above was written, practically nothing seems to have been done whereby our knowledge of the insect fauna of this interesting and extensive field has been increased; in fact, the list of Lepidoptera above referred to is the only published list of the insects of this region that we are acquainted with; and this is apology for offering this very incomplete list of insects that were taken during a ten days' outing in June, 1901. Our collecting was done in the vicinity of Axton, N. Y., and chiefly between June 16th and 23d, although a few insects were taken previous to this by one of the party who arrived on June 12th.

Axton is the field headquarters of the College of Forestry of Cornell University, and is situated, approximately, in the center of the 30,000 acre tract that has here been set apart for experimental forestry. The place, which is a mere hamlet, consisting of little save a hotel and the few buildings belonging to the College of Forestry, is located near the northern border of Township 26, Franklin County. The elevation is about 1600 feet.

The Racquette river, which is joined a short distance to the southeast by Stony creek, flows past the place, but the nearest

body of water of importance is Saranac lake about two miles to the north.

The land in the vicinity has been lumbered over, and no virgin forest of importance is to be found nearer than Stony Mountain about one and a half miles to the west.

A considerable tract about the buildings has been wholly cleared up and the land is tilled; this is considerably higher than the surrounding land, a part of which is a sphagnum swamp.

Our collecting was done principally along the roads through the woods and fields, beside the water-courses and the more open sections covered chiefly by bushes, weeds and small trees. Practically no collecting was done in the thick woods, save along the roads and pathways. The trees most abundant are the maple, birch and beech of the hard woods; a few pine, poplar, cherry, ash, etc., are also to be found.

No night collecting was undertaken, which accounts, in part, for the very small number of moths listed. Some sweeping was done, and a large proportion of the smaller insects taken, especially Hymenoptera and Coleoptera, was secured in this way.

COLEOPTERA.*

CICINDELIDÆ.

Cicindela longilabris *Say.*
" purpurea *Oliv.*
" vulgaris *Say.*
" repanda *Dej.*

CARABIDÆ.

Cychrus viduus *Dej.*
Calosoma calidum *Fab.*
Bembidium variegatum *Say.*
" quadrimaculatum *Linn.*
" graciliforme *Hayw.*
Tachys nanus *Gyll.*
Pterostichus lucublandus *Say.*
" caudicalis *Say.*
" luctuosus *Dej.*
" mutus *Say.*
" erythropus *Dej.*
Amara avida *Say.*
" apricarius *Payk.*
" angustata *Say.*†
" impuncticollis *Say.*
" chalcea *Dej.*
Calathus impunctatus *Say.*
Platynus placidus *Say.*
Platynus sp.

* We are indebted to Mr. Charles Liebeck for the determination of most of the species embraced in this list; the remainder were determined by C. O. Houghton.

† This species was taken in considerable numbers by sweeping; we commonly find it on grass stalks, often near the top, on low ground.

Lebia tricolor *Say.*
" frigida *Chd.*
Chlænius sericeus *Forst.*
" pennsylvanicus *Say.*
" tomentosus *Say.*
Agonoderus pallipes *Fab.*
Harpalus viridjæneus *Beauv.*
" pleuriticus *Kirby.*
" herbivagus *Say.*
" laticeps *Lee.*
Stenolophus conjunctus *Say.*
" ochropezus *Say.*
Bradycellus rupestris *Say.*
Anisodactylus rusticus *Say.*
" interpunctatus *Kirby.*
" baltimorensis *Say.*

GYRINIDÆ.

Gyrinus borealis *Aubé.*
Dineutes hornii *Robts.*

HYDROPHILIDÆ.

Cymbiodyta lacustris *Lec.*
Sphæridium scarabæoides *Linn.*
Cercyon hæmorrhoidalis? *Fab.*

SILPHIDÆ.

Silpha lapponica *Hbst.*
Choleva terminans Lec.
Anisotoma assimilis *Lec.*
Liodes discolor *Melsh.*
Agathidium exiguum *Melsh.*

PSELAPHIDÆ

Two specimens not determined.

STAPHYLINIDÆ.

Homalota sp.
Listotrophus cingulatus *Grav.*
Philonthus æneus *Rossi.*
Xantholinus cephalus *Say.*
Lathrobium confluens?
" collare *Er.*
Pæderus littorarius *Grav.*
Tachyporus jocosus *Say.*
" chrysomelinus *Linn.*
Erchomus ventriculus *Say.*
Boletobius cincticollis *Say.*
Anthobium convexum *Fauv.*
Two undetermined Aleocharids.

PHALACRIDÆ.

Phalacrus politus *Melsh.*
" pumilio *Lec.*
Olibrus ergoti.

CORYLAPHYDÆ.

Orthoperus scutellaris? *Lec.*

COCCINELLIDÆ.

Hippodamia parenthesis *Say.*
Coccinella trifasciata *Linn.*
Adalia frigida *Schn.*
Harmonia picta *Rand.*
Hyperaspis bigeminata *Rand.*
Scymnus tenebrosus *Muls.*

CUCUJIDÆ.

Læmophlæus convexulus *Lec.*

CRYPTOPHAGIDÆ.

Cryptophagus sp.
Atomaria ochracea *Zimm.*
" ephippiata *Zimm.*

DERMESTIDÆ.

Byturus unicolor *Say.*
Dermestes lardarius *Linn.*

HISTERIDÆ.

Hister planipes *Lec.*
" lecontei *Mars.*
Saprinus distinguendus *Mars.*

NITIDULIDÆ.

Epuræa avara *Rand.*
" labilis *Er.*
Nitidula bipustulata *Linn.*
" rufipes *Linn.*
Omosita colon *Linn.*
Ips fasciatus *Oliv.*
" " var. *Oliv.*

LATRIDIIDÆ.

Corticaria distinguenda.

BYRRHIDÆ.

Cytilus sericeus *Forst.*
" trivittatus *Melsh.*

DASCYLLIDÆ.

Cyphon obscurus *Guér.*

ELATERIDÆ.

Adelocera brevicornis *Lec.*
Cardiophorus gagates *Er.*
Cryptohypnus abbreviatus *Say.*
Elater pedalis *Germ.*
" mixtus *Hbst.*
" pullus *Germ.*
" socer *Lec.*
" nigricans *Germ.*
" rubricus *Say.*
Agriotes stabilis *Lec.*
" fucosus *Lec.*
" limosus *Lec.*
Dolopius lateralis *Esch.*
Limonius pectoralis *Lec.*
Campylus denticornis *Kirby.*
Athous rufifrons *Rand.*
Corymbites spinosus *Lec.*
" appressus *Rand.**
" nov. sp.

THROSCIDÆ.

Throscus constrictor *Say.*
" chevrolati *Bonv.*

BUPRESTIDÆ.

Calcophora fortis *Lec.*
Dicerca divaricata *Say.*
" tenebrosa *Kirby.*
Agrilus anxius *Gory.*
" egenus *Gory.*

LAMPYRIDÆ.

Celetes basalis *Lec.*
Cænia dimidiata *Fab.*
Pyropyga fenestralis *Melsh.*
Pyractomena borealis *Rand.*
Podabrus diadema *Fab.*
" modestus *Say.*
Telephorus fraxini *Say.*
" carolinus *Fab.*
" rotundicollis *Say.*
" bilineatus *Say.*
" sp.
Malthodes sp.

MALACHIDÆ.

Collops vittatus *Say.*
Attalus nigrellus *Lec.*
Thanasimus dubius *Fab.*
Hydnocera difficilis *Lec,*
Necrobia violaceus *Linn.*

PTINIDÆ.

Ptinus brunneus *Duft.*
Dinoderus porcatus *Lec.*

LUCANIDÆ.

Platycerus depressus *Lec.*

SCARABÆIDÆ.

Onthophagus hecate *Panz.*
Aphodius fossor *Linn.*
" ruricola *Melsh.*
" prodromus *Brahm.*
Dichelonycha elongata *Fab.*†
Lachnosterna dubia *Smith.*
Trichius affinis *Gory.*

* In a note appended to the list of names returned Mr. Liebeck says: "*Corymbites appressus* was described from Lake Superior, and I have seen a number from Duluth, Minn., and these are the only specimens I know of; it is considered quite rare."

† This species was very abundant on hazel nut bushes (*Corylus*). Many pairs were taken together.

CERAMYCIDÆ.

Asemum mœstum *Hald.*
Tetropium cinnamopterum *Kirby.*
Phymatodes dimidiatus *Kirby.*
Callidium antennatum *Newm.*
Pachyta monticola *Rand.*
Acmæops pratensis *Laich.*
Leptura capitata *Newm.*
" chrysocoma *Kirby.**
" mutabilis *Newm.*
Monohammus scutellatus *Say.*
" oregonensis *Lec.*

CHRYSOMELIDÆ.

Donacia pusilla *Say.*
Orsodacna childreni *Kirby.*
" " var. hepatica *Say.*
" " " trivittata *Lec.*
" " " tibialis *Kirby.*
Pachybrachys infaustus? *Hald.*
Adoxus vitis *Linn.*
Typophorus canellus var. quadriguttata *Lec.*
Typophorus canellus var. quadrinotata *Say.*
Typophorus canellus var. gilvipes *Horn.*
Graphops pubescens *Melsh.*
Doryphora 10-lineata *Say.*
Chrysomela philadelphica *Linn.*†
" bigsbyana *Kirby.*
Lina tremulæ *Fab.*‡
Gonioctena pallida *Linn.*
Diabrotica 12-punctata *Oliv.*
Galerucella decora *Say.*
" cavicollis *Lec.*
Œdionychis quercata *Fab.*
" subvittata *Horn.*
Disonycha limbicollis *Lec.*
" quinquevittata *Say.*
" pennsylvanica *Ill.*
Haltica ignita *Ill.*
" evicta *Lec.*
Crepidodera helxines *Linn.*
Epitrix cucumeris *Harr.*
Microrhopala excavata *Oliv.*

TENEBRIONIDÆ.

Phellopsis obcordata *Kirby.*
Upis ceramboides *Linn.*
Boletotherus bifurcus *Fab.*

CISTELIDÆ.

Isomira quadristriata *Coup.*

LAGRIIDÆ.

Arthromacra ænea *Say.*‖

MELANDRYIDÆ.

Melandrya striata *Say.*
Xylita laevigata *Hellw.*

ŒDEMERIDÆ.

Asclera puncticollis *Say.*

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* Mr. Liebeck says of this species: "*Leptura chrysocoma* is a common species in the western States, but yours is the first I have seen from the East."

In a collection of beetles recently purchased by Cornell University of Mr. R. J. Crew there is a single specimen of this species labeled Toronto, Ont.

† A good series of this species was taken, all of them on dogwood bushes (*Cornus*) chiefly along water courses; several pairs were secured.

‡ This was one of the most common Chrysomelids seen about Axton, and a large series was secured: they were found almost wholly upon poplar, *Populus tremuloides*, doubtless.

‖ This species was found in large numbers on *Corylus* associated with *Dichelonycha elongata*: scores of specimens were seen.

CEPHALOIDÆ.

Cephaloon lepturides *Newm.*

MORDELLIDÆ.

Anaspis flavipennis *Hald.*
Mordella scutellaris *Fab.*
Mordellistena comata var. cervicalis *Lec.*
Mordellistena aspersa *Melsh.*
" pustulata *Melsh.*

ANTHICIDÆ.

Corphyra lugubris *Say.*
Notoxus anchora *Hentz.*

PYROCHROIDÆ.

Schizotus cervicalis *Newm.*
Dendroides bicolor *Newm.*
" concolor *Newm.**

MELOIDÆ.

Melœ angusticollis *Say.*

OTIORHYNCHIDÆ.

Hormorus undulatus *Uhler.*

CURCULIONIDÆ.

Apion walshii *Smith.*
Phytonomus nigrirostris *Fab.*
Macrops sparsus *Say.*
" humilis *Gyll.*
Hylobius confusus *Kirby.*
Anthonomus signatus *Say.*
" corvulus *Lec.*
Piazorhinus scutellaris *Say.*
Gymnetron teter *Fab.*
Tyloderma æreum *Say.*
Cœliodes nebulosis *Lec.*
Ceutorhynchus decipiens *Lec.*
Rhinoncus pyrrhopus *Lec.*
Promecatarsus? sp.

SCOLYTIDÆ.

Pityophthorus materiarius *Fitch.*
" sparsus *Lec.*
Xyleborus cælatus *Eich.*
Polygraphus rufipennis *Kirby.*

ANTHRIBIDÆ.

Cratoparis lunatus *Fab.*

* Thirty-five males of this species were taken as they were flying about over a patch of raspberry bushes, at the edge of the woods, just at dusk: only one female was secured.

Larva vice Nymph.

By O. W. Oestlund.

There are three distinct periods or stages in the life-history of an insect, the egg, the larva and the imago. In the first embryonic development takes place; the second is the period of growth, while the third may be said to be the period of reproduction and distribution of species. In primitive insects, before wings had yet been acquired as organs of locomotion, there probably was but slight difference, if any, between the larva and the imago. But with the development of wings as organs of locomotion in the adult, the separation of the imago as a distinct stage was gradually brought about. At first this difference may have been comparatively slight, as them ode of

life of both was probably much the same; but with metamorphosis once established the possibility of a still greater difference was present, in that the imago might adapt itself to a different mode of life from that of the larva. This we find has taken place to a marked extent in all the higher orders of insects.

With the establishing of metamorphosis a new factor was introduced in the larval period besides that of growth, viz. that change preparatory to metamorphosis. This change becomes apparent externally in the presence of wing-pads.

In primitive insects, with wing-metamorphosis once established, this change, appearing early in the larva, took place pari passu with that of growth, as is still the case in most of the generalized orders of insects. On the other hand, in all of the more specialized orders we find the tendency to seperate metamorphic changes from that of growth, which becomes especially marked in those orders where metamorposis implies not only a change of wing-pads into wings, but also those of mouth-parts, internal organs, etc. This leads to the formation of a fourth stage in such insects—the pupa stage, which may be defined as the resting stage during which most of the metamorphic changes take place leading to the imago. This is a secondary separation of the larval period, like that of the imago, by which the period of growth is still more shortened, and the metamorphic changes are concentrated to form a distinct period.

An intermediate condition is found in a number of insects in which the tendency to such a separation or change from that of growth becomes apparent without being fully realized. In these the wing-pads, with other metamorphic structures, first become apparent as external organs with the penultimate ecdysis. To these the term nymph or active pupa was first applied. But as the mode of life of this so-called nymph is usually the same as that of the larva, growth being carried on without interruption, it can scarcely be considered to form a distinct stage, but should rather be looked upon as an incipient or primitive pupa-stage not yet separated off from the larva. The extension of the term nymph to the whole larval

period of such insects, as has become the fashion of late even by our best writers, is still less to be commended, and will not tend to make the matter clearer to the beginner. The presence of wing-pads and other metamorphic structures does not alter the more primitive and fundamental characters of this period as being one of growth—a true larval period characteristic of all insects.

On the Progress in the Description of the Coccidae.

By Geo. B. King, Lawrence, Mass.

Prior to 1868 when Dr. Signoret began his great work "Essai sur les Cochenilles" (published in the Annales de la Societe Entomologique de France) practically all the Coccidæ described up to that time were studied only superficially, no attention being paid to the anatomy of these insects, and even since his time several authors have only given us the external characters of their species. It is therefore often with great difficulty that the species so described can be recognized again when found; indeed were it not for the types of some of these which have been carefully preserved and from which comparisons can be made, many now recognized, would have been known by other names, and justly so too, so far as the descriptions go.

To appreciate what I have alluded to, one has only to consult Prof. Cockerell's note on his Bibliographical investigation among the earlier works treating of Coccidæ. Such investigations prove of great value, when published, to a student receiving Coccidæ for identification from European countries, which are decidedly mixed and little known at present.

Recently much interest has been shown in Germany by Dr. L. Reh and in Switzerland by Dr. J. Hofer who are investigating and collecting the scale insects native to their countries, together with those found on plants coming into their ports from other countries. Some of the earlier described species have been found by them, viz., *Pulvinaria vitis* L. 1758, *Eulecanium coryli* L. 1758, *vini* Bouche 1851, *persicæ* Fabr. 1766, and *Kermes quercus* L. 1758. In the original descriptions of all

these, there is very little to assist one to recognize the species. We may take *Kermes quercus* as a fair example. Geoffroy seems to give the best description, and in fact all which aided me in the identification of the insect (which was sent to me by Dr. Reh); it reads something like this:

"*Chermes quercus reniformis*. Le *Kermes reniforme* de Chene (the *renifarm Kermes* of the oak); as to its form it differs from that of all the others, approaching the form of a kidney and having a brown color."

The above could be well said to have been the first period in the description of the Coccidæ. The second period commenced with Signoret who paid considerable attention to structural characters, viewed by transmitted light by the use of a compound microscope, and gave measurements of antennal joints and other structural characters. The measurements however were only approximate, that is, he measured as it appeared to be to his eye, viewed through the field of the microscope. A number of authors since and some at the present time, I am sorry to say, use the same method. It is not at all accurate as will be seen below. Several lengthy descriptions have been made using a multiplicity of words, and with very little reference to the structural characters which are specific in the species under consideration, thus making the description valueless. Some give in detail the changes which take place in the life circle of the insect and omit often the characters present in the adult stage, too much attention being given to the young forms, giving shape, color and size to the adult female only.

The third (and present) period seems to have begun in 1897 when the use of the micromillimeter was brought into service more extensively. Prof. J. D. Tinsley was the first to measure the legs and antennæ systematically, but some European authors have sometimes given measurements in μ. Prof. Theo. D. A. Cockerell was the first to introduce the "Formula" of the measurements of the antennæ in 1895; it is constructed by enumerating the joints in the order of their lengths, beginning with the longest, and bracketing together those of equal length. He was the first to plot out "curves" for the antennæ which is a rapid method for comparing data.

To illustrate the difference in measuring with the eye and with the micromillimeter, we will take for an example *Eulecanium persicæ*, a species little understood. The antennæ when viewed by transmitted light and measured by the observer's eye, joints one and two appear to be equal ; three is about as long as one and two together, but when measured with a micromillimeter scale they are very different, thus joint (1) 52, (2) 40, (3) 48 μ long, the width of joints (1) 64, (2) 48, (3) 36. The eye seems to be deceived by the broad first joint, joint three is very much thinner and hence seems to the eye to be much longer than one.

Again take the common mealy bug (so called) of our greenhouse *Dactylopius citri*. Prof. Comstock described the antennæ and says joint 8 is longest, twice as long as 3, 2 and 7 equal, 5 and 6 equal, and 4 is shortest. I have tried my eye with the following results : 8 and 3 longest ; 3 distinctly shorter than 8 ; 1 and 2 next longest and about equal, 5 a little longer than 4, 6 and 7 shortest and equal.

A careful measurement with a micromillimeter gives the following results : joints 1, 2, 3, 4, 5, 6, 7, 8 : 96, 88, 96, 68, 80, 81, 44, 104.

The formula of Comstock's measurements with the eye 8 3 (2 7) (5 6) 4 omitting joint 1 ; of those by myself with the eye 8 3 (1 2) 5 4 (6 7) and with the micromillimeter 8 (1 3) 2 6 5 4, 7. This I believe is the first time that the true measurements of the antennal joints of *Dactylopius citri* have been given. It should be said, however, in the study of Coccidæ that measurements in μ should be made after the insect has been boiled in caustic potash and washed with cold water, also again after being hardened with alcohol and finally after being mounted in balsam. Distinct differences will be found to exist in the three stages, both in the length and width of the antennal joints. There are some genera of Coccidæ in which the specific characters are only found in the young larvæ. *Kermes* is an example, but I venture to say that all our *Kermes* can be correctly determined from the characters found to exist in the adult female scale alone ; but in the *Lecanium* and *Pulvinaria* so far as I can now see, there is very little in the young larvæ to

assist in the identification of a species. It has been suggested to me in a letter from Mr. H. Maxwell Lefroy of the Imperial Department of Agriculture, Barbadoes, West Indies, that distinctive characters and such as are found to be more constant by him in the identification of the genus *Lecanium* are found in the anal region and anal plates of that genus. I cannot as yet find any assistance to aid me in relying upon the shape, size and color of the plates together with the spines and spine-like hairs of that region. Whether or not these characters may be found to be specific I cannot say or whether new characters will be found ; but this much can be said, closely related species can be separated very readily by the method now in vogue. Finally it is not necessary to give a lengthy description, if a species is well described superficially and the insect properly mounted and the characters then seen by transmitted light are described and measured with a micromillimeter scale carefully ; there is no reason why the species so described cannot be identified.

AN INCIDENT OF PROF. SNYDER'S TRIP IN COLORADO.—While camping at Turkey Creek, above Webster, Colo., we were forced to visit the town several times to get mail and provisions. On one of these occasions we had a conversation with the Postmaster that is well worth relating to entomologists. Prof. Snyder had been speaking of the manner in which insects were preserved for eastern collections and the great demand there was for rare western butterflies.

From bugs the talk drifted into birds and bird collectors. "By the way, Mr. Snyder," remarked the Postmaster, "there's one bird that the eastern fellows never seems to get here. It's a kind of hummin' bird, but it ain't like most hummin' birds. Instead of having feathers it has kind o' soft powder on it, and its bill rolls up in a round thing like a watch spring, under its chin. I killed one once to see what it looked like—that's the only one ever I saw caught."

Prof. Snyder tipped me a wink when the narrator's face was turned, and then kept a straight countenance. "Yes, it was strange that the Rocky Mountain humming bird was so hard to catch."

We laughed to ourselves when the Postmaster was not in sight. We both understood the man well enough to know that it was not wise to tell him he had made a mistake.

Whenever we saw a *Sphinx* after that, one or the other of us was sure to say, "there goes a Rocky Mountain humming bird."—J. COMSTOCK.

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 a 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., OCTOBER, 1902.

At this season of the year we learn what our subscribers and friends have been doing through the Summer. We are especially interested in those who have made collecting trips, and we are curious to learn of their success or failure. Also at this time of year insects begin to come in for determination and we look forward to seeing new or rare species. There is as much pleasure in field work as there is in hunting with a gun and the added pleasure of knowing we do not destroy or wound animals which suffer pain. There is even a spice of danger in collecting insects at high altitudes, and in some cases the chase may be as keen as that after a deer or antelope.

The late Mr. J. H. Leech says "The most sporting butterfly is *Parnassius charltonius*. His first acquaintance with the species was in 1887 in the N. W. Himalayas, at an altitude of 18,000 feet among the glaciers on the Skoro la Pass of Baltistan. At that time the species was very rare in collections, and on first observing it the author and Mr. de Nicéville, who accompanied him, determined at once to procure a good series at any price. The ground was very badly adapted for forming a camp, but after a little searching a more or less level spot was found on which the coolies were set to work digging away the mountain side, and by evening the little 8 foot tents were pitched. In the meantime two or three specimens, not in the

best condition, had been captured. *P. charltonius* has a powerful flight soaring well *out* of reach and not often settling excepting on precipitous rocks. As any rapid progress was impossible at such an elevation, owing not only to the rarefied atmosphere, but also to the precipitous nature of the locality frequented by the butterfly, where a slip would have proved fatal, the object in view appeared almost unattainable. The following day, however, by carefully observing the flight of of the insects it was discovered how they were to be circumvented. The day was bright and the sun *very* powerful, but at short intervals squalls of snow and hail occurred; these squalls were not at all appreciated by the butterflies, which promptly sought refuge in the shelter of the rocks. By marking them down at the commencement of a storm they could be successfully stalked if in an accessible position and brought to net. In this manner a nice long series was procured in the next day or two." We will be pleased to have collecting experiences for publication in the NEWS.

Entomological Literature.

COMPILED BY H. L. VIERECK AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

1. Proceedings of the Academy of Natural Sciences of Philadelphia. **4.** Canadian Entomologist, London, Ontario.—**5.** Psyche, Cambridge, Mass.—**7.** United States Department of Agriculture, Division of Entomology, Washington, D. C.—**44.** Verhandlungen der K. K. Zoologische Botanische Gesellschaft, Wien.—**45.** Deutsche Entomologische Zeitschrift, Berlin.—**55.** Le Naturaliste, Paris.—**64.** Annalen der K. K. Naturhistorischen Hof Museum, Wien.—**68.** Science, New York.—**159.** Allgemeine Zeitschrift für Entomologie, Neudamm.—**160.** New Jersey Agricultural Experiment Station, New Brunswick.

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WHEN DYAR'S LIST COMES OUT.

All Mothtown's in a flutter,
It's shaken to the core;
The news has come from Washington—
Such news as ne'er before.
The social leaders are dismayed,
They're fairly put to rout;
They really can't tell "who is who"
'Till Dyar's List come out.

They say the social prestige
Of many a family proud,
Will be scattered to the breezes
And they'll join the common crowd;
While others they have ridiculed,
With jeer and frown and doubt—
Will be numbered with the "Smart Set,"
When Dyar's List comes out.

Now there's the *Cossus* family—
  Their name might well be mud ;
Their parents worked in wood, you know—
  The'll go down with a thud ;
While little Mrs. *Arctia*,
  Altho' she's talked about—
Will still be in the social swim,
  When Dyar's List come out.

There's Mrs. *Thyridopteryx*,
  Who owns a house you know—
And wears it round upon her back—
  (She was always fond of show)—
She'll take a mighty tumble,
  O how the crowd will shout,
To see her thrown down good and hard,
  When Dyar's List comes out.

But Mr. *Luna* Moth
  Who manufacturers silk,
Will still remain the cream
  Upon the social milk ;
While his couisin—*Polly Phemus*,
  (The one so large and stout)
Will be a leader in her set,
  When Dyar's List comes out.

Did you hear about Miss *Psyche?*
  The saucy little minx—
She's the one you will remember,
  Was engaged to Mr. *Sphinx ;*
But alas for insect love-dreams—
  The match ne'er'll come about—
They'll fly in different circles,
  When Dyar's List comes out.

And now you Human Insects—
  Whether master, maid or clown,
You may be called on any time,
  To go " way back and sit down."
Don't brag about your family—
  Your coat of arms, don't flout—
You may not look like thirty cents,
  When a brand new list comes out.

—H. H. N.

PROF. AND MRS. SNYDER and their daughter Marian, together with John and Hurd Comstock, have just returned from a trip through Colorado. The party had great success, both entomologically and otherwise. It will be remembered that the Professor visited Colorado two years ago and had the good fortune to shoot two deer at that time. Another fell by his rifle this summer which supplied the party with venison until their return home. Prof. Snyder took a larger number of specimens this year than he did before. The Comstock brothers have also a fine supply, and have added much to their collection.

Doings of Societies.

The fourth quarterly meeting of the California Entomological Club was a field day and the following members participated in the outing, which was held in the vicinity of Irvington and Niles, Alameda County, California: Charles Fuchs, James Cottle, Beverly Letcher, F. W. Nunenmacker, F. C. Clark, Edgar L. Ricksecker, J. C. Huguenin and F. E. Balisdell; visitors, X. Williams and Dr. Walther Horn, of Berlin.

During the day many interesting captures were made in spite of a strong wind which was blowing at the time.

When wearied with collecting the members congregated beneath a tree and an out-door meeting was held, during which Dr. Horn entertained the Society with an interesting account of the earlier collectors who visited the Pacific coast and the disposition of their types.

This was followed by a discussion on the value, care and what should be the final disposition of types.

Messrs. Fuchs, Letcher and Dr. Horn participated in the talk.

Social discourse then followed. Adjournment for the home trip. F. E. BLAISDELL, *Secretary*.

At the June meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, ten members were present.

Mr. Daecke reported the rearing of *Dasyllus posticatus* from a pine stump brought from Laurel Springs, N. J. He also recorded the capture of *Pamphila hianna* from Iona, N. J., which is the first accurate record for its occurrence in New Jersey. A new record for the State was made by the capture of *Erythromma conditum*, both sexes, at Iona, May 26. *Thymalus fulgidum* was also reported as common at Iona at end of May and beginning of June.

Mr. Laurent reported *Cicada septendecim* absent at Mt. Airy, but that it occurred at Chestnut Hill and Queen Lane, Germantown. Mr. Wenzel reported it as common along the West Chester Pike.

Mr. H. W. Wenzel exhibited some Coleoptera among which were *Saperda cretata*, making the first record from around Philadelphia; a probably new Cerambycid, near *Hylotrupes*, from Anglesea, N. J.; a very minute species of *Melasis;* and several other interesting species.

Mr. Laurent described a recent visit to the entomological department of the Brooklyn Institute.

Mr. Boerner recorded the capture at Sea Isle City, June 15, of specimens of *Lebia pulchella* and one of *Melanophila notatus*, both of which are new records for New Jersey.

Mr. Daecke said *Vespa carolina* has been considered rare in New Jersey. During this year he has taken it in five localities in the State.

Dr. Skinner exhibited specimens illustrating the life history of *Cicada septendecim*.

Dr. Castle reported the capture of sixty specimens of *Dichelonycha albifrons*, on pine, at Riverton, New Jersey, June 6th and 13th.

HENRY SKINNER,
Secretary, pro tem.

A meeting of the Feldman Collecting Social was held at Anglesea, N. J., on Monday, September 1st. A number of the members went to the shore on the previous Saturday and returned Tuesday morning. The following members were present: C. W. Johnson, H. W. Wenzel, Philip Laurent, W. J. Fox, Henry Skinner, Erich Daecke, Theodore H. Schmitz, E. Wenzel, A. Hoyer, F. Hoyer. There were a number of guests present. The outing was largely social and very little collecting was done.

OBITUARY.

Dr. Joseph Kriechbaumer. Born, March 13, 1819, at Tegernsee, Upper Bavaria, Germany. Died, May 2, 1902, at München, Germany. He was a doctor of medicine, and his first work in entomology was on Coleoptera. He soon confined himself to Hymenoptera, particularly the Ichneumonidæ, and it was through his work in this group that he took his place among the shining lights in Hymenopterology.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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CONTENTS:

Notes on the Early Stages of Culex canadensis Theob.

BY JOHN B. SMITH, SC. D.

This species was brought to my attention by Mr. J. Turner Brakeley, who wrote me from Lahaway, May 11, 1901, that he had found mosquitoes common in the woods on that day at one point. They seemed to be very fresh, made no attempt to bite, seeking rather to get away, and males were quite as abundant as the females. Mr. Brakeley was at this time following out the development of the pitcher plant mosquito, *Aedes smithii*, but he was interested enough in the occurrence of this new species to make a hunt next day for the breeding places, which he judged rightly enough, must be close by.

May 12th, examined first a spring formed in a hole left by a pine tree that had blown down; the root mass yet partly sheltering the spring. He found there a number of very dark gray, almost black wrigglers and pupæ and secured specimens. This is a permanent pool containing water all winter, and there is no reason why the larvæ could not have been there all winter of that season. Similar larvæ, pupæ and

empty pupa-skins were found in a rather large road puddle near a cranberry-bog. This place is always moist, and was probably filled with water all winter; but it does lose all water during the summer except after a heavy rain. In the shallow edges of a reservoir close by, no larvæ were found and none were found in road-puddles out of the woods. Adults emerged later in the day from some pupæ, and many larvæ pupated; the usual period of the pupal stage being 3 to 4 days. All the adults were sent to me and all were *canadensis*, the determination being made by Mr. Coquillett.

May 13th, another tour of investigation turned out a lot of very small blackish wrigglers as well as others that were almost or quite full grown, and the indications were that a second brood was already developing. In a spring, filled with leaves so that not a drop of water was visible, the leaves were shoved aside and in the water beneath, some half-grown wrigglers were found. Mr. Brakeley noted that these larvæ were much more active and "scary" than those found in the pitcher plants, and he suggests as a reason that they have more natural enemies to fear, and are hence more easily startled.

May 14th, quite a number of adults were noted in the woods, and again it was noted that they manifested no inclination to bite. Nor did any of them come to the house which was very close by—certainly not over 500 feet from the edge of the woods! They seemed to be, strictly speaking, woodland mosquitoes.

May 16th, the number of mosquitoes was much reduced; but very small larvæ were now found along the edge of the reservoir where it was more or less grassy, and many empty pupa shells were seen.

May 17th, adults began to issue from pupæ that had formed subsequent to May 12th, and an average period of 3½ days was established for this stage. A lot of the young larvæ was secured, but they did not do well in confinement and soon died. On the 19th, the full grown larvæ and pupæ had disappeared, and only small specimens were seen.

June 1st, I was at Lahaway and found this species common in the woods. Males were obtained by sweeping with the net

among the bushes, while females were taken readily in flight. They were not especially blood-thirsty, and while they would bite if left undisturbed, they were easily scared off. Among those that were taken in flight was one example filled with blood, which had not been obtained from any of our party. It was taken deep in the woods near an old spring, and it is doubtful whether any human being had been in that immediate vicinity for a month. There was no house within half a mile, and no traveled road anywhere near; yet from some source this specimen had obtained a meal of blood. Larvæ and pupæ were found everywhere in the road and other woodland pools, and in all the springs that we examined. All the adults bred proved to be *canadensis*. Followed out the course of a small stream through a marshy meadow and examined numerous pools, finding wrigglers wherever there was no sediment of iron rust. There is much bog iron here and most of the pools are "rusty"; where this was the case, there was no mosquito life. I verified the fact that none of these mosquitoes came to the house only a few rods off, and noted that where the abdomen was distended in those I caught, the crop contents consisted of a clear, almost colorless liquid. At this time very minute larvæ were found in the pools with those that were full grown—exactly the condition noted by Mr. Brakeley on the 16th. Assuming that the brood maturing June 1st was that started May 16th, it would give a 15-day period for the full development. As adults recently hatched were seen in numbers, May 11th, it would mean that the larvæ from which they came were in the pools during the latter part of April. Many of these pools came into existence during the winter—how did the larvæ get into them in spring? Many places containing larvæ June 1st were fast drying up into mere mud holes and would hardly be anything else until the following winter.

Nothing more was done with this species during the summer of 1901; but in October, Mr. Brakeley took the matter up again and reported larvæ in one of the springs on the 16th, after there had been frost and ice. On the 27th of the same month, larvæ and pupæ were obtained from the springs, and

on the 29th and 30th adult *canadensis* were obtained from the latter. In one spring which had been cleaned out during the summer, it was fairly alive with wrigglers just or recently hatched. Query if this is the hibernating crowd, the tail of which will be found next May. I see no reason why these larvæ in the spring should not live in there throughout the winter. Collections were continued from time to time and minute larvæ, evidently referable to this species were found November 8th, after heavy frosts, forming ice half an inch thick on exposed ponds. Other larvæ were collected November 18th and 25th, and on the 26th, with the thermometer ranging from 29½ to 36° in the open, the water in the spring was found to be 45°—warmer than any other waters on the place.

It was intended to continue these observations during the winter, but an attack of typhoid fever intervened, and not until March 23 and 24, 1902, were systematic collections again made by Mr. Miller H. Emley at Mr. Brakeley's orders and under his direction. The result of this collection was a large series of larvæ of *C. canadensis*, ranging from less than half to almost full grown, and all of these were sent me.

We have, therefore, very small wrigglers recorded as late as November 25, 1901, and somewhat larger specimens recorded as early as March 23, 1902. The inference is that the winter was passed in the larval stage, and as this was in running, spring water which rarely reaches the freezing point, the inference does not seem unwarranted.

It should be said that in October and November, 1901, Mr. Brakeley was scouring the woods for the hibernating quarters of *Anopheles*. He found the species of that genus, and *Culex pungens* in large numbers. He found no *C. canadensis* adults, and the inference is fair, in view of the thoroughness of the search, that there were none. Hibernation in the egg stage is not excluded; but unfortunately the egg of this species is not known, nor is the place or manner in which it is laid. A sending made during the early part of April arrived in bad condition; but a collection made on the 22nd reached me safely a day later. Adults began issuing on the 24th and up to the

morning of the 26th, some 40 specimens were secured; most of them males. Another lot reached me April 30th, and adults began to issue May 1st.

It is probable that this is the same brood observed by Mr. Brakeley, May 11, 1901, and it would indicate a very slow growth early in the year. There was certainly a month between the first larvæ and the first adult. It seems certain also that the development of this series is very irregular, as indeed might be expected, if the larvæ hibernated. On the other hand, the larvæ found in November, 1901, were not in sufficient abundance to account for the numbers found in the spring, unless the wrigglers had sought winter quarters. That this is not improbable is indicated by Mr. Brakeley's note that larvæ in November preferred remaining at the bottom of the breeding jar.

April 30, 1901, I visited the outskirts of Elizabeth with Editor McBride, of the Elizabeth Journal, and Dr. Robinson, of the Grammar School, who were conducting a mosquito crusade in that city. In a bit of swampy woodland on the Westfield road, pools were found that contained a few larvæ and many pupæ. From the pupæ *canadensis* and *cantans* were bred; but what larvæ remained all produced *canadensis*.

May 8, 1902, I sent Mr. E. L. Dickerson to the College Farm to investigate the woodland pools, and he found a series of full grown larvæ and pupæ, and another series of very small larvæ. Evidently the second brood had already made a start.

May 22nd, a specimen of the adult was captured at Bordentown by Mr. Brakeley, and at varying periods during the summer occasional adults were obtained; but not in such numbers or under such conditions as to require special notice.

This is the earliest and the latest mosquito occurring in New Jersey, but it never becomes a nuisance in towns or in houses. It will bite when given an opportunity, but does not seek the opportunity. Its normal food is something other than blood, and its usual haunts are such as to make access to animal juices exceptional. During the summer it drops out of sight and does not occur in collections of the common mosquitoes of any locality.

As to breeding places, it prefers woodland springs and pools, or ditches carrying spring water, It is almost universal in pools formed by crossing a road, and is essentially a cold-water species. I have never seen the larva in stagnant open water, and have never received it from such localities.

DESCRIPTION OF THE LARVA.

In its earlier stages the little larva is quite characteristic and readily recognized. The head is black, body slate gray, varying a little in tint, and the neck is somewhat contrasting pale; looks almost as if the larva had on a white collar. The anal siphon is large in proportion to the insect, and is stout rather than long. The slaty color persists during life, but the white collar disappears and the head is brown rather than black. It is altogether a stout larva and very active, the anal siphon stout in proportion to its length and shortest just before the change to the pupa. The head is convex above, flattening toward the front, of moderate size, a little transverse, the sides evenly rounded to the nearly straight front. In color it is yellowish brown or darker, with irregular blackish markings turning toward the centre or the front. The eyes are large, transverse and black or blackish. The antennæ are as long as the head, a little curved, stouter at base, narrowing very gradually, outer two-thirds darker though hardly black, rather bluntly terminated and sparsely set with small spines which become larger and more obvious outwardly. There is a large pit or puncture within the basal half from which arises a long, black bristly hair tuft, which reaches almost to the tip. At the tip there is one long bristly hair, and at its base arise several smaller, stiff spines. Mouth brushes as usual, the mentum triangular, its edges toothed. Thorax enlarged, almost circular in outline, convex, the lateral hair tufts prominent and about as long as the thorax is wide. Abdomen cylindrical, about half the diameter of thorax, tapering a little, the segments not deeply incised. The lateral hair tufts are somewhat sparse, shorter than those of thorax, becoming less obvious backward. The air tube is smoky brown, cylindrical, stout, of medium length, tapering somewhat from its middle to the tip. In the mounted cast skin the tube is about 2½ times as long as wide; but in the larva just before it is full-grown, the tube ia nearly 3½ times as long as it is wide; the double row of teeth short and extending less than half the length of the tube. The last segment is about as long as wide, chitinous, brown, the fringe of black hair tufting long and more sparse above. The anal processes are slender, short and inconspicuous. The pupa offers nothing out of the normal, so far as my observation extends.

The adult is rather easily recognized by the distinctly white banded tarsi, the terminal joint of posteriors white, by the

unbanded beak and by the brownish color in addition to all. It probably occurs throughout the State where the conditions that will permit its breeding, exist.

Notes on Vespoidea.

By H. L. Viereck.

Polybia nigripennis (Fabr.)

Polistes nigripennis Fabr. Syst. Piez., 1804, p. 272, n. 14.

Polistes nigripennis D. T. Cat. Hym., ix, 132, 1894.

Clypeus with the anterior edge forming an obtuse angle, a little broader than long. Front with an impressed line extending from the anterior ocellus down to a little distance above the margin of the clypeus.

♀ *Length* 15 mm.—The entire tegument opaque covered with a very fine and short golden pubescence, that on head and thorax shortest, not so apparent as that on the thorax, which has a beautiful golden lustre when held in certain lights. There are a few scattered punctures on the clypeus. First joint of flagellum as long as the two following joints united. Prothorax and mesopleuræ finely indistinctly punctured. The upper half of the latter has a crooked impressed line near the posterior margin. The dorsulum has a median impressed line extending to near the middle, a median, longitudinal, impressed line on the postscutellum and on the posterior face of the metathorax.

Testaceous or light brown, abdomen and legs darkest, head and last four segments of abdomen black, wings fuliginous.

One specimen in Coll. Acad. Nat. Sciences, Phila., from Georgetown, B. Guiana, S. Am.

Polistes carnifex Fabr.

Vespa carnifex Fab. Syst. Entom.,'1775.

Polistes major Sauss not Beauv. Etud. Fam. Vespid. ii. p. 90, 1853.

Polistes carnifex Sauss in part. Id.

Polistes carnifex Fox in part. Proc. Calif. Ac. Sci., iv, 112, 1895.

Clypeus ♀ more deltoid than quadrate, distinctly convex. Clypeus in ♂ longer than wide.

♀ *Length* 28 mm.—Clypeus with sparse punctures, a raised point between the insertion of antennæ. Metathorax with a median longitudinal furrow, the surface transversely striated. First joint of flagellum as long as the following three united. Entire tegument opaque, covered with an almost imperceptible golden, short pubescence. The head above the dorsulum, first half of antennæ, a triangular mark on apical margin of each side of metathorax, the furrow on the same, the legs, excepting the small tarsal joints and parts of the coxæ, first segment, exceping apical bands, the second all but the apical half, the third, with the exception of

apical two-thirds, dark brown to almost black, the rest of the insect more or less yellow. Wings deep yellowish brown, nervures dark brown.

♂ *Length* 25 mm.—Excepting the sexual differences, similar to the ♀.

The ♀ from San Jose Del Cabo, L. California. The ♂ Jilotlan Jalisco, Mexico. While identifying the latter specimen it was found two species had been confused under *P. carnifex* Fabr.

Polistes major Beauv.

Polistes major Beauv. Ins. d'Afr. et d'Amer., p. 206, pl. viii, fig. 1.
Polistes carnifex Sauss. in part. Etud. Fam. Vespid., ii, 90, 1853.
Polistes carnifex Fox in part. Proc. Calif. Ac. Sci., iv, 112, 1895.

Clypeus ♀ more quadrate than deltoid, not so distinctly convex. Clypeus in ♂ as long as wide.

♀ *Length* 20 mm.—Surface of face between the insertion of antennæ only slightly raised, a short longitudinal impressed line just above. Otherwise the sculpture and color pattern is much the same are in *P. carnifex*.

♂ Length 20 mm.

The structural differences given and the size readily separate this species from the large *P. carnifex* Fabr.

Mazatlan, Mexico. San Domingo. (Coll. Am. Ent. Soc.).

A New Phasmid from Mexico.

By A. N. Caudell. Washington, D. C.

In the collection of insects made in Mexico some years ago by Dr. E. Palmer, was a single specimen of a new species of walking stick, with short antennæ, belonging to the genus *Bacillus* as used by Scudder for the United States species.* This insect may be called *Bacillus palmeri* and described as follows:

General color testaceous, much lighter below and on the head; dorsally, except on the head and pronotum, almost black. Head as long again as broad, enlarging from behind forwards and longitudinally attached, light testaceous, slightly paler below and with a dark postocular stripe, scarcely reaching the thorax, just at the upper margin of the eye is a short slender black line; dorsally between the antennæ two carinæ start, and after proceeding backwards a short distance, break up into an irregular mass of smaller tortuous carinæ, and then continue on as three sub-parallel carinæ, all of which terminate about midway of the head, the space between them somewhat infuscated. The antennæ are but

* Psyche, vi, 372 (1893).

little longer than the head, the basal segment very broad and composing a fifth of the entire length. Pronotum short, not as long as the head; meso thorax distinctly longer than the metanotum; intermediate segment short and inconspicuous; legs long and slender, all similar and keeled below to the apex; abdominal segments elongate, seventh and ninth subequal, eighth slightly more than one half as long as the seventh; anal plate acutely triangular and distinctly keeled. Length of body from head to tip of anal plate, 58 mm.; head, 3 mm.; antennæ, 5 mm.; prothorax, 2.25 mm; mesothorax, 14 mm.; metathorax, 10 5 mm.; abdomen, including intermediate segment, 28 mm.; fore femora, 22 mm.; middle femora, 22 mm.; hind femora, 19 mm.; cerci, 2 mm.

One female, Durango, Mexico, July, 1896. *Type*, No. 6603, U. S. N. M.

The much longer legs of this species will serve to readily separate it from the United States species.

A New Ceropales (Hymenoptera).

BY H. L. VIERECK.

Ceropales Latr. = **Agenioxenus** Ashm.

A specimen of *Ceropales maculatus* Latr., from Hastings, England, runs to *Ceropales* as given in Mr. Ashmead's table. In *Ceropales robinsoni* Cress = *C. nifiventris* Walsh, the cubitus in hind wings originates *behind* the transverse median nervure and not *before* as in Mr. Ashmead's table; in other words, the type of *Agenioxenus* Ashm., is congeneric with the type of *Ceropales* Latr. (*Ceropales maculatus* Latr.), consequently *Agenioxenus* must be placed as synonymous with *Ceropales* Latr.

Ceropales quaintancei n. sp.

Almost entirely dull ferruginous, covered with very fine golden pubescence, wings pale fuliginous.

♂ *Length* 10.5 mm.—Head with only a few indistinct punctures on the front, a shallow fovea extending down to the antennal insertion, from a short distance below the anterior ocellus. Length of the first joint of flagellum about equal to length of the second. Pronotum with well separated indistinct punctures, the propleuræ on the anterior half divided into an upper and lower half by a well impressed fovea. Dorsulum with a fine line extending back to posterior margin from little before the middle, situated near the lateral margin, from the middle of the dorsulum to the posterior margin there is a moderate medial elevation, punctures of the mesonotum separated, shallow. Punctures on mesopleuræ more scattered

than on the dorsulum. Scutellum and postscutellum practically impunctate. Metathorax indistinctly punctured, an impressed line medially starting at the anterior margin and obsolete beyond the middle, metapleuræ separated from the metanotum by a very moderate curved impressed line. Abdomen impunctate.

The apical third of the antennæ is a dark brown.

Type Coll. Acad. Nat. Sciences, Philadelphia.

Type locality, College Park Maryland. September, 1892. Received through Mr. Quaintance of the Maryland Agricultural College and Experiment Station.

Two ♂ paratyes, S. Illinois (C. Robertson), 12 mm. long. These specimens have yellow trimmings. Labrum, clypeus, border along inner eye margins, the lower division of the propleuræ, a narrow line along the outside eye margin, posterior border of the pronotum, poscutellum, posterior angles of metathorax and a line on posterior coxæ, yellow. Comes nearest to *C. elegans* Cress., but that has no fovea on the front, has hyaline wings and more pale markings.

A New Method for Studying Venation.

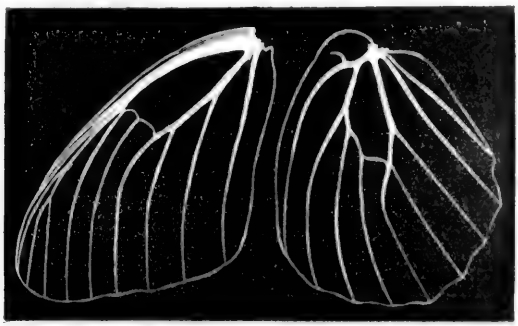
By Alfred P. Hall.

During the past winter while studying the venation of Lepidoptera, I felt the need of a method for preserving the results in compact form for easy comparison. Mounting on glass was much too bulky for my purpose, and after several experiments I hit upon a method that seems to meet all the requirements, which possesses the merit of simplicity as well This method being new to several entomologists to whom it has been shown, it occurred to me that it might be of interest to other collectors as well, and herewith give directions which are easily followed by any one.

The wings are first moistened with alcohol and then put in Eau de Javelle solution until thoroughly bleached. They are then removed to fresh water for five or ten minutes to remove the lime solution, thus preventing deposits in drying. Remove the wings by immersing a piece of paper in the water and floating the wing upon it, much in the manner of mounting sea weeds. The paper and wings are then removed together and

the surplus moisture removed with blotting paper. Lay a clean piece of paper over the wing and place between the leaves of a book and dry under pressure.

When dry the wings separate easily from the paper and may be fastened to a sheet of glass with an atom of shellac. Place this sheet of glass in an ordinary photographic printing frame with a sheet of sensitive paper, and place in the sun until the paper turns dark and bronzy. On removing the paper the outline and veins of the wing are seen in exquisite detail in white against the dark ground.



Velox or any of the developing papers may be used and then the work can be done in the evening. The prints are finished in the usual way and may be mounted on cards or preserved in an album, making a collection that is not only beautiful to look at but also of scientific value as well. This process is not confined to Lepidoptera alone. The wings of Odonata make beautiful prints and need no preparation, the larger Diptera and Hymenoptera give prints of remarkable clearness which may be easily studied with a glass.

Insect Enemies: A Matter of Taste.

By F. M. Webster, Urbana, Ill.

The saying that "what is one man's meat is another man's poison," may not apply exclusively to humans. The lower animals have their individual idiosyncrasies as well as men.

Among domestic animals, some individuals are slow and deliberate, others quick and impatient. Some feed freely upon articles of food that will be avoided by other individuals. Birds are known to have individual likes and dislikes. No one who has reared insect larvæ to the adult, has failed to observe the difference in the individual temperament of the several members of the family. Some will be quiet and docile so to speak, while others will be iritable and uneasy. In a most excellent series of papers on "The Wanderings of Insects," Professor Karl Sajö has justly remarked that, among insects, there will be some individuals of the same species that will be wanderers while others will be stay-at-homes. Among the Hymenopterous enemies of other insects, while there are some species that appear to be generally parasitic on other insects, the majority are more exclusive in their hosts, and particular genera will be found parasitic on another, or on another family, so that, knowing the species of a parasite, we can determine at once the order and not unfrequently the family or genus to which the host insect belongs. But even here, it is still to be proven that there are not individual exceptions; it is by exceptions that nature frequently protects from extermination. And, it is here as elsewhere, we only know what we see, and while on this basis we may form a good idea of the nature of effects that will follow certain causes, we must not lose sight of the fact that there are exceptions to everything—except death itself. For this reason, a single observation on the habits of an insect, bird or animal is worth just that much; it may be the one out of a hundred or even thousand exceptions. Therefore, I wish it to be clearly understood that I do not wish to depreciate the value of isolated observations, but to point out the very great need of further investigation with several individuals, in order to be sure that it is the rule and not the exception that we have observed, and this is quite apropos to the criticism of duplication of work, that is frequently offered. The so called duplication, is not in any sense compilation, and if an observation is honestly made and correctly recorded, it is never without value, and frequently it is the one thing necessary to an accurate conclusion. We have

insects that are supposed to be distastful to birds and even other insects, and information on these points is always in order, but we must be sure that, what we suppose to be normal, is not really exceptional.

Our milkweed butterfly, *Anosia plexippus* L., which breeds in the north during summer and in the fall migrates to the far south, is supposed to be distastful to birds, but on an island in Aransas Bay, on the gulf coast of Texas, it is eaten by a mouse of the genus *Onychomys*. So, while the butterfly may be distastful to birds, it is not necessarily so to rodents. Now, another bit of information has been secured which is not only valuable, but it illustrates the fact that one truth gained in one part of the world frequently goes to strengthen another, secured in another part of the world. Mr. J. G. O. Tepper, curator of the South-Australian Museum, at Adelaide, contributes a note to a recent number of "Garden and Field," which illustrates this point exactly.

Mr. Tepper is in the habit of taking his noonday lunch in a quiet room several flights of stairs above the ground, and some two years ago cultivated the acquaintance of a solitary mouse which he fed with crumbs and scraps left from his lunch, until mouse became quite tame. Finally, some damaged and useless insects were left loosely on the window-sill frequented by the mouse, and these were afterwards found reduced to a few fragments. Suspecting "mousie" of having done this, he replaced them with others and found that his suspicions were well-founded, and the dead and dried insects were consumed with evident satisfaction, without exception. Then, other insects both dead and living were submitted and also eaten. These last consisted of both fresh and dried blowflies, beetles, caterpillars, cockroaches, etc., and were "preferentially" consumed. Mr. Tepper further states that their common "cockchafer," *Anoplognathus odewahui*, had been refused by a pet Laughing Jackass (*Pralcyon gigas*, F. M. W.), but the mouse had no such squeamish tastes and ate all that were offered it. Here, again, we have the phenomenon of a native bird refusing an insect that is readily devoured by a mouse. The only pity is that Mr. Tepper did not experiment with other mice and, if

possible, with another bird. However, it is certainly interesting that this observation should bear out so nicely the behavior of the mouse on the coast island of Texas.

I have quite recently noticed our common black ant unceremoniously fastening its jaws into and dragging away a crushed but scarcely dead *Chrysopa*, the odor of which is certainly vile enough to disgust almost anything. Incidentally, I saw at the same time several *Cicindela vulgaris* rush upon these same ants and seize them, but did not so far, as I could observe, kill them. This is the species of ant, however, that is mimicked by the Capsid, *Pilophorus amœnus*, and might have been inedible for the beetle, as smaller ants running about among them were certainly caught and eaten by the tiger beetles. This tragedy of the ants, *Chrysopa* and *Cicindela*, took place on the brick walk bordering a busy street, where people were continually passing to and fro, frequently interruping the insects and crushing them under foot. It was an isolated observation and I wondered at the time if such things were usual, or whether I had happened upon an exception to the rule, for I have long ago learned that there is very much that goes on among even our most common insects that the entomologist does not see. Just why, may be as much of a psychological as an entomological problem, for once observed there is very often no difficulty experienced in observing the same actions afterwards. So, then, the three questions, when observing insects being attacked by beasts, birds or each other, or, seemingly being distasteful to one or all of these, are as follows: is it a case of individual variation of taste, or is it usual, or has this been going on about me for years and been overlooked by myself and others? The moral would be, then, that close observations are always in order, even though having little value in themselves, as they may contain the key that is to solve the mystery of some other similar phenomenon, that some one else has observed, perhaps in another part of the world. Too much stress could be placed on a single observation, or those made on a single individual, but these may be taken as indicating what may *possibly* be found true of larger numbers on much extended investigations.

Compound Vernacular Names of Insects.

By Edwin W. Doran, Ph. D.

The necessity for uniformity in writing the common, or vernacular, names of insects is apparent to every student of entomology; but it must also be apparent to every one that there is no uniformity, especially in compounding these names. Entomologists owe to the present generation and to posterity something more than the mere accumulation of facts. Educative expression of these facts is necessary, and correct form in writing is worthy of their attention.

The question of uniformity in writing the vernacular names of insects has been discussed somewhat at various times by entomologists. In 1897 Prof. C. P. Gillette presented a paper and brief list of words at the annual meeting of the Association of Economic Entomologists, and in the following year I presented a paper before the same body suggesting certain corrections in that list. But these and other discussions seem to have had little effect. I, therefore, call attention to the subject again, and have also undertaken the preparation of a much more extensive work, containing a list of three or four thousand names and an introduction giving the principles and rules for compounding names. This I hope to publish soon. The introduction in that paper has been prepared chiefly by Mr. F. Horace Teall, department editor of the "Standard Dictionary." I have drawn upon that largely in presenting the principles and rules of compounding names of insects in this paper.

Custom cannot be relied upon in determining the proper forms of insect names, as it is entirely unsettled, different authors using different forms, and often the same person using different forms in the same publication. Custom, therefore, is confusion. For example, we find all the following forms in common use: "Elm leaf beetle," "elm leaf-beetle," "elm-leaf beetle;" "apple tree tent-caterpillar," "apple-tree tent caterpillar," "apple-tree tent-caterpillar."

But when we take names like "reddish yellow spruce bud worm," which may be written in at least eight forms, or "red humped apple tree caterpillar," "sooty corn root web worm,"

"two striped sweet potato beetle," and many others, with all their combinations, the mind is overwhelmed in chaos. Besides, questions relating to good use in language are not settled by mere majorities, but by the majority of the best speakers and writers. Moreover, the compounding of the names of insects is a question pertaining to the correct use of English, and need not be settled by entomologists alone, unless they are also authorities on English. Unfortunately many are not. Word-forms must be determined by language principles.

The following *general principles* are quoted from the "Standard Dictionary," and are applicable to insect names.

"1st. That all words should be separate when used in regular grammatical relation and construction, unless they are jointly applied in some arbitrary way.

"2d. That abnormal association of words generally indicates unification in sense, and hence compounding in form.

"3d. That no expression in the language should ever be changed from two or more words into one (either hyphened or solid) without change of sense."

From these "principles" we may deduce the following *general rules* specifyng the conditions under which the names of insects should be written in compound form:

1. A general name used with that of a plant or a host or prey prefixed for specification; as, *potato-beetle, onion-fly.*

2. A general name used with any other name prefixed for specification denoting similarity, habit, or characteristic; as, *buffalo-gnat, army-worm, blister-beetle.*

3. Any pair of names in joint arbitrary use; as, *walking-stick, currant-borer, leaf-roller*

4. A phrase consisting of an adjective and a noun used as a mere name; as, *bluebottle, grayback, longsting.* These are more often writen solid without the hyphen.

Names like *leaf-crumpler, leaf-folder,* and *leaf-roller*, are unquestioned compounds, and the weight of usage and authority favors their preservation as such in specific phrases like *apple leaf-crumpler,* etc. Grammatical reasoning might be made strongly to prescribe such forms as *apple-leaf crumpler,* but that would give an unnecessary separation of two parts of a

normal compound, and would constitute a new category of name-forms that may well be spared.

In order to illustrate, as far as possible, all the foregoing rules and principles, I have selected the following brief

LIST OF NAMES.

Apple bark-beetle.
Apple-tree tent-caterpillar.
Army-worm.
Banded soldier-bug.
Barley root-louse.
Bean leaf-beetle.
Beet carrion-beetle.
Black-currant gall-mite.
Buffalo-gnat.
Cabbage plant-louse.
Cabbage-worm.
Case-making clothes-moth.
Cherry twig-tier.
Cigar-case bearer.
Clover-head thrips.
Clover root-borer.
Colorado potato-beetle.
Corn-root plant-louse.
Dark-sided cutworm.
Dried-currant moth.
Egg-parasite.
Elm-tree white scale.
Fall canker-worm.
Flat-headed peach-borer.
Forest tent-caterpillar.
Gall-maker.
Giant East-Indian bee.
Gooseberry fruit-fly.
Grape gall-gnat.
Grape-vine flea-beetle.
Green June-beetle.
Harlequin cabbage-bug.
Hedge-hog caterpillar.
Hickory-stem gall-louse.
Horse-fly.
Imported cabbage web-worm.
Jumping tree-cricket.
Kissing-bug.
Leaf-cutting ant.
Lesser migratory-locust.
Locust twig-borer.
Maple gall-moth.
Mosquito-hawk.
Mulberry-silkworm.
Nine-spotted Ladybird.
Oak bark-weevil.
Olive-brown bud-worm.
Orange rust-mite.
Ox-gadfly.
Oyster-shell bark-louse.
Peach fruit-worm.
Peach-tree bark-borer.
Pear-tree blister-beetle.
Pickled-fruit fly.
Pine emperor-moth.
Pistol-case bearer.
Plum leaf-worm.
Post-oak coccid.
Potato stalk-borer.
Quince curculio.
Rascal leaf-crumpler.
Raspberry gouty-gall beetle.
Red-backed cutworm.
Red-legged locust.
Seventeen-year cicada.
Shade-tree insects.
South-African ladybird.
Three-lined leaf-beetle.
Vine-curculio.
Western onion-thrips.
Yellow-pine bark-beetle.
Zebra-caterpillar.

As so little has been published on this subject, discussion or criticism will be welcomed.

A List of the Bombycidae Found at Webster, New Hampshire.

By Charles F. Goodhue.

LYCOMORPHA.

Pholus Dru. Common in August on the flowers of golden rod.

CTENUCHA.

Virginica Charp. Common in June on flowers of wild blackberry. Larvæ hybernate, and feed on grass.

CRAMBIDIA.

Pallida Pack. Rather common through August.

Casta Sanborn. Very rare. Middle September.

LITHOSIA.

Bicolor Grt. Rare.

LEBENA.

Trinotata Wlk. Rare in May. Found at rest on the trunks of trees.

Orvilla Grt. Rather rare, found in June in the same places as the last species.

ARGRYROPHES.

Pustulata Wlk. Quite rare; we once took a number of specimens of this rare moth in the evening in a pasture nearly covered with gray birches.

Cilicoides Grt. Very rare; we never met with this species until 1898, when we took three at light during the first of July.

HYPOPREPIA.

Miniata Kirby. Common at light in July.

Fucosa Hbn. Not so common as the last and found at the same time.

CLEMENSIA.

Alabata Pack. Rare. Found at rest on tree trunks during July and August.

EUBAPHE.

Læta Gn. Rare. July.

Opella Grt. Quite rare. We have found this species in June on a rather high hill covered with hard wood sprouts. The moths were at rest on the upper side of the leaves some four or five feet from the ground, and owing to their peculiar flight and dark color are very hard to take.

Immaculata Reak. Common during June and July in old fields.

Var. *trimaculosa* Reak. Same time and place as the preceding.

Aurantiaca var. *rubicundaria* Hubn. Rare. In fields of grass in June, July and August.

Var. *ferruginosa* Wlk. Common. Same dates as preceding. The larvæ are small black bears, looking like the young larvæ of *Arctia virgo*. They feed on grass.

Var. *brevicoris* Wlk. Not common.

Var. *quinaria* Grt. Not common.

HAPLOA.

Clymene Brown. Very rare. June and July.

Lecontei Gur. Very rare. July.

UTETHEISA.

Bella Linn. Rare in this locality. July.

CYCNIA.

Tenera Hubn. Not common. July.

Oregonensis. Not common. July. The larvæ are small yellowish white bears and feed on dog bane.

Egle Dru. Common. June. Larvæ on milkweed.

HALISIDOTA.

Tessellaris A. and S. Common. June. Larvæ on apple, quince, etc.

Maculata Harr. Rarer than the other two species. June and July. The bright yellow, black tufted larvæ are found on alder and ash.

Caryæ Harr. Common. June. The white, black-tufted larvæ are found on a number of fruit and shade trees; they are gregarious during the early stages, but when half grown wander about singly like the tent caterpillar.

ECPANTHERIA.

Ocularia Fabr. Very rare. The large black hairy larvæ are seen crossing highways in the late fall, like that of *P. isabella.*

ESTIGMENE.

Acræa Dru. Common. Larvæ feed on a variety of plants, and the moth is on the wing in May, June and July.

HYPHANTRIA.

Cunea Dru. Common, May and June. The larvæ feed on several kinds of fruit trees, but aside from disfiguring the trees for the time, they do little damage, as they get in their work so late in the fall that the leaves are nearly ripe.

PYRRHARCTIA.

Isabella A. and S. Common. Last of May and through June. The larvæ are the common reddish brown and black bears that are seen hurrying across the highways on warm Indian summer days late in fall, looking for a place to pass the winter.

PHRAGMATOBIA.

Fuliginosa Linn. Not common. May. Hibernating larvæ are 1.25 inches long, color black, thickly covered with rather short stiff bristles which spread in all directions so as to nearly conceal the body color. The bristles vary in color in different specimens from reddish brown to foxy yellow, with the first three segments much darker, nearly black, especially on the sides. Others are a dirty yellow buff all over with no dark shade on the first three segments. The bristles are nearly of a length, and look as though sheared, much the same as the larvæ of *Pyrr-*

harctia isabella. We have never seen any larvæ of this species that could be mistaken for that of *assimilans*, var. *franconia* Slosson. The larvæ of the latter species is more slender, light yellowish white or straw color, with rather long soft bristles of the same color as the body, and lacks the usual dark shade found on the anterior segments of *fuliginosa*.

Assimilans var. *franconia* Slosson? Rare. Whether this is var. *franconia* or an undescribed species we do not know, we are very sure it is not *fuliginosa*, but have never seen an authentic specimen of *franconia*, and while it does not just agree with Mrs. Slosson's description and figure it comes very near it.

The larva was found feeding on the flowers of the common thoroughwort. It is pale yellow, thickly covered with rather long soft light yellow hair. It looks almost exactly like the larvæ of *Cycnia oregonensis* and would be taken for it. The moth came out in July.

SPILOSOMA.

Virginica Fb. Common during most of the summer.

Prima Sloss. Rare. June. Larvæ black with a narrow pale yellow dorsal line, and covered with rather long stiff black bristles. Feeds on grass and passes the winter in the pupa state.

Antigone Strecker. Rare. June.

CALLARCTIA.

Virgo Linn. Common. July and August. The hibernating larvæ are black, and covered with stiff black bristles; when found in early spring, after moulting, the bristles become reddish brown with those on the dorsal part of the last four segments quite dark, nearly black.

Virguncula Kirby. Rare. June and July. The larvæ hibernate and are black, covered with rather long black bristles with a reddish shade on the sides.

Parthenice Kirby. Common. July to September. We have had a large number of the larvæ of this species and *A. virgo*, and cannot separate them, as there is no difference except in size, and even this won't work with a small *virgo* and large *parthenice*. There may be a difference in the early stages, we have not had any *parthenice* larvæ during the first two stages, hibernating larvæ of *virgo* being black.

Anna var. *persephone* Grt. Rare, May and June. We have never seen the larvæ of this species.

MIMARCTIA.

Argæ Dru. Common. Two broods. May and August.

CYMBALOPHORA.

Phyllira Dru. Rare. May and June. This species shows great variation, scarcely two specimens being just alike. The larvæ on their moult are jet black thickly covered with stiff black bristles.

APANTESIS.

Nais Dru. Rare. Two broods June and August. We have never seen the larvæ of this species.

HYPOCAMPA.

Caja race *americana* Harris. Very rare.

EUTHISANOTIA.

Unio Hbn. Rather rare. June. Larvæ on grape.

Grata Fbr. Rare. July. These two species have usually been classed among the *Bombycidæ*, and for that reason we put them here now, though they belong in the Noctudiæ.

NOTOLOPHUS.

Antiqua Linn. Common. Two broods July and September.

Definita Pack. Rare. September.

Lencostigma A. and S. Common. July to October.

OLENE.

Cinnamomea G. and R. Rare. August.

Leucophæa A. and S. July. Rather common. Larvæ on apple, cherry, etc.

Achatina A. and S. Quite common. July and August. We have had the larvæ of all three species and find them very distinct, *leucophæa* being nearer to *cinnamomea* than *achatina* in the larvæ.

EUDEILINIA.

Herminiata Gn. Rather rare. July, in wet meadows. This species has been classed as a Geometrid, and has all the habits of that family.

ORETA.

Rosea Wlk. Very rare. August.

Irrorata Pack. Very rare. Last of June.

PLATYPTERYX.

Arcuata Wlk. Common. May, June and July.

FALCARIA.

Bilineata Pack. Rather common. Three broods. Larvæ on birch.

EUCLEA.

Delphinii Bdv. This species and the var. *S. quercea* H. Sch., *interjecta* Dyar., and *viridiclava* Wlk. are common in June. Larvæ on apple.

PHOBETRON.

Pithecium A. and S. Rare. Larvæ on apple, oak, etc. This species has the most peculiar looking larva of any species found here, though that of *Falcaria* is a close second.

APODA.

Biguttata G. and R. Rare. Middle July.

TORTRICIDIA.

Flexuosa Grt. Rare. July. Larvæ on maple.

Flavula H. Sch. Rare. July.

Testacea Pack. Rather common. June.

Fasciola H. Sch. Rather common. June and July. Larvæ on maple and not to be distinguished from *T. flexuosa*, found at the same time on the same tree, except that the *flexuosa* larva was a little larger and slightly marked with red.

PACKARDIA.

Elegans Pack. Rare. July.

Geminata Pack. Common. June.

Goodellii Grt. Rare. June. We have no doubt but that this is a good species. The moth is decidedly different from *geminata* in shape and markings.

GLUPHISIA.

Septentrionis Wlk. Rare. June and July.

EUMELIA.

Lintneri Grote. Rare. First of May.

APATELODES.

Angelica Grt. Rather rare. Larvæ on ash.

DATANA.

Ministra Wlk. Common. Larvæ on a large variety of fruit and forest trees.

Angusii G. and R. Rare. Larvæ on hickory.

Drexelii Edw. Common. Larvæ on *Hamamelis*.

Major G. and R. Common. Larvæ on *Andromeda*.

LIGUSTRINA.

Integerrima G. and R. Rare. Larva on hickory.

Contracta Wlk. Rare. Larva on several forest trees, like oak, chestnut, hickory *and Hamamelis*.

ICHTHYURA.

Apicalis Wlk. Rather rare. Larvæ on poplar, and closely resembles that of *Ich. albosigma*. The moth appears in May and June.

Strigosa Grt. Rare. June.

Inclusa Hbn. Sometimes common. April, May, July and August. Larvæ on poplar.

Bruceii H. Edw. Common. May, July and August. Larvæ on willow.

Albosigma Fitch. Common. April, May, July and August. Larvæ on poplar.

NADATA.

Gibbosa A. and S. Rare. June and July. Larvæ in oak.

LOPHODONTA.

Angulosa A. and S. Rare. June and July.
Ferruginea Pack. More common than the last. June.
Basitriens Wlk. Rare. Middle July.

DRYMONIA.

Georgica H. Sch. Rare. Last of June,

PHEOSIA.

Dimidiata H. Sch. Not common. June and August. Larvæ on poplar and willow.

NOTODONTA.

Stragula Grt. Quite common. July. Larvæ on poplar and willow.

NERICE.

Bidentata Wlk. Common. June and August. Larvæ on elm.

SYMMERISTA.

Albifrons A. and S. Rare. May. Larvæ on Oak.

XYLINODES.

Lignicolor Wlk. Rare. June.

SCHIZURA.

Ipomeæ Doub. Rare. July.
Leptinoides Grt. Rare. June.
Apicalis G. and R. Rare. June and July.
Unicornis A. and S. Common. July. Larvæ on apple, plum and cherry.
Eximia Grt. Rare. July.
Concinna A. and S. Common. May and June. Larvæ on apple, pear, willow, etc.

SEIRODONTA.

Bilineata Pack. Rare. June.

HETEROCAMPA.

Guttivitta Wlk. Rather common. May and June. Larvæ on oak.
Biundata Wlk. Rare. June.

MACRUROCAMPA.

Marthesia Cram. Rare. July.

CERURA.

Borealis Bdv. June. Larvæ on blackcherry.
Occidentalis Lintn. Rather rare. June. Larvæ on willow.
Cinerea Wlk. Quite common. June and July. Larvæ on willow.

SAMIA.

Cecropia Linn. Common. May, June and July. Larvæ feed on a large number of fruit and forest trees.

CALLOSAMIA.

Promethea Dr. Common. May and June. Larvae on lilac, wild cherry, black birch, hazel and buttonbush.

TROPÆA.

Luna Linn. Common. June and July. Larvæ on apple, beech, etc.

TELEA.

Polyphemus Cram. Common. June and July. Larvæ feed on a large number of trees and shrubs.

AUTOMERIS.

Io Fab. Common. June and July. Larvæ are general feeders.

HEMILEUCA.

Maia Dr. Common. September. On low land. Moth flies by day. Larvæ feed on meadow sweet.

ANISOTA.

Stigma Fab. Rare.

Virginiensis Dr. Common. May. Larvæ on oak.

Rubicunda Fbr. June. Larvæ on maple.

CITHERONIA.

Sepulchralis G. and R. Very rare. Larvæ on pitch pine; full grown the last of July.

BASILONIA.

Imperialis Dr. Common. June. Larvæ on pine.

PHYLLODESMA.

Americana Harr. Rare. June.

CLISIOCAMPA.

Disstria Hbn. Sometimes common. Larvæ feed on a variety of trees.

Americana Fab. Common. July. Larvæ on apple, cherry, etc.

TOLYPE.

Velleda Stoll. Common. September and October. Larvæ on apple, plum, grape, peach and several forest trees.

Laricis Fitch. Rather rare. September. We have found a number of cocoons on small pines, which would indicate that it was one of its food plants.

COSSUS.

Centerensis Lintn. Rare.

PRIONOXYSTUS.

Robiniæ Peck. Rather common. Larvæ in red oak, white oak and and locust.

STHENOPIS.

Argentomaculatus Ham. Common. June. Larvæ feed in the roots of gray birch, willow, alder, etc.

HEPIALUS.

Gracilis Grt. Common. July. The moth comes readily to light, often several at once.

A New Papilio from the Orient.

By George A. Ehrmann, Pittsburg, Pa.

Papilio tahmourath spec. nova.

Male.—Allied to *Pap. agestor* Gray. Head, palpi, antennæ and thorax are the same as in *P. agestor*. Abdomen is darker and has broader, grayish rings than are met with in *P. agestor*. Forewings.—The upperside have the same markings that are met with in *P. agestor*, except that the gray is more suffused with blackish scales, and that the discoidal cell has four unequal bluish ashen gray bars, whilst in *P. agestor* this cell is unbroken and is filled in its entirety. Hindwings on the upperside: the ground color is of a deep velvety black, whereas in both sexes of *P. agestor*, it is reddish fulvus. The discoidal in this member, too, is decorated with four unequal bars, similar to that of the forewings, and which is not the case in *P. agestor*. The sub-marginal row of lunated spots is almost wanting, the two nearest the apex, are the most prominent. There is also a large reddish triangular patch on the anal angle, extending upward to the discoidal cell. This patch is toothed toward the abdominal margin, but well defined inwardly. The abdominal margin is black. Forewings on the underside; the markings are all the same as above, but a little lighter in color; on this side of the forewings in *P. agestor* the apex is a pale brown. In *Pap. tamourath*, this is wanting, and the colors are uniform throughout. Hindwings on the underside; the ground color is pale reddish fulvous, with the grayish markings as above, but much lighter. There are no dark brown markings between the nervules 2, 3 and 4, which are found in both sexes of *P. agestor* Gray.

Exp. 3½ inc.

Type.—Coll. Ehrmann.

Hab.—S. China.

Note.—D'Herbelot tells us that there is a Persian story, that Tahmourath was the first to cultivate rice and to nourish silk worms, and as China is the land of rice and silk, the writer gladly dedicates this beautiful creature to Tahmourath's honor. This species will form the fourth member of the sub-genus *Cadugoides*. Viz.: *agestor* Gray, *tahmourath* Ehr., *govindra* Moore and *epycides* Hew.

Prof. H. F. Wickham of the University of Iowa has returned from a collecting trip to the Owens Valley region and adjacent mountains in California. He did some work in regions never before investigated entomologically and also worked over some of the ground that had been investigated by Dr. Horn years ago. The trip was quite successful.

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 a 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., NOVEMBER, 1902.

Science should not be made ridiculous by silly or absurd statements. We are moved to make these remarks from seeing the term "frightened mouse color" in a description of an insect, *Colletes salicicola*. Now, if there are any accurate observations to prove that a mouse changes color when "pussy" is after it, we are willing to humbly beg the pardon of the person or persons using the term. We might suggest a photographic apparatus by which accurate observations could be made along these lines. Mice and cats are both common. It is said that under certain conditions negroes turn white (we have not observed it), and as a parallel term to "frightened mouse" color, why not use "frightened negro" white? We have seen negroes turn white in the dissecting-room pickle, but in that case their fright was over. After this we will carefully look at every mouse we see run across the floor, and will shy a boot after it to produce a possible change of color. Should not the species of mouse be mentioned? What color do white mice assume when they have neurasthenia? Doubtless some mice of the same species are paler than others, and we suggest the term pale mouse color, but we hesitate to accept a nomenclature parallel to "frightened mouse" color or "frightened negro" white. We respectfully call the attention of the United States Government Bureau of Standards to this subject, and suggest that they investigate this matter in conjunction with the Mammalogical Bureau of the Department of Agriculture.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

ARRANGEMENTS are being made by the State Entomologist of New York to supply schools desirous of such aid with small collections of insects upon the payment of a nominal fee. These collections are to be designed to illustrate courses in zoology, biology, nature study, and it is announced that they will be classified into the following divisions:

1. A systematic collection of about 100 representatives of the principal orders, with series illustrating the transformation of species having both complete and incomplete metamorphoses.

2. A collection of about 100 of the more common interesting species found in the field, together with series illustrating the various stages and habits of some of the more important forms.

3. The same as number 2 but composed largely of insects met with in the Spring.

4. Special collections of about the same size as those described above and representing limited groups, for example: Economic insects, mimicy, bees and their allies, flies, butterflies and moths, etc. These special collections will be prepared only in response to several requests. Other phases of insect life may be illustrated if there be a demand for it.—*Newspaper.*

NOTE ON LARVA OF *Schizura concinna*.—On a recent walk I captured a colony of full grown larvæ of *Schizura concinna* feeding on blackberry. While transferring them to a breeding cage I noticed an odor of sulphuric acid, which I was much puzzled to account for until it occurred to me to smell one of the larvæ. I thus discovered that the odor came from a transparent watery fluid that exuded from the caterpillar's skin wherever it was touched. When held close to the nose the odor was so strong as to produce an involuntary checking of the breath familiar to any one who has inhaled ammonia fumes. The fluid did not tarnish silver when rubbed upon it, but showed quite a strong acid reaction upon litmus paper. This larva furnishes a beautiful example of the combination of a strong defensive equipment with warning coloring.—F. H. FOSTER, Claremont, N. H.

IN 1898 Mr. A. G. Weeks Jr., of Boston, Mass., sent Wm. J. Gerhard to the districts near La Paz, Bolivia, for the purpose of collecting diurnal Lepidoptera. Sixty weeks were spent in this work and many new and rare species were discovered. An account of the journey in given in a publication entitled "Illustrations of Hitherto Unfigured Lepidoptera," by A. G. Weeks Jr. The entire expense of the journey and subsequent publications was borne by Mr. Weeks, who has also supplied the beautiful colored plates of new Bolivian Lepidoptera which have appeared in the NEWS. This liberal gentleman is doing good work for the advancement of science, and we trust that he may have many followers.

Entomological Literature.

COMPILED BY H. L. VIERECK AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

3. American Naturalist, Cambridge.—**4.** The Canadian Entomologist, London, Ont.—**5.** Psyche, Cambridge.—**7.** United States Department of Agriculture, Washington.—**9.** The Entomologist, London,—**14.** Proceedings of the Zoological Society of London.—**15.** Biologia Centrali-Americana, London.—**24.** Berliner Entomologische Zeitschrift, Berlin.—**38.** Wiener Entomologische Zeitung, Vienna.—**46.** Tijdschrift voor Entomologie, The Hague.—**50.** Proceedings of the U. S. National Museum, Washington.—**84.** Insekten Börse, Leipsic.—**116.** Biological Bulletin, Boston.

THE GENERAL SUBJECT.—Aigner-Abafi, L. v.—Ueber Mimikry. Allgemeine Zeitschrift für Entomologie, Neudamm, vii, No. 18, pp. 368-372.—**Banks, N.** An Index to Bulletins Nos. 1-30 (New Series) (1896-1901) of the Division of Entomology, **7,** Bull. No. 36 (n. s.).—**Kellogg, V. L.** The Development and Homologies of the Mouth Parts of Insects, **3,** xxxvi, pp 683-706.—**Verhoeff, C.** Klassen und Ordnungen der Arthopoda. Thier-Reich, 5 Bd, II Abth, Leipzig, 1902.—**Wasmann, E.** Species novæ Insectorum Termitophilorum ex America Meridionali, **46,** 45 Deel, Jhg., 1902, p. 95.

ECONOMIC ENTOMOLOGY.—Britton, W. E. The Apple-tree Tent-caterpillar. Bulletin 139, Connecticut Agricultural Experiment Station, New Haven.—**Felt, E. P.** Seventeenth Report of the State Entomologist on Injurious and other Insects of the State of New York. Bulletin 53, New York State Museum, Albany. Elm Leaf Beetle in New York State. Bulletin 57, New York State Museum, Albany.—**Hunter, W. D.** The Present Status of the Mexican Cotton-boll Weevil in the United States. Year-book of the U. S. Department of Agriculture, 1901.—**Simpson, C. B.** Report on Codling-moth Investigations in the Northwest during 1901, **7,** Bulletin 35 (n. ser.).—**Stedman, J. M.** The more Important Insects Injurious to Wheat in Missouri. Thirty fourth Annual Report of the Missouri State Board of Agriculture, pp. 55-141.

ARACHNIDA.—Banks, N. A List of Spiders collected in Arizona by Messrs. Schwarz and Baker during the Summer of 1901,* **50,** xxv, pp. 211-221.—**Cambridge, F. P.** On the Spiders of the Genus *Latrodectus* Walckenaer, **14,** 1902, vol. I, pt. II, pp. 247-261, pls. xxvi and xxvii. Araneidea (Central America and Mexico), vol. I, pp. 305-308, and vol. II, pp. 361-376, pls. xxxiv, xxxv, **15,** pt. clxxii. **Pocock, R. I.** Arachnida Scorpiones (Central America and Mexico), pp. 1-16, pls. i, ii, **15,** clxxii.

MALLOPHAGA.—**Kellogg, V. L.** and **Kuwana, S. I.** Mallophaga form Birds. Papers from the Hopkins Stanford Galapagos Expedition, 1899, x. Entomological Results (8). P. Wash. Acad., iv, pp. 457–499.

ORTHOPTERA.—**Walker, E. M.** A Preliminary List of Acridiidæ of Ontario, **4,** xxxiv, pp. 251–258.

HEMIPTERA.—**Ball, E. D.** New Genera and Species of N. A. Fulgoridæ,* **4,** xxxiv, pp. 259–266.—**Cockerell, T. D. A.** A Contribution to the Classification of Coccidæ (concl.), **9,** xxxv, pp. 257–260.—**Fernald, Mrs. C. H.** On the Type of the Genus Coccus, **4,** xxxiv, pp. 232–233.—**Hansen, H. J.** On the Morphology and Classification of the Auchenorrhynchous Homoptera, iiv, **9,** xxv, pp. 260-263.—**King, G. B.** The Association of Coccidæ, **5,** ix, pp, 401–404.—**Kirkaldy, G. W.** and **Edwards, S.** Anmerkungen über bemerkenswerte Pyrrhocorinen (Rynchota), **38,** xxi, heft vii, pp. 161–172. —**Wasmann, E.** See General Subject.

ODONATA.—**Needham, J. G.** Three New Gomphines,* **4,** xxxiv, pp. 275–278.

ISOPTERA.—**Silvestri, F.** Ergebnisse biologischer Studien an Südamerikanischen Termiten. Allgemeine Zeitschrift für Entomologie, Neudamm, vii, No. 17, pp. 326–335.

LEPIDOPTERA.—**Dyar, H. G.** Life Histories of North American Geometridæ, **5,** ix, pp. 407–408. Descriptions of the Larvæ of some moths from Colorado, **50,** xxv, pp. 369–412.—**Eliot, I. M.** and **Soule, C. G.** Caterpillars and their Moths. The Century Co., New York.—**Grote, A. R.** Die Platypterygiden, xix, p. 314.—**Lyman, H. H.** Hydrœcia Nelita Strecker, **4,** xxxiv, p. 274.—**Rothke, Max.**—[On Vanessa Antiopa, L.] **84,** xix, pp. 314–315.—**Scudder, S. H.** Group Characteristics of Some North American Butterflies, iv, **5,** ix, pp. 405–407.—**Smith, J. B.** Contributions toward a Monograph of the Lepidopterous Family Noctuidæ of Boreal North America. A Revision of the Moths referred to the Genus *Leucania*, with Descriptions of New Species,* **50,** xxv, pp. 159–209.—**Speiser, P.** Bemerkungen über die "Erstarrungswärme" der Schmetterlingspuppen, **84,** xix, pp. 306–307.—**Stichel, H.** Aufteilung der Gattung *Opsiphanes* Westw., Beschreibung neuer Brassoliden und synonymische Notizen, **24,** xlvi, heft, iv, pp. 487–524.—**Therese, Prinzessin von Bayern.** Von Ihrer Königl. Hoheit der Prinzessin Therese von Bayern auf einer Reise in Südamerika gesammelte Insekten, iii, Lepidopteren, **24,** xlvi, heft, ii, iii, 235–307.

DIPTERA.—**Coquillett, D. W.** New Diptera from North America,* **50,** xxv, pp. 83–126.—**Hendel, F.** Strongylopthalmus, eine neue Gattung der Psiliden (Dipt.), **38,** xxxi, heft, vii, pp. 179–181.—**Johnson, C. W.** New North American Diptera,* **4,** xxxiv, pp. 240–242.—**Osten Sacken, C. R.** On a Distinctive Character of the Imagos of the Suborders of Diptera: *Orthorrhapha brachycera* and *Cyclorrhapha athericera*, introduced by Latreille (1825) but overlooked by Later Authors. The Entomologists' Monthly Magazine, London (2), xiii, pp. 228–229.—**Snodgrass, R. E.** The Inverted Hypopygium of *Dasyllis* and *Lophrea*, **5,** ix, pp. 399–400, pl. 5.

COLEOPTERA.—Champion, G. C. Coleoptera (Central America and Mexico). Vol. iv, pt. 4, pp. 1-32, pls. I, II, **15,** clxxii.—**Fyles, T. W.** A Tortoise Beetle new to Quebec, 4, xxxiv, pp. 273-274.—**Hunter, W. D.** The Present Status of the Mexican Cotton-boll Weevil in the United States. Yearbook of the U. S. Department of Agriculture, 1901.—**Jacoby, M.** Descriptions of New Species of Coleoptera of the Family Halticidæ from South and Central America, **14,** 1902, vol. i, pt. 2, pp. 171-204, pl. xx —**Lewis, G.** On New Species of Histeridæ.* Annals and Magazine of Natural History, London, x, pp. 223-239.—**Pic, M.** Etude Dichotomique sur les Trichodesona Lec. du Brésil. Annales de la Societé Entomologique de Belgique, xlvi, viii, pp. 408-409.—**Reitter, E.** Neuer Beitrag zur Systematischen Gruppeneintheilung der Melolonthidæ, **38,** xxi, heft vii pp. 173-176.—**Schulz, W. A.** Biologische, Zoogeographische und synonymische Notizen auf der Käferfauna des unteren Amazonenstroms, **24,** xlvi, heft ii and iii, pp. 321-338.—**Sharp, D.** Coleoptera (Central America and Mexico). Vol. ii, pt. 1, pp. 673-688, **15,** pt. clxxi.—**Therese, Prinzessin von Bayern.** Von Ihrer Königl. Hoheit der Prinzessin von Bayern auf einer Reise in Südamerika, gesammelte Insekten, iv, Coleoptera. **24,** xlvi, heft 4, pp. 463-486.—**Uyttenboogaart, D. L.** List of Beetles collected in the months of Aug. and Sept., 1900, in Surinam (Dutch Guyana), and on the island of Barbadoes, **46,** 45 Deel, Jhg., 1902, p. 112.—**Voigts, H.** Zur Synonymie der Meloiden Gattung *Zonabiris,* **38,** heft 7, pp. 177-178.—**Wassmann, E.** See General Subject.

HYMENOPTERA.—Ashmead, W. H. Classification of the Fossorial, Predaceous and Parasitic Wasps.* Papers No. 8 and 9, **4,** xxxiv, pp. 219-231 and 268-273 —**Cockerell, T. D. A.** A new Bee of the genus Bombomelecta,* **4,** xxxiv, p. 267.—**Crawford, J. C., Jr.** Notes and Descriptions of Bees,* **4,** xxxiv, pp. 234-240.—**Ducke, A.** Beobachtungen über Blütenbesuch, Erscheinungszeit, etc., der bei Para vorkommenden Bienen. Allgemeine Zeitschrift für Entomologie, Neudamm, vii, nr. 18, pp. 321-326, 360-368.—**Emery, C.** An Analytical Key to the genera of the family Formicidæ, for the identification of the workers, **3,** xxxvi, pp. 707-725.—**Perez, J.** Contribution a l'étude des Xylocopes.* Actes de la Société Linnéene de Bordeaux, lvi, pp. 1-128.—**Robertson, C.** Synopsis of Halictinæ,* **4,** xxxiv, pp. 243-250.—**Wasmann, E.** Neues über die zusammengesetzten Nester und gemischten Kolonien der Ameisen. Allgemeine Zeitschrift für Entomologie, Neudamm, vii, No. 17, pp. 340-345.—**Wheeler, W. M.** An American Cerapachys, with Remarks on the Affinities of the Cerapachyinæ, **116,** iii, No. 5, pp. 181-191.

Caterpillars and Their Moths, with Illustrations from Photographs of Living Caterpillars and Spread Moths. By Ida Mitchell Eliot and Caroline Gray Soule. The Century Co., New York. Price, $2.00 and 18 cents postage. This work is an exact record of the authors' experiences, aided by reference to the standard works on the subjects. Its great value

lies in the fact that it gives the life history of forty-species within its covers, and illustrates them by half tones. The literature of the moths is so scattered in numerous publications that the beginner is usually at a loss to know where to look for information, and this work will therefore be indispensible to those for whom it is intended. The authors have had a wide experience in rearing moths, and we would suggest that they do not stop here, but give us an additional forty-three or more species. The illustrations, as a whole, are quite satisfactory. From the standpoint of artistic effect and entomological technic the illustrations would have looked better, if the specimens had been symmetrically spread. In some cases they hardly look like bred specimens. We can heartily recommend the work as being very useful and badly needed.

OBITUARY OF AN ENTOMOLOGIST.

O gentle reader, drop a tear
For one beneath this stone;
In life he named 7000 bugs,
To science, all unknown.

But now, alack! he is condemned,
In a place I dare not name;
With his *own books*, through endless years,
To identify the same.—A. VICTIM

Doings of Societies.

The regular monthly meeting of the Chicago Entomological Society was held in the John Crerar Library, on Thursday evening, September 18, 1902.

Eight members were present. President Longley in the chair.

In regard to the selection of a topic for future discussion, Mr. Adams moved that a committee, composed of Messrs. Healy and Tower, with Mr. Longley as chairman, be appointed to select subjects. Motion carried.

Prof. Tower promised to take the initiative in the talk at the October meeting. Subject to be announced later by the secretary.

For the November meeting, Mr. Healy agreed to lead in a discussion on *Satyrus alope* in its various forms, as illustrating climatic influence on races.

Mr. Longley opened the evening discussion on Genus *Homoptera*, and exhibited an interesting series of specimens. The exhibit showed the remarkable variation in the genus, and also the gradations from one species into another. Specimens were also shown by Mr. Healy.

Adjourned at 9.55.

JOHN COMSTOCK, *Secretary*.

The September meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth street, Philadelphia. Ten persons were present.

The Field Day Committee reported a successful meeting at Anglesea, N. J., September 1st.

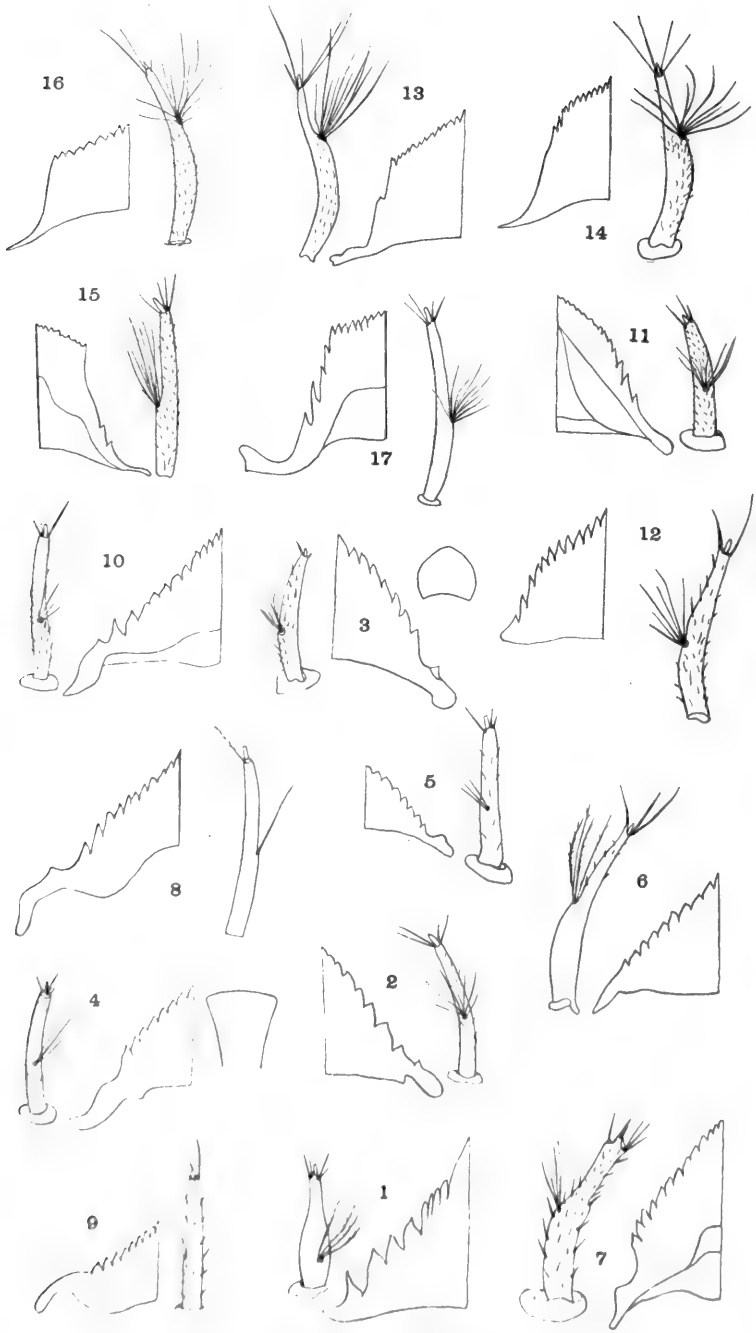
Mr. H. Wenzel stated that the supposed new Cerambycid mentioned at the last meeting, had proven to be *Pimatodes ater*. The specimens taken at Anglesea, N. J., were found on oak. He also exhibited part of the Carabidæ taken, by himself and son, at Balsam in the mountains of North Carolina, at altitudes from 3,500 to 7,000 feet, during the past summer. About fifty species of this family were taken, including many rare ones.

Mr. Daecke reported that he had formerly found certain Hymenoptera plentiful about a scale insect on *Liriodendron*, but this year he had failed to find any specimens about the scales. At Lucastown, N. J., he had taken 8 specimens of *Celithemis fasciata*, a species new to the State.

WILLIAM J. FOX, *Secretary*.

OBITUARY.

It is with sorrow and regret that we announce the death of R. J. Weith, of Elkhart, Indiana. Mr. Weith was born in Prussia, September 15, 1847. At the age of twenty-five he came to America. All his spare time was spent in entomological study. The deceased was best known from his work in Hymenoptera and Odonata, in which branches he made some interesting discoveries and captures. He will be greatly missed by a large circle of friends and correspondents.



MOSQUITO LARVÆ—(SMITH.)

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIII. DECEMBER, 1902. NO. 10.

CONTENTS:

Characters of Some Mosquito Larvae.

BY JOHN B. SMITH.

During the season of 1902 systematic collections of mosquitoes were made in New Jersey and larvæ were bred from pools and other bodies of water in all parts of the State. Three species of *Anopheles* were bred by Dr. H. P. Johnson at Newark; *crucians* occurring once only among the adults. Its larva probably resembles that of other species since it was not recognized among them. *Psorophora ciliata*, *Aedes fuscus*, *A. smithii* and *Urotænia sapphirina* were raised in the Laboratory and recognized in the field.

Stegomyia signifera Coq. was new to the State fauna and its larva was separated from those of *pungens* among which it was found. It occurred in somewhat foul water and is recognizable by its robust build and somewhat sickly white thorax contrasting with the darker abdominal rings. The antennæ are different in form from the species of either *Culex* or *Stegomyia*, and the anal siphon has no rows of spines or teeth. If larval characters count, it forms a distinct generic type.

Sixteen species of *Culex* were recognized in the larval stage. One was not bred to maturity and one was brought in from another State (Maine).

There is no intention of giving here any descriptions of larvæ or any attempt at a classification : it is simply a brief statement of the species found, the general character of the places where found and those points in general appearance that distinguish them. The figures on Plate XV give the form of the antennæ and of the corneous part of the labium ; the drawings being free-hand, without close regard to scale. The determinations of the adults were made by Mr. Coquillett, but are subject to revision in some cases.

Early in spring the larva of *C. canadensis* was found in woodland pools and springs as described on page 267 of this volume. Associated with it was *C. cantans* which resembles it so closely that the two are not easily recognized as distinct. *Cantans* is a somewhat larger and more robust larva, with shorter, stouter antennæ. The corneous labial structure is almost the same. Both larvæ have short breathing tubes ; but that of *cantans* is shorter and approaches that of *sollicitans* with which it is also found associated in brackish pools on salt meadows. The latter has still shorter, more slender antennæ and has the labrum oblong, squarely terminated in front, while *cantans* has it rounded and, as a whole, somewhat heart-shaped. These three species are closely related.

C. tæniorhynchus also occurs with *sollicitans* and has exactly the same habits. I have bred the two species from eggs in the same piece of sod and did not realize until adults emerged, that two kinds of larvæ were in the dish. The only differences I could find are the somewhat longer antennæ and the somewhat shorter labium. The species does equally well in fresh or salt water.

Another early larva is what I take to be that of *perturbans* with a short anal siphon and very prominent antennæ. The latter are white at base, black beyond the constriction and with a very prominent tuft of feathered hair. The structure of the labium indicates what Dr. Dyar terms the ring-legged group, and *perturbans* is the only member of that group taken where this larva occurred that I have not bred. The larva is a large one.

C. confinis occurs in meadow pools, road puddles and rather

clean water generally. It is an active, robust, dark larva, with short, very robust and very spiny antennæ.

The larvæ of *C. triseriatus* were found in an iron pail half filled with rain water. They are at once recognizable by the intensely black head and the short black anal tube. The body is slender and white and the motions are slower, less jerky than those of the other species. The resemblance is to the larva of *Stegomyia fasciata*. The labium is quite distinct in form and the antennæ are very long, very slender and almost bare.

C. atropalpus is closely allied and only a little smaller. There is an obvious difference in the labium and the antennæ are shorter, stouter and somewhat hairy. The larvæ were taken in pools in the rocks on the coast of Maine by my little boy and carried to me at New Brunswick. Mr. Coquillett writes me that the species is found near Washington, and its occurrence in New Jersey is therefore probable.

Three species so closely resembling each other in the adult stage that all were at first supposed to be *sylvestris* were bred from very obviously different larvæ.

From Delair, N. J., I received large numbers of a rather stout, white larva with a short brown anal siphon, found everywhere in pools and ponds, and I bred out a large number of adults. The antennæ were rather slender, only a little hairy, and the labium was in general accord with that of the *cantans* and its allies.

From the vicinity of Newark Mr. E. L. Dickerson, my assistant, brought in a stout active larva with a short anal siphon and a very short, stout, hairy antenna. The labium is distinctly different from the usual ring-legged type, but the adults bred from this batch were supposed to be *sylvestris* at first sight. They proved different on further study and the species has not yet been determined.

From the salt meadows near Elizabeth, Mr. H. H. Brehme, who explored this territory for me, sent large quantities of larvæ which at first appeared to be all *sollicitans*. When adults began to issue two species were noted and it was found that two forms of larvæ could be recognized :—one in which the head was immaculate, and another in which it was maculate—the most per-

sistent mark being a round, blackish spot near the vertex. The labium was much like the previous species, entirely unlike that of *sollicitans*, but the antennæ were longer, different in form, and spiny rather than hairy. The adults seemed to be also *sylvestris*. Mr. Coquillett has not yet had an opportunity to study these forms comparatively.*

All the other species bred by me agree generally in having the labium somewhat oblong, the centre a little produced and the line to the side more or less oblique.

C. territans differs from all the others in the enormously long, slender anal siphon and the broad head with prominent antennæ extending beyond the sides. These antennæ are black at tip and have a tuft of long hair at the set-off. The larvæ occur almost everywhere in running or stagnant waters, fresh or brackish; but I have not found them in really foul nor absolutely salt water.

C. pungens is common everywhere in all kinds of water, no matter how foul. I have not found it in salt or even brackish water; but the addition of sea salt to water in which it was breeding, did not prevent the completion of its transformations. It is a white larva with a moderately long anal siphon a little enlarged at the middle. The antenna is quite characteristic; stout, a little curved, with a distinct set-off beyond the middle.

A similar larva is quite generally found in ponds overgrown or otherwise sheltered, and in quiet or even stagnant waters; but not in salty or foul water. The adult resembles *pungens* so closely that I cannot distinguish between them and Mr. Coquillett has called this *pipiens* for me. The antenna in the larva is shorter than in *pungens*, not curved, not nearly so stout, and the small set off is below the middle. The labium is altogether different in shape, as a comparison of the figures will show.†

On the salt meadows near Elizabeth Mr. Brehme found with

* Since the above was written Mr. Coquillett has compared the species and finds no differences from *sylvestris;* but the larva is certainly not like the Delair species. I think we have close allies or a dimorphic larva.

† This species is *restuans* according to Coquillett who has pointed out to me distinctive characters since the above was written.

sollicitans during early September a larva that looked like that of *pungens* except that it had a very much longer, straight anal siphon and decidedly blackish antennæ. It looked like a cross between *territans* and *pungens*, and so its structure proclaimed it. *Territans* has a larger head, a longer more slender siphon and is smaller; otherwise the differences are slight. The adult resembled *pungens* and specimens previously taken on the meadow had been accepted as such; but Mr. Coquillett decided that it was *nigritulus*.

During August I collected at Lahaway, with numbers of *territans* and *restuans*, a smaller larva with anal gills fully twice as long as usual. They were separated from the others and a number of adults were bred which were also named *restuans*. They are smaller than *pungens* and resemble *territans* except that they seem not quite so dark. The antenna is slender, a little curved and with the small set off just below the middle. The labial plate is quite characteristic and has the lateral as well as the front edge serrated.*

Of the species known to me to occur in New Jersey I lack the larva of *Conchyliastis musicus* only, and am doubtful of that of *Culex perturbans*.

EXPLANATION OF PLATE.

The figures represent the larval antenna and half the corneous plate of the labium in each instance: in 3 and 4 figures of the labrum are added.

1. *Stegomyia signifera*.
2. *Culex canadensis*.
3. *cantans*.
4. *sollicitans*.
5. *tæniorhynchus*.
6. *? perturbans*.
7. *confinis*.
8. *tri-seriatus*.
9. *atropalpus*.
10. *Culex sylvestris* (Delair).
11. Sp.? Newark.
12. Sp.? Salt marsh.
13. *territans*.
14. *pungens*.
15. *restuans*.
16. *nigritulus*.
17. sp.?

* I cannot agree with Mr. Coquillett that the insects bred from this larva are *restuans* and have kept the examples separated without name.

EUHAGENIA NEBRASKÆ, Hy. Edw.—On October 5 I collected this pretty red-winged Sesiid at Las Vegas, N. M., thus considerably extending its known range.—T. D. A. COCKERELL.

Colletes crucis.

BY T. D. A. COCKERELL.

Colletes crucis Cockerell, n. sp.—♂. Length about 7 mm.; black, densely covered with yellowish-white hair; head broad, orbits strongly converging below, face entirely covered with hair, mandibles with the apical half ferruginous; malar space very short, fully twice as broad as long; bifurcation of tongue very deep; flagellum not ferruginous beneath, nor obviously crenulated; thorax densely covered with erect hair; mesothorax with strong large punctures, except the middle, which is impunctate; base of metathorax with a few irregular strong longitudinal plications, terminated by a strong rim; truncation shining; tegulæ ferruginous, hairy; wings long, hyaline and iridescent, with ferruginous stigma and nervures; first recurrent nervure joining the very broad second submarginal cell at its middle; legs hairy; knees, apices of first four tibiæ, both ends of hind tibiæ, and all the tarsi, ferruginous; abdomen hairy, the bands consisting of very dense long hairs, covering most of the surface; disc of first segment shining, scarcely punctured; the depressed apical portion of the segment ferruginous, but covered by hair; venter with continuous hair-bands.

Hab.—Las Cruces, New Mexico, Aug. 27, on flowers of *Solidago canadensis*, collected by Prof. C. H. T. Townsend. On the same flowers at the same time, Townsend collected a male *Colletes annæ* Ckll. In my table in Bull Denison Lab., xi, *C. Crucis* runs to *C. gypsicolens*, but it is a very much smaller species than the latter, with yellower pubescence and differently colored legs; the abdominal bands in *gypsicolens* are entirely white, in *crucis* they are obviously yellowish. From *C. annæ*, the species here described differs by its much less yellow pubescence, smaller size and narrower abdomen; yet they are closely allied.

A New Species of Melitaea.

BY HENRY SKINNER.

M. damœtas ♂.—*Upperside.* Primaries. The ground color of the wing is black, crossed by four broken bands of fulvous spots, parallel to the outer margin. The first row, next to the margin, consists of about nine very small and narrow spots; the next row consists of seven spots, the upper three being round and the lower four lunate. In the next row the spots are six in number and somewhat larger. In the next and last row the number of spots is six and they are still larger; they are not in

the same line and form two curves; these two curves are rather heavily edged with black on the inner side. In the cell are three roughly quadrate spots edged with black, the inner one partly divided by a black line parallel to the costa. The secondaries are marked in the same general way by four lines of spots; the first consisting of seven very narrow; the next of three somewhat lunate; the next of six, the lower three geminate; the next of seven, the first very small and geminate, the fourth spot with a black dot on it, the next two spots small and the last a mere point. *The basal half is black* with *a fulvous dot in the cell. Underside.* Primaries. There is a narrow fulvous line next to the exterior margin, bordered on both sides by narrow black lines; next to this a row of lunate spots edged with black, the five upper ones washed with yellow. On the outer third of the costa is an irregular black mark extending into the wing about one-eighth of an inch. Just beyond the middle, extending into the wing from the costa, is a black curved line, made up of four spots. The bulk of the remainder of the wing is fulvous, divided by the black neuration. There are also a few irregular small black markings and lines. Secondaries. These are crossed by a series of spotted lines, parallel to the exterior margin as follows: The first of seven, narrow, fulvous spots; the second light yellow and larger of seven; the third of seven with the first two light yellow and the remainder fulvous; the fourth row, of eight spots, all yellow; the first four large and remainder small; the fifth row of seven, all yellow; there is a yellow spot in the cell and three near the base. All these spots are edged with black. The fringes of all wings, above and below, are alternately black and white. Expanse of wings 41 mm.

Described from four specimens from Colorado as follows: One from South Park, viii. 15.02 John and Hurd Comstock; two from Prof. A. J. Snyder, Williams River Range, viii. 9.02 and Hall Valley, vii. 21.02; one from E. J. Oslar.

This species belongs to the group containing *harrisi*, *palla*, *whitneyi*, etc.

Notes on the Orthopteran genus Leprus.

By T. D. A. Cockerell.

The common *Leprus* of New Mexico (Organ Mountains, Raton, etc.) is a fine species with blue wings. Several years ago, finding that it did not seem to agree with the description and figure of *Leprus wheeleri* (Thomas), I proposed to call it *L. cyaneus*. This name, however, was not published, because Messrs. Scudder and Bruner were both of the opinion that the insect was the genuine *L. wheeleri*. The peculiar color of the

type of *wheeleri* was easily accounted for by the fact that it had been in alcohol.

Last August, however, I obtained both sexes of a species of *Leprus* at the electric lights at Roswell, New Mexico. I was quite sure this was the ordinary form, until I looked at the wings, and found that they were not blue! The whole area inside of the black band is a very pale primrose yellow, except that the extreme base of the wing is blue. Here, then, was an insect just like Thomas' figure of *wheeleri*, and differing only from the blue-winged *wheeleri* in color. The hind femora and tibiæ of the female were marked with blue exactly as in the blue-winged species, but the blue on the hind tibiæ of the male was replaced by whitish on the outer side.

How is it possible to decide whether the type of *wheeleri* was in fact the Roswell species, or *L. cyaneus* discolored by alcohol? I find only one character available beside those just mentioned, and that is the banding of the tegmina. Notwithstanding much variation, I find that *L. cyaneus* always has the tegmina more dusky; with the light band opposite the black band of the hind wings sometimes broad, sometimes linear, but always white or nearly so, conspicuously lighter than the rest of the tegmen. The apical portion of the tegmen, beyond this band, is either plain or feebly marked.

The Roswell species has the tegmina more variegated, with prominent contrasts between the light and dark shades, the former being reddish-grey.

It seems to me, therefore, that the Roswell species is the real *Leprus wheeleri*, as the tegmina accord much better with the original figure than do those of *L. cyaneus*. I propose, therefore, to regard the latter as a valid new species, taking Raton, N. M., as the type locality. The new interpretation of *L. wheeleri* brings it close to *L. elephas* (Sauss.), but I believe they are distinct. In the length of the tegmina, the Raton *L. cyaneus* vary from 30 to 33 mm. in the ♀, and 25-30 in the male. A large ♀ *L. cyaneus* captured at Mesilla Park, N. M., September, by Prof. E. O. Wooton, has the tegmina 40 mm. A ♂ *cyaneus* caught by José Mendoza at Dripping Spring, Organ Mountains, has the tegmina 30 mm. An unusually reddish

male from La Cueva, Organ Mountains, caught by Carl Townsend, has the tegmina 31 mm.; this specimen, though very red about the thorax and femora, keeps the white color of the conspicuous band on the tegmina.

L. wheeleri from Roswell has the tegmina 40 mm. in ♀, 33 in ♂. The antennæ of the ♂ seem rather longer than in that sex of *cyaneus*.

Leprus glaucipennis, Scudder, I met with last year in August at La Jolla, San Diego County, California. It is considerably smaller than *L. cyaneus*, and the blue of the wings has a slight greenish tint.

A New Species of Dyseidopus Kriechbaumer (Pimplinae.)

By J. Chester Bradley, Philadelphia.

Dyseidopus is a genus of the tribe Xoridini closely related to *Echthrus*, from which it is distinguished by the venation of the wings. In *Echthrus* the transverse medial nervure in the hind wings is broken above the middle, and the disco-cubital nervure of the front wings is broken by the stump of a vein. In *Dyseidopus* the transverse medial nervure is broken below the middle, and the disco-cubital nervure is not broken by the stump of a vein. *Dyseidopus* was founded by Kriechbaumer (Ann. k. k. nath. Hofm. v. p. 489, 1890,) on a unique female from Brazil, and this is the only record of the genus we have hitherto had. It is with interest, therefore, that I record the occurrence of a new form from a place so distant from Brazil as Vancouver, thereby adding not only a species but a genus to our faunal list.

Dyseidopus vancouverensis sp. nov.—♂ Black; legs entirely rufo-testaceous; face albo-maculate; wings hyaline. Length 14.5 mm.

Head transverse; temples narrow; black except for a broad white line on each side of the face, starting opposite the insertion of the antennæ, and covering the basal half of mandibles; clypeus also white; occiput and cheeks shiny, very sparsely punctate; antennæ polyarticulate, black, scape testaceous beneath. Thorax black, shiny, very sparsely punctate dorsally; more closely punctate laterally, and quite coarsely roughened posteriorly on the metathorax, which is carinate. Wings hyaline; trans-

verse medial nervure of hind wing broken far below the middle, discocubital nervure of front wings not broken by any considerable stump of a vein; areolet large and pentagonal. Legs, including coxæ, entirely rufotestaceous, front tibiæ slightly contracted at base. Abdomen entirely black.

Hab.—Vancouver, British Columbia, May 9, 1902. The type is in the collection of The Academy of Natural Sciences of Philadelphia. It was collected by R. V. Harvey.

Daddy-long-legs from Mt. Katahdin, Maine.

By Nathan Banks.

During the past summer Prof. H. W. Britcher, of Orono, Maine, visited Mt. Katahdin to collect spiders and insects. He obtained five species of daddy-long-legs. Since no species have been recorded from the State, and as two of his captures are rare species, his catch is worthy of record. Mt. Katahdin, now famous for its butterfly, is evidently a very rich collecting ground. It shows close relationship with Mt. Washington, three of the forms being common to both.

In the genus *Liobunum* many species vary in length of legs according, as Prof. Weed has shown, to faunal limits. Now the specimens of *Liobunum longipes* from Katahdin have very short legs, but agree exactly with Mt. Washington specimens. Therefore, from this point of view Mt. Katahdin and Mt. Washington are in the same faunal region, even to minute limits. Specimens of *L. longipes* from Canada and from the Thousand Islands, N. Y., have much longer legs.

Caddo agilis Banks.

From moss, August 28, 2800 feet. This species was previously known from Long Island, N. Y., and from Washington, D. C.

Phlegmacera cavicolens Packard.

Chimney Lake, August 20, 3000 feet. This remarkable form was described from a Kentucky cave, but has since been taken in central New York and in New Hampshire.

Oligolophus pictus Wood.

Chimney Lake, August 20, 3000 feet; under moss, August

28, 2800 feet. This species is not uncommon in the Northeastern States.

Nitopus montanus Banks.

Chimney Lake, August 20, 3000 feet; beneath birch bark, August 23, 3000 feet; on the summit, 19th August, 5215 feet. This species was previously known only from Mt. Washington, N. Hamp.; these specimens vary much in the depth of markings.

Liobunum longipes Weed.

Beneath birch bark, 23d August, 3000 feet. Found in the Northeastern States, the northern specimens have quite short legs. Specimens from Mt. Washington agree exactly with the Katahdin specimens.

Records of New Jersey and Pennsylvania Orthoptera.

By James A. G. Rehn.

The following records are published mainly as contributions to a faunistic study of the Orthoptera of the country adjacent to Philadelphia. Much of the data relates to the pine barrens of New Jersey, which have been rather closely examined on a number of trips.

BLATTIDÆ.

Nyctibora sericea Burmeister.

Delaware River Wharves, Philadelphia, Penna. C. Few Seiss.

This species has once been recorded from New England.

ACRIDIDÆ.

Acrydium arenosum (Burmeister).
Tettix arenosus Auct.

Glenside, Montgomery Co., Pa. May 5, 1901. H. L. Viereck.

Paratettix cucullatus (Burmeister).

Iona, Gloucester Co., New Jersey. May 26, 1902. E. Daecke.

Tettigidea parvipennis (Harris).

Lucaston, Camden Co., New Jersey. April 14, 1902. E. Daecke. Clementon, Camden Co., New Jersey. April 21, 1902. E. Daecke. May 14, 1901. J. A. G. Rehn. Riverton, Burlington Co., New Jersey. May 3, 1901. J. A. G. Rehn. Manumuskin, Cumberland Co., New Jersey. April 28, 1902. E. Daecke. Castle Rock, Delaware Co., Pa. March 25, 1902. E. Daecke. Philadelphia, Pa. Sept. 24, 1902. J. A. G. Rehn.

The last record was during a time of migration, great numbers of the species being noted in various sections of the city.

Syrbula admirabilis (Uhler).

Manumuskin, Cumberland Co., N. J., Sept. 15, 1902. E. Daecke. Taunton, Burlington Co., N. J., Sept. 6, 1902. W. Stone.

Orphulella olivacea (Morse).

Atlantic City, Atlantic Co., N. J. Sept. 11, 1902. J. A. G. Rehn.

Orphulella pelidna (Burmeister).

Medford, Burlington Co., N. J. Sept. 5 and 7, 1902. W. Stone. Taunton, Burlington Co., N. J. Sept. 6, 1902. W. Stone. Riverton, Burlington Co., N. J. Sept. 8, 1902. H. L. Viereck. Bear Swamp, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn.

This bog loving species is exceedingly common on the cranberry bogs, and has been taken outside of the pine barren section at Riverton and Westville.

Orphulella speciosa (Scudder).

Ricketts, Wyoming Co., Pa. Sept. 1, 1900. S. Brown. Ganoga Lake, Sullivan Co., Pa. Sept. 3, 1900. S. Brown.

These appear to be the first Pennsylvania records for this form.

Chloealtis conspersa (Harris).

Between Atsion and Quaker Bridge, Burlington Co., N. J.

Sept. 2, 1901. J. A. G. Rehn. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Pennsylvania. S. F. Aaron.

This boreal species occurring in the isolated bogs of the pine barren region adds further proof to the conclusion that these "islands" have a greater preponderance of boreal than austral types inhabiting them. The temperature of the bogs is considerably lower than that of the surrounding pine land, thus preserving an Alleghanian element which is testified to by the plants and mammals.

Stenobothrus curtipennis (Harris).

Ricketts, Wyoming Co., Pa. Sept. 1, 1900. S. Brown. Bellasylva, Wyoming Co., Pa. Aug., 1900. S. Brown. Ganoga Lake, Sullivan Co., Pa. Sept. 2, 1900. S. Brown.

Arphia sulphurea (Fabricius).

Castle Rock, Delaware Co., Pa. July 18 and 24, 1902. E. Daecke. Manumuskin, Cumberland Co., N. J. April 28, 1902. E. Daecke. Clementon, Camden Co., N. J. May 14, 1901. J. A. G. Rehn.

Hippiscus phoenicopterus (Germar).

Iona, Gloucester Co., N. J. June 2, 1902. E. Daecke.

Spharagemon collare wyomingianum (Thomas).

Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn.

Scirtetica marmorata (Harris).

Iona, Gloucester Co., N. J. July 13, 1902. E. Daecke. DaCosta, Atlantic Co., N. J. July 20, 1902. E. Daecke. Atsion, Burlington Co., N. J. Sept. 2, 1901. J. A. G. Rehn. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Between Harris and White Horse, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn. Taunton, Burlington Co., N. J. Sept. 7, 1902. W. Stone. Medford, Burlington Co., N. J. Sept. 5, 1902. W. Stone.

The western limit of this species in New Jersey is seen from

the latter three of the above records to be equivalent to the western edge of the pine barrens.

Trimerotropis citrina Scudder.

Lehigh Gap, Lehigh Co., Pa. July 20, 1902. J. A. G. Rehn.

This species has been recorded east of the Mississippi but once before, that record being from Maryland (McNeill, Proc. U. S. Nat. Mus., xxiii, p. 427). The collection of the Academy also contains one specimen from Roan Station, Tennessee, taken September 3, 1901, by Mr. Lancaster Thomas.

In describing this species McNeill (*vide supra*) says "process of the metazone decidedly obtuse angulate, with the margins straight and the tip rounded."

The specimens above mentioned agree in every particular except this one, the posterior process of the metazone being rectangulate, with the tip angulate and not rounded.

Schistocerca damnifica (Saussure).

Manumuskin, Cumberland Co., N. J. April 28, 1902. E. Daecke. Clementon, Camden Co., N. J. April 21, 1902. E. Daecke. Clementon, Camden Co., N. J. May 12 and 14, 1901. H. L. Viereck and J. A. G. Rehn. Clementon, Camden Co., N. J. May 6 and 22, 1899. H. L. Viereck. Westville, Gloucester Co., N. J. May 18. Dr. H. Skinner. Between head of Batsto River and Speedwell, Burlington Co., N. J. June 18, 1901. J. A. G. Rehn.

Schistocerca alutacea (Harris).

Acridium rubiginosum Scudder, Boston Journ. Nat. Hist., vii, p. 467, 1862.

The above synonymy is established after an examination of the sixty-seven available local specimens. The striped phase (*alutacea* s. st.) and the reddish form with the mottled tegmina (*rubiginosum* Scudder) are connected by a series of seventeen specimens, which show indisputable evidence of intergradation. In many reddish specimens the dorsal line is well marked, in others present on the pronotum alone, and in some green specimens the tegmina are distinctly mottled. The structural differences ascribed to the two forms are not of any value, specimens typical of either one of the forms, according to these slight

structural discrepancies, being the reverse when coloration is considered.*

Angelsea, Cape May Co., N. J. Sept. 1, 1902. E. Daecke. DaCosta, Atlantic Co., N. J. July 28, 1902. E. Daecke. Manumuskin, Cumberland Co., N. J. Aug. 17, 1902. E. Daecke. Taunton, Burlington Co., N. J. Sept. 6, 1902. W. Stone. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Atsion, Burlington Co., N. J. Sept. 2, 1902. J. A. G. Rehn. Bear Swamp, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. Between Harris and White Horse, Aug. 13, 1902. J. A. G. Rehn. Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn. Tinicum, Delaware Co., Pa. Aug. 31, 1902. W. Stone.

Melanoplus fasciatus (Walker).

Bellasylva, Wyoming Co., Pa. July 13-20, 1901. W. Stone. Lehigh Gap, Lehigh Co., Pa. July 20, 1902. J. A. G. Rehn. Atsion, Burlington Co., N. J. Sept. 2, 1901. J. A. G. Rehn. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Between Harris and White Horse, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. DaCosta, Atlantic Co., N. J. July 28, 1902. E. Daecke. Manumuskin, Cumberland Co., N. J. Oct. 20, 1902. E. Daecke.

This species is abundant in bogs and on scrub land adjoining the same. At the fifth locality cited sixteen specimens were captured in a short time.

Melanoplus femoratus (Burmeister).

Lehigh Gap, Lehigh Co., Pa. July 20, 1902. J. A. G. Rehn. Crum Creek, Delaware Co., Pa. July 26, 1902. E. G. Vanatta. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Bear Swamp, Burlington Co., N. J. Aug. 13, 1902 J. A. G. Rehn. Between Harris and White Horse, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. Atsion, Burlington Co., N. J. Sept. 2, 1901. J. A. G. Rehn.

Melanoplus femur-rubrum (DeGeer).

DaCosta, Atlantic Co., N. J. July 28, 1902. E. Daecke.

* For further remarks concerning this species see Rehn, ENT. NEWS, xiii, p. 89.

Atlantic City, Atlantic Co., N. J. Sept. 11, 1902. J. A. G. Rehn. Angelsea, Cape May Co., N. J. Sept. 1, 1902. E. Daecke. Clementon, Camden Co., N. J. Aug. 31, 1902, J. A. G. Rehn. Medford, Burlington Co., N. J. Sept. 5 and 7, 1902. W. Stone. Taunton, Burlington Co., N. J. Sept. 6, 1902.

Melanoplus punctulatus (Scudder).

Bellasylva, Wyoming Co., Pa. July 13-20, 1901. W. Stone.

Melanoplus scudderi (Uhler).

Medford, Burlington Co., N. J. Aug. 11 and 13, 1902. J. A. G. Rehn. Atsion, Burlington Co., N. J. Sept. 2, 1902. J. A. G. Rehn. DaCosta, Atlantic Co., N. J. July 19.

Paroxya floridiana (Thomas).

Tinicum, Delaware Co., Pa. G. M. Greene. Riverton, Burlington Co., N. J. Sept. 8, 1901. H. L. Viereck. Bear Swamp, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn. Speedwell, Burlington Co., N. J. Aug. 12, 1902. J. A. G. Rehn. Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn.

TETTIGONIDÆ.

Scudderia furcata Brunner.

Clementon, Camden Co., N. J. Aug. 31, 1902. J. A. G. Rehn. Mt. Airy, Philadelphia Co., Pa. Oct. 3, 1902. E. Daecke.

Scudderia curvicauda (DeGeer).

Between Harris and White Horse, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn.

Amblycorypha oblongifolia (DeGeer).

DaCosta, Atlantic Co., N. J. Aug. 3, 1902. E. Daecke. Atsion, Burlington Co., N. J. Sept. 2, 1901. J. A. G. Rehn. Absecon, Atlantic Co, N. J. Mt. Airy, Philadelphia Co., Pa. Oct. 1902. E. Daecke.

Amblycorypha rotundifolia (Scudder).

Manumuskin, Cumberland Co., N. J. Oct. 20, 1902. E. Daecke.

Microcentrum retinerve (Burmeister).

Manumuskin, Cumberland Co., N. J. Oct. 20, 1902. E. Daecke.

Conocephalus triops (Linn.).

Riverton, Burlington Co., N. J. Sept. 8, 1901. H. L. Viereck. Philadelphia, Pa. Sept. 6, 1901. J. A. G. Rehn.

Conocephalus ensiger Harris.

Manumuskin, Cumberland Co., N. J. Aug. 17, 1902. E. Daecke.

Orchelimum concinnum Scudder.

Atlantic City, N. J. Sept. 11, 1902. J. A. G. Rehn, Da Costa, Atlantic Co., N. J. July 20, 1902. E. Daecke.

Orchelimum nigripes Scudder.

Belleplain, Cape May Co., N. J. Sept. 8, 1902. E. Daecke.

This specimen is slightly larger than the original measurements of Scudder's description, and the tibiæ and tarsi are reddish-brown instead of blackish, but of the known species it appears to be most closely allied to *nigripes*.

Xiphidion nemorale Scudder.

Atlantic City, N. J. Sept. 11, 1902. J. A. G. Rehn.

Xiphidion saltans Scudder.

Riverton, Burlington Co., N. J. Sept. 8, 1901. H. L. Viereck.

Xiphidion strictum Scudder.

Taunton, Burlington Co., N. J. Sept. 6, 1902. W. Stone Mt. Airy, Philadelphia Co., Pa. Oct. 3, 1902. E. Daecke.

Atlanticus pachymerus Burmeister.

Castle Rock, Delaware Co , Pa. June 1 and 22, 1902. E. Daecke.

Atlanticus dorsalis (Burmeister).

Broad Top Mountain, Bedford, Huntingdon Co., Pa. Dr. Joseph Leidy.

Camptonotus carolinensis (Gerstaecker).

Point Pleasant, Ocean Co., N. J. A. P. Brown.

Family GRYLLIDÆ.

Tridactylus terminalis Scudder.

Anglesea, Cape May Co., N. J. Sept. 1, 1902. E. Daecke.

Ellipes minuta (Scudder).

Ocean City, Cape May Co., N. J. 1902. C. W. Johnson.

Œcanthus angustipennis Fitch.

Between Harris and White Horse, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn.

Œcanthus latipennis Riley.

Medford, Burlington Co., N. J. Aug. 13, 1902. J. A. G. Rehn.

Œcanthus nigricornis Walker.

Manumuskin, Cumberland Co., N. J. Oct. 20, 1902. E. Daecke.

Œcanthus quadripunctatus Beutenmuller.

Medford, Burlington Co., N. J. Sept. 5, 1902. W. Stone

Anaxipha exigua (Say).

Pottstown, Montgomery Co., Pa. Aug. 8, 1902. C. W. Johnson.

This species was taken in beating weeds along the banks of the Schuylkill River.

Tropical Butterflies.

By Wm. D. Denton.

In the October number of the News is an article by O. W. Barrett in which he speaks of the "abundance of Lepidoptera in the Tropics."

From what he writes it might be inferred that everywhere in the tropics butterflies could be found in quantities, but such is far from being the case. In Colombia, South America, where I have collected, I have found butterflies, as a general thing,

scarce. A great many species may be found during a collecting trip, but seldom are many individuals seen at one time, except in the case of a few species.

I have never seen them at any one time, in the tropics, as plentiful as I have seen them during some favorable day in the White Mountains. This has been not only my experience, but that of other collectors. Such men as Bates and Wallace speak of this peculiarity noticed while collecting in Brazil, on the Amazon River.

There is one thing in a collector's favor in the tropics, however, that I have noticed, and that is that a larger percentage of those captured during the day are perfect than are those caught in the North. One seldom sees ragged, worn-out specimens such as one often sees in the North. It is true that one sometimes sees specimens with a piece gone from the wing, but most of the specimens look as though they had not flown long.

The reason for this may be that the struggle for existence is so great among all insect life in the tropics, that individuals do not live long enough to become worn, but soon after laying their eggs, and many times before, they become the prey of insect-eating animals.

Also in the same number of the NEWS is an article by E. J. Smith in which he incidentally refers to the Denton Mount as "rather expensive." I wish to take exception to this statement and am prepared to show that the Denton Mount is less expensive than any other method of mounting which at all protects the specimen against destructive insects, dust and the warping of the wings.

BOLIVIAN LEPIDOPTERA (See page 293) —I think it well for me to let you know exactly how the work progresses on the first volume of my descriptions of new butterflies, because there seems to be considerable misunderstanding as to the nature of the work, etc. The plates and printed matter that I have already sent out are simply complimentary and to give an idea of what I was doing. A copy for the printer for the first volume is already completed and will contain about fifty plates and 120 pages, but the work on the plates requires time, and it may be two or three years yet before the first volume will be ready.—A. G. WEEKS, JR.

Ceropales vs. Agenioxenus.

By William H. Ashmead.

In the November number of The Entomological News, Mr. H. L. Viereck, in a paper entitled "A New Ceropales," says; "A specimen of *Ceropales maculatus* Latr., from Hastings, England, runs to *Ceropales* as given in Mr. Ashmead's table. In *Ceropales robinsoni* = *rufiventris* Walsh, the cubitus in hind wings originates *behind* the transverse median nervure and not *before*, as in Mr. Ashmead's table; in other words the type of *Agenioxenus* Ashmead is congeneric with the type of *Ceropales* Latr., consequently *Agenioxenus* must be placed as synonymous with *Ceropales* Latr."

What wonderful perspicacity! Mr. Viereck finds my definition of *Ceropales* Latr. correct. But so too, is my definition of *Agenioxenus*. Mr. Viereck should have taken more time to reflect and he ought not to have stated so positively that *Agenioxenus* was synonymous with *Ceropales;* the characters used to define it very clearly and sharply separate it from *Ceropales*. He should have at once seen that *Agenioxenus* was based upon quite a different insect from *C. robinsoni* Cresson, which he says equals *C. rufiventris* Walsh.

Agenioxenus Ashmead was based upon a specimen of *Ceropales rufiventris* Walsh, in the Riley Collection, probably a cotype of Walsh's, and the characters given in my table are correct.

It is quite evident, therefore, that *Ceropales robinsoni* Cresson is not the same as *C. rufiventris* Walsh. Mr. Viereck has been deceived into making them synonymous by a superficial resemblance in color; in making *Agenioxenus* identical with *Ceropales* he is totally wrong.

Xylocopa varipuncta, Patt.—Mr. F. M. Irish has collected this fine bee (black in the ♀, fulvous in the ♂) in great numbers at Temple, Arizona, and has kindly given me a pair. The species extends thence to the coast in a southwesterly direction, having been found in Lower California, as reported by Fox, and at San José de Guaymas in Mexico, where it was collected April 10, 1898, by Dr. L. O. Howard.—T. D. A. Cockerell.

Additional List of Insects Taken in Alpine Region of Mt. Washington.

By Annie Trumbull Slosson.

I submit herewith a list of some 150 insects taken in the Summer of 1902 and not included in my previous lists.

I am indebted for much assistance in the identification of these species to Messrs. Coquillet, Liebeck, Ashmead, Blanchard, Banks, Van Duzee, Fernald and Ball.

LEPIDOPTERA.

Caradrina multifera *Walk.*
Conchylis dorsimaculana *Rob.*
Penthina frigidana *Pack.*
Gracilaria elongella *Linn.?*

COLEOPTERA.

Carabidæ.

Lebia tricolor *Say.*
Cymindis unicolor *Kirby.*
Bradycellus neglectus *Lec.*

Silphidæ.

Choleva clavicornis *Lec.*
Anisotoma valida *Horn.*
collaris *Lec.*
Liodes globosa *Lec.*
Agathidium pulchrum *Lec.*

Staphylinidæ.

Homalota sp.?
" "
Mycetoporus n. sp.?
Oxyporus femoralis *Grav.*
bicolor *Fauv.*
Oxytelus nitidulus *Grav.*
Homalium flavipenne *Makl.*
Anthobium pothos *Mann.*

Dermestidæ.

Dermestes lardarius *Linn.*
Attagenus piceus *Oliv.*

Dascyllidæ.

Eucinetus punctulatus *Lec.*

Lampyridæ.

Photinus ardens *Lec.*

Ptinidæ.

Dorcatoma pallicorne *Lec.*

Scarabæidæ.

Geotrupes horni *Blanch.*

Cerambycidæ.

Oberea tripunctata *Swed.*

Chrysomelidæ.

Lema brunneicollis *Lec.*
Microrhopala excavata *Oliv.*

Tenebrionidæ.

Boletophagus corticola *Say.*

Mordellidæ.

Mordella marginata *Melsh.*

Curculionidæ.

Apion walshii *Smith.*
Dorytomus brevicollis *Lec.*
Elleschus ephippiatus *Say.*

Scolytidæ.

Dendroctonus similis *Lec.*

DIPTERA.

Diplosis sp.?
Bolitophila montana *Coq.*
Platyura mendosa *Lw.*
Lasiosoma pallipes *Say.*
Boletina groenlandica *Staeg.*
tricincta *Lw.*

Neoglaphyroptera bivittata *Say.*
opima *Lw.*
sublunata *Lw*
Mycetophila ichneumonea *Say.*
Chironomus scalænus *Schr.*
Tanytarsus n. sp. ?
Camptocladius byssinus *Meig.*
Ceratopogon trivialis *Lw.*
eriophorus *Willst.*
fusculus *Coq.*
sanguisuga *Coq.*
transiens *Walk.*
arcticus *Coq.*
Dicranomyia longipennis *Schum.*
Rhypholophus meigenii *O. S.*
Erioptera septemtrionis *O. S.*
Epiphragma fascipennis *Say.*
Limnophila fuscovaria *O. S.*
lenta *O. S.*
montana *O. S.*
Amalopis vernalis *O. S.*
Rhamphomyia dimidiata *Lw.*
augustipennis *Lw.*
n. sp. ?
Hilara umbrosa *Lw.*
Hormopera brevicornis *Lw.*
Dolichopus comatus *Lw.*
setifer *Lw.*
detersus *Lw.*
Gymnoptermus phyllophorus *Lw.*
Campsicnemus hirtipes *Lw.*
Platypeza tæniata *Snow.*
Morellia micans *Macq.*
Lispa uliginosa *Fall.*
Rhagoletis pomonella *Walsh.*
Sapromyza longipennis *Meig.*
Hydrellia scapularis *Lw.*
Scaptomyza flaveola *Meig.*
Oscinis dorsata *Lw.*
Agromyza terminalis *Coq.*
Limosina fontinalis *Fall.*

HYMENOPTERA.

Nyssonidæ.

Pseudoplisus phaleratus *Say.*

Proctotrypidæ.

Proctotrypes abruptus *Say.*
slossonæ *Ashm.* MS. n. sp.

Bethylidæ.

Belyta erythropus *Ashm.*
Zelotypa n. sp.
" "

Diapriidæ.

Diapria colon *Say.*

Ceraphronidæ.

Megaspilus schwarzi *Ashm.*
Eumegaspilus erythrothorax *Ashm*

Figitidæ.

Aegilips monticola *Ashm.* MS. n.sp

Encyrtidæ.

Syrphophagus sp.

Pteromalidæ.

Coelopisthia maculipennis *Ashm.*

Eulophidæ.

Sympiesis sp.
" "
Cirrospiloideus flavomaculata *Ash.*
Diaulus beginii *Ashm.*
Eulophus sp.

Ichneumonidæ.

Pseudamblyteles sp.
Epitomus americanus *Ashm.* MS.
Exolytus brevis *Davis.*
Atractodes politus *Ashm.*
Diatora compressa *Ashm.* MS.n.sp.
Pezomachus dimidiatus *Cr.*
Himertosoma quinquecinctum *Ashm.* MS. n. sp.
Polysphincta erythropleura *Ashm.* MS. n. sp.
Polysphincta albocoxalis *Ashm.* MS
Euceros canadensis *Cr.*
Scorpiorus albomarginatus *Ashm.* MS.

Monoblastus nigriventris *Ashm.*MS
Psilosarge longipes *Ashm.* MS.
Zootrephes bicoloripes *Ashm.* MS.
Hypoleptus monticola *Ashm.*
Phænosomus alticola *Ashm.* MS.
Hyperacmus tineæ *Riley.*
Polyclistus frontalis *Ashm.* MS.
Zaporus minutus *Ashm.* MS.
Corynephanes tarsalis *Ashm.* MS.
Aperileptus pleuralis *Ashm.* MS.

Alysiidæ.

Idiolexis collaris *Ashm.* MS.
Cratospila rubicunda *Say.*
Aphæreta auripes *Prov.*
Orthostigma delicata *Ashm.* MS.
Aspilota caudata *Prov.*
Rhizarcha nigripes *Ashm.* MS.

Braconidæ.

Aphidius slossonæ *Ashm.* MS.
Meteorus niger *Ashm.*
areolatus *Ashm.* MS.
humilis *Cr.*
Microdus varipes *Cr.*
Macrodyctium monticola *Ashm.*MS
Bracon cookii *Ashm.*
furtivus *Fyles.*
?Clinocentrus sp.
Microrhogas niger *Ashm.* MS.

Lydidæ.

Cephaleia n. sp.

Pterygophoridæ.

Acordulecera dorsalis *Say.*

Nematidæ.

Nematid n. gen.?

Pristiphora sp.
Pachynematus sp.
Anauronematus sp.

Tenthredinidæ.

Dolerus sericeus *Say.*
Strongylogaster sp.
Macrophya sp.
" "
Tenthredo sp.
" "

HEMIPTERA.

Heteroptera.

Homæmus æneifrons *Say.*
Euschistus politus *Uhl.*
Aradus abbas *Berg.*

Homoptera.

Cixius stigmatus *Say.*
Lamenia vulgaris *Fitch.*
Bythoscopus cognatus *Van D.*
Eucanthus orbitalis *Fitch.*
Strongylocephalus agrestis *Fall.*
Platymetopius acutus *Say.*
Athysanus arctostaphyli
comma.
Scaphoideus immistus *Say.*
lobatus *Van D.*
scalaris *Van D.*
Cicadula var. americana *Van D.*
divisa *Uhl.*
Empoasca obtusa *Walsh.*
Typhlocyba tricincta *Fitch.*

NEUROPTERA.

Siphlurus aridus *Say.*
Calopteryx amata *Hag.*
Agapetus obscurus *Walk.*

A BUTTERFLY NEW TO THE UNITED STATES.—In Entomological NEWS, v. p. 96, 1894, Prof. Levi W. Mengel describes as new, *Myscelia skinneri*, from Bayemena, Sinaloa, Mexico. On May 12th, of this year, Mr. Henry L. Viereck, took a specimen of this species in Dry Canon, Alamogordo, New Mexico. This adds a genus and species new to our fauna.—H. SKINNER.

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 a 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., DECEMBER, 1902.

In an editorial which appeared in the NEWS for December, 1901, we gave a history of the Department of Entomological Literature of this journal. During the present year that department has been efficiently conducted by Messrs. H. L. Viereck and J. A. G. Rehn, to whom, and to Mr. J. C. Bradley, the Editors offer their hearty thanks. Unfortunately for this department, the services of these gentlemen will no longer be available, and the Editors have, for some time past, been considering the advisability of abandoning this feature of the NEWS, in its present form at least. We have taken into consideration the facts that the Zoologischer Anzeiger and the Concilium Bibliographicum * publish, at quite frequent intervals, more extensive lists of entomological literature than the NEWS can give space to, that the time and labor involved in the preparation of the NEWS' lists lead but to duplication of results more efficiently recorded in them and in other publications,† and that the space heretofore occupied by the entomo-

* The Anzeiger is published at Leipsic, the Concilium at Zurich; they may be so addressed by those wishing information as to prices, etc. The Anzeiger is in book form and comprises both scientific articles and lists of titles of papers under various systematic headings; this list is termed "Bibliographia Zoologica," and may be procured separately. The Concilium issues library catalogue cards, one card for each title, and cards may be procured for separate groups of animals.

† Such as the Zoological Record, London; Archiv für Naturgeschichte, Berlin; Zoologische Jahresberichte, Naples and Berlin; all these are issued yearly, the last named does not include purely systematic papers. The Allgemeine Zeitschrift für Entomologie, Neudamm, Germany, publishes semi-monthly lists of entomological papers.

logical literature might be more advantageously filled with other matter.

The Editors have therefore concluded to discontinue, after this number, the department of Entomological Literature as at present established, but we trust that contributors will furnish (as not a few have done in the past) notices of important and interesting publications on entomological subjects. We hope that this decision will meet with the approval of the majority of our readers.

Entomological Literature.

COMPILED BY H. L. VIERECK AND J. A. G. REHN.

Under the above head it is intended to note papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology, unless monographs, 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. The titles of all papers will be quoted in the original and not translated.

3. The American Naturalist, Cambridge.—**4.** The Canadian Entomologist, London, Ont.—**5.** Psyche, Cambridge.—**9.** The Entomologist, London, Eng.—**11.** Annals and Magazine of Natural History, London.—**15.** Biologia Centrali-Americana, London.—**37.** Le Naturaliste Canadien, Quebec.—**58.** Revista Chilena de Historia Natural, Valparaiso.—**60.** Anales del Museo de Buenos Aires.—**153.** Bulletin of the American Museum of Natural History, New York.—**156.** Zeitschrift für Systematische Hymenopterologie und Dipterologie, Teschendorf.—**159.** Allgemeine Zeitschrift für Entomologie, Neudamm.

THE GENERAL SUBJECT.—Bethune, C. J. S.—Bibliography of Canadian Entomology for the year 1900. Proceedings and Transactions of the Royal Society of Canada, Second Series, vii, sect. iv, pp. 135–139.—**Cockerell, T. D. A.** Flowers and Insects in New Mexico,* **3,** xxxvi, pp. 809–817.—**Porta, A.** Die Funktion der Leber bei den Insekten. **159,** vii, pp. pp. 427–429.—**Webster, F. M.** Winds and Storms as Agents in the Diffusion of Insects. **3,** xxxvi, pp. 795–801.

ECONOMIC ENTOMOLOGY.—Britton, W. E. The White-fly or Plant-house Aleyrodes. Bulletin 140, Connecticut Agricultural Experiment Station, New Haven, Conn.—**Scott, W. M. & Fiske, W. F.** Winter Treatment of San Jose Scale in the Light of Recent Experiments. Bull. No. 4, Georgia State Board of Entomology, Atlanta, Ga.

ARACHNIDA.—Cambridge, F. O. P. Arachnida Araneidea (Mexico and Central America). Vol. II, pp. 377–392, pl. xxxvi, **15,** pt. clxxiii.—**Cambridge, O. P.** Arachnida Araneidea (Mexico and Central America).

Vol. I, pp. 309-317, **15,** clxxiii.—**Pocock, R. I.** Arachnida Scorpiones (Mexico and Central America). Pp. 17-32, pls. iii, vi, **15,** clxxiii.

HEMIPTERA.—**Berg, C.** Rectificaciones y Anotaciones à la "Sinopsis de los Hemipteros de Chile" de Edwyn C. Reed. **60,** vii, pp. 81-91.—**Britton, W. E.** The White fly or Plant-house Aleyrodes. Bulletin 140, Connecticut Agricultural Experiment Station, New Haven, Conn.—**Chagnon, G.** Notes Entomologiques. **37,** xxix, pp. 129-131.—**Distant, W. L.** Rhynchotal Notes, xv. Heteroptera; Family Reduviidæ (continued), Piratinæ and Ectrichodinæ. **11,** (7) x, pp. 282-295.—**Howard, L. O.** A New Genus of Aphelininæ from Chili. **58,** vi, pp. 172-175.—**King, G. B.** Two New Ants'-nest Coccids from Texas.* **4,** xxxiv, pp. 285-286.—**Kirkaldy, G. W.** Miscellanea Rhynchotalia, No. 5. **9,** xxxv, pp. 280-284.

ODONATA.—**Calvert, P. P.** A Contribution to Knowledge of the Odonata of Paraguay. **60,** vii, pp. 25-35.

LEPIDOPTERA.—**Beutenmüller, W.** Descriptions of some Larvæ of the Genus *Catocala.* **153,** xvi, pp. 381-384. The Earlier Stages of Some Moths. **153,** xvi, pp. 395-398.—**Cockerell, T. D. A.** Flowers and Insects in New Mexico. **3,** xxxvi, pp. 809-817.—**Dyar, H. G.** Life Histories of North American Geometridæ, xxxvii. **5,** ix, pp. 419-420. Remarks on the Third Volume of Tutt's British Lepidoptera. **4,** xxxiv, pp. 298-301.—**Enderlein, G.** Eine einseitige Hemmungsbildung bei *Telea polyphemus* von ontogenetischen Standpunkt. Zoologische Jahrbücher, Abth. Anat. und Ontogenie, xvi, heft ii, pp. 571-614.—**Fletcher, J. & Gibson A.** The Life-history of the Variable Cutworm, *Mamestra atlantica* Grt. **4,** xxxiv, pp. 279-284.—**Gibson, A.** An Interesting Caterpillar (*Macrurocampa marthesia* Cram.). The Ottawa Naturalist, Ottawa, xvi, p. 161.—**Grote, A. R.** Two New Species of Lepidoptera.* **4,** xxxiv, p. 295.—**Linden, M. von.** Zusammenfassende Darstellung der experimentallen Ergebnisse über den Einfluss der Temperatur während der Puppenentwickelung auf die Gestaltung, Färbung und Zeichnung der Schmetterlinge. Die Vererbung erworbener Zeichnungscharaktere. Zoologische Centralblatt, ix, pp. 581-599.—**Scudder, S. H.** Group Characteristics of Some North American Butterflies, v. **5,** ix, pp. 413-419.—**Soule, C. G.** Notes on Hybrids of *Samia cynthia* and *Attacus promethea.* **5,** ix, pp. 411-413.

DIPTERA.—**Becker, Th.** Meigen'schen Typen der sogen. Muscidæ acalypteræ (Muscaria holometopa) in Paris und Wien. **156,** ii, pp. 337-355.—**Chagnon, G.** Notes Entomologiques. **37,** xxxix, pp. 129-131.—**Coquillett, D. W.** Three New Species of Culex.* **4,** xxxiv, pp. 292-293.—**Dyar, H. G.** The Eggs of Mosquitoes of the Genus Culex. Science, xiv (n. s.), pp. 672-673.—**Kertész, C.** Catalogus Dipterorum hucusque descriptorum. Volumen ii, Cecidomyiidæ, Limnobiidæ, Tipulidæ, Cylindrotomidæ. Leipsig.

COLEOPTERA.—**Chagnon, G.** Notes Entomologiques. **37,** xxxix, pp. 129-131.—**Champion, G. C.** Coleoptera (Mexico and Central America). Vol. iv, pt. 4, pp. 33-64, pls. III, IV, **15,** pt. clxxiii.—**Ouellet, C. I.** Liste

des Coléopteres les plus remarquables de la province de Québec. **37,** xxix, pp. 139–141.—**Pierce, W. D.** A New Myodites (Rhipiphoridæ).* **4,** xxxiv, pp. 293–294.—**Porter, C. E.** Lista de los Lathridiidæ Chilenos. **58,** vi, pp. 170-171.—**Roy, E.** Encore Un. (Life History of Cassida.) **37,** xxix, pp. 145-149.

HYMENOPTERA.—Ashmead, W. H. Classification of the Fossorial, Predaceous and Parasitic Wasps, or the Super-family Vespoidea. Paper No. 10. **4,** xxxiv, pp. 287-291. The Hymenopterous Parasites of Phenacoccus cavalliæ Ckll.* **4,** xxxiv, pp. 301-302.—**Brithes, F. J.** Notes Biologiques sur Trois Hymenoptéres de Buenos Aires. Revista del Museo de La Plata, La Plata, x, pp. 195-205.—**Cockerell, T. D. A.** Flowers and Insects in New Mexico.* **3,** xxxvi, pp. 809-817.—**Dalla Torre, C. G. De.** Catalogus Hymenopterorum. Volumen iii: Trigonalidæ, Megalyridæ, Stephanidæ, Ichneumonidæ, Agriotypidæ, Evaniidæ, Pelecinidæ. Pars ii (sign. 35-72). Leipsig, 1902.—**Ducke, A.** Beobachtungen über Blütenbesuch, Erscheinungszeit, etc., der bei Para vorkommenden Bienen. **159,** vii, pp. 417-422. Neue Arten des Genus *Bothynostethus* Kohl. Verhandlungen der K. K. Zoologisch-botanischen Gesellschaft in Wien, lii, pp. 575-580.—**Friese, H.** Neue Meliponiden. **156,** ii, pp. 382-383.—**Lewis, G.** On New Species of Histeridæ and Notices of others. **11,** (7) x, pp. 265-278.—**Lovell, J. H.** [Concerning bees of the Genera Halictus, Andrena and Epeolus.] **3,** xxxvi, pp. 832-833.—**Schmiedeknecht, O.** Die Ichneumonidentribus der Anomalinen. **156,** ii, pp. 356-368.—**Schrottky, C.** Hymenoptères Nouveaux de l'Amérique Méridionale. **60,** vii, pp. 308-315. Les Espèces des Genres *Megacilissa*, *Canpolicana*, *Oxæa*, *Epicharis*, *Centris*, *Meliphila*, et *Euglossa*, dans la Collection du Musée National de Buenos Ayres. **60,** vii, pp. 317-327.—**Wasmann, E.** Neues über die zusammengesetzten Nester und gemischten Kolonien der Ameisen. **159,** vii, pp. 422-427.

A Nature Wooing at Ormond by the Sea. By W. S. Blatchley, State Geologist, Indiana. Nature Publishing Co., Indianapolis. Price postpaid $1.25. This is an illustrated work of 245 pages and describes a vacation trip to Florida. "Southward I went, but my rest was mainly taken in the great hospital of Nature—the woods and fields of the region where I sojourned. There I jotted down the facts and fancies concerning the animals and plants about me." The function of a book of this kind is to stimulate others to take an interest in the beauties of Nature and to typify the highest and best kind of recreation. The author is a trained naturalist, and he describes in a most entertaining way the animals, birds, plants and insects he saw, as well as the forms long since dead and gone. Lists of the Odonata, Orthoptera, Heteroptera, Lepidoptera and Coleoptera, are given with notes. We recommend this little book to all who have visited Florida and to those who contemplate such a journey.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

ÆLLOPOS FADUS VAR. TITAN, CRAM.—A specimen of this southern sphingid was taken at Las Vegas, N. M , in July, by Mr. Arnold Garlick. It was a surprise to see it so far north.—T. D. A. COCKERELL.

MR. O. W. BARRETT is now at Mayagüez, Porto Rico, with the Porto Rico Agricultural Experiment Station. The economic side of botanical and entomological questions leaves but little room for the other sides with him.

PROF. COCKERELL writes as follows in regard to the poem on page 297 November NEWS : " You think the ponderous idiocy in the middle of page 297 is funny." The author doubtless thought it pretty good or he would not have sent it to the NEWS. I must confess I thought it funny, but on reflection I have changed my mind. It is really tragical, as many insects are not represented by descriptions but by types, and if the genera *Anthrenus* and *Dermestes* are not annihilated, or if railroads cease to be, or if humans degenerate into legless beings, the very thing described in the poem will come to pass, not in the unnamable place, but on earth.—H. S.

PAPILIO PHILENOR in New Hampshire.—An interesting instance of a butterfly following its food plant into new regions was furnished by the discovery of two colonies of *philenor* larvæ on pipe vines (*Aristolochia sipho*) in Claremont early in August. Only three single captures of this insect have previously been reported from this State. As its food plant has of late years become quite a favorite ornamental vine in this region there would appear good reason to believe that this insect had permanently established itself here. The disparity in size between the broods above mentioned would indicate that they were from different parents. A portion of one brood was confined and imagos were bred from them September 7th to 10th. To-day I saw a specimen in flight feeding at verbena flowers.—F. H. FOSTER, Claremont, N. H.

THE STRONGEST attraction at the Science Museum in Springfield, Mass., this past summer was a display of live caterpillars by Dr. George Dimmock. Quite a variety of species were shown, and as they reached maturity and pupated, others were constantly added until the close of the season. It was a piece of real missionary work and a revelation to most of the visitors. A proof that grey hairs do not always bring wisdom was the lamentable ignorance of most of the older people in comparison with the rising generation, as was evinced by their questions. Many of these worthies were greatly surprised to find that there are other kinds of caterpillars besides the silk-worm and tomato-worm. But the climax was furnished by a distinguished looking lady, evidently anxious to prove her

culture. Entomologists know what voracious feeders caterpillars are and will understand that it was impossible to keep the tables, where whole broods of large caterpillars were feeding, cleared of frass. Indeed the little pellets littered the tables in goodly quantity. Imagine the effect when this lady, after a hurried glance, exclaimed: "Oh! You feed them on those pills!"—F. K.

DURING July a correspondent wishing to send me some beetles, and not having any convenient arrangement for killing them, placed a large male specimen each of *Prionus laticollis* Drury and *Orthosoma brunneum* Forst. in a box, together with a small click-beetle. On reaching my office, the *Orthosoma* had lost all of his tibiæ and tarsi and all but the three lower joints of his antennæ. One of these stumps was still between the mandibles of *Prionus*, and the edges of *Orthosoma's* wing-covers gave evidence by the marks on them of having been bitten in many places. *Prionus* had lost two joints from one antenna and four from the other, but was otherwise uninjured. The struggle had been a fierce one. The click-beetle was unharmed, which goes to show that *Prionus* probably believed in attacking one more nearly his own size.—W. E. BRITTON.

IN MEMORIAM, (*Cicada septendecim*).—"From reports that have been received from different sections of the country," said the City Forester, of Philadelphia, this afternoon, "we will have a rare experience in handling the locusts. They are somewhat early in the season in putting in an appearance, but despite this we are prepared to fight the insects, for we have taken all the precautionary measures possible with that end in view. As soon as the bugs show themselves we will begin to spray the trees, plants, and shrubbery of all kinds with a solution of Paris green. This solution, if judiciously used, will have the effect of destroying the pests. I advise all persons who have gardens attached to their houses to use the solution which we intend to use in the city's parks.

"In making this solution take one pound of Paris green, and dissolve it in 200 gallons of water, the mixture to be made in smaller proportions, according to the dimensions of the garden. This should be sprayed on plants and trees, as well as on the ground, the moment the locusts are observed. It is not necessary to be extravagant in using the solution, as a small quantity will answer the purpose; that is, if it is used correctly. In spraying, a hand syringe can be used with very good results. These can be obtained at a very small cost. I would advise the spraying in preference to burning the insects with oil or alcohol, as the oil oftentimes destroys the trees and plants, and the relief obtained is merely temporary."

The above is copied from a newspaper report of an interview had in the early part of the past summer. The moral is obvious.

CHIONOBAS KATAHDIN—In the NEWS for Oct., 1901, I recounted the difficulties encountered in collecting this interesting butterfly, and mentioned particularly the uncertainty of finding favorable weather conditions. My collector's efforts to obtain some of these insects this season fully corroborates my statement.

He started for Mt. Katahdin on June 27th, and remained 10 days, but owing to the continuance of rain and fog he did not see a single specimen. Knowing that there must be some season for them, I sent him to the mountain a second time, and on July 20th and 21st, the weather being less "moist" than usual, he managed to secure a few.

Doubtless, if a collector could spend 4 or 5 weeks on Mt. Katahdin, he would make a good haul, but owing to the expense and the scarcity of other Lepidoptera it would hardly be worth while.

It will probably be some time before the butterfly market becomes overstocked with *Chionobas katahdin*.—H. H. NEWCOMB.

Doings of Societies.

At the October meeting of the Feldman Collecting Social, held at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, nine members were present.

Mr. Daecke exhibited specimens of *Celithemis fasciata*, a species mentioned at last meeting. He recorded *Cidaphurus cressonii*, *Ceratosoma fasciata*, *Chirosia capito*, *Mydæa pruinosa*, *Limnophora arcuata* and *Callicera johnsoni* from Manumuskin, N. J., as new to the State. He also showed *Labena grallator* and *Andrena integra*, both rare species, from the same locality.

Mr. Johnson referred to the *Callicera johnsoni*, and stated that but three species of the genus were known. The genus was only recorded from mountainous regions until the present species was described from the vicinity of Philadelphia.

Mr. H. W. Wenzel exhibited part of his collection of Cicindelidæ representing nearly all the species and varieties and over 1000 specimens. Also a small form of *Phanæus carnifex* with rudimentary horn, from North Carolina, represented by several male specimens.

Mr. Johnson exhibited specimens illustrating variation in the neuration of *Amalopis inconstans*.

Mr. Boerner recorded the capture of *Salpingus virescens* at Sea Isle City, N. J., June 10th.

WILLIAM J. FOX, *Secretary*.

The regular meeting of the Chicago Entomological Society was held in the John Crerar Library, Thursday evening, October 16, 1902.

Eight members present. Visitor, Mr. F. E. Brown. President Longley in the chair.

On behalf of the committee for securing pamphlet cases for the society's collection, Mr. Kwiat reported that 15 cases had been purchased at a cost of $5.00, and that the same were in the hands of the curator.

The committee on selecting topics for discussion, submitted the following schedule of subjects for coming meetings:

November meeting, paper by Prof. Tower, on the migrations of the Genus *Doryphora*.

December, report of year's progress and election of officers.

January, Mr. Healy, on *Satyrus alope*, in its various forms, as illustrating climatic influence on races.

February, a paper on insect wing venation by Prof. Needham.

March, Prof. Tower, a paper on metamorphoses.

There being no further business before the meeting an informal discussion was engaged in. Mr. Kwiat told of his experience in raising certain larvæ, which had all perished by some bacterial disease.

Messrs. Comstock exhibited some of their Lepidoptera taken in Colorado during the summer.

Adjourned at 9.40.

JOHN COMSTOCK, *Secretary*.

The Entomological Society of Western Pennsylvania held its regular meeting on November 1st, at 8 P. M., in Carnegie Museum, Pittsburg, President Holland in the chair. At roll-call 18 members responded to their names.

A motion of Henry Engel that the President appoint a committee to prepare a complete list of species of Lepidoptera taken in Western Pennsylvania was adopted. The President appointed H. Engel, H. D. Merrick, George Ehrman, George Krautwurm and F. A. Merrick. The committee requested that each member of the Society prepare a list of species taken by him, to be handed in at our December meeting. Mr. Hugo Kahl was elected a member of the Society.

Dr. Holland exhibited some plates that he has prepared for his new "Moth Book," about eighteen of them having been completed, which were pronounced by all present to be the finest color illustrations they had ever examined. This work has assumed quite large proportions, and when issued will be a very valuable addition to our literature on Lepidoptera, and undoubtedly the finest work at a low price that has yet appeared. It will, I believe, contain over 1,500 insects illustrated in color, besides hundreds of cuts, the color plates covering all known genera.

Our Society seems to be on a sure foundation, a great interest being taken as shown by the attendance during the past summer, which has averaged over 20 present at our regular monthly meetings.

At each meeting the members have submitted specimens of some selected genus for comparison and discussion, which has added largely to the interest and profit of our meetings.

F. A. MERRICK, *Secretary.*

The 28th regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of June 10, 1902, President Bolster presiding. The report of the Committee on Field Day was presented and accepted. A Library Committee was appointed. Mr. Newcomb gave an account of the larval habits of *Achatodes zeæ* Harris.

The 29th regular meeting of the Harris Club was held on the evening of October 14. President Bolster again in the chair. Miss Margaret Sutermeister and Mr. Wm. T. Buxton were elected to active membership. Mr. Ralph Hoffmann gave an illustrated talk on the Inter-adaptation of Flowers and Insects. Mr. Newcomb gave an account of his recent collecting trip in Colorado, and exhibited specimens obtained by him for Mr. A. G. Weeks, Jr. Messrs. Rogers, Plummer and Field reported having seen specimens of *Vanessa milbertii* on the wing near Boston during October. Mr. Buxton showed a peculiar *Pyrameis* from Bangor, Me. Mr. W. D. Denton exhibited magnificent examples of *Papilio homerus* and *Ornithop-*

tera paradisea. Mr. Field reported the occurrence of *Papilio cresphontes* in Alstead, N. H. The insect was seen by Mr. Douglas G. Field on June 12; it was a fine fresh specimen. The same observer also met with the hybrid *Basilarchia archechippus* Scudder in East Alstead, N. H., on July 19. He was unable to capture either insect, having no net. Two specimens of the kind last mentioned have been taken previously in the same locality. Mr. Field also commented on the unusual abundance of Katydids in the region just South of Boston during the latter part of September. Mr. Rogers reported the capture of a second specimen of *Pieris protodice* in Medford, Mass., the first having been taken in 1901. Mr. King exhibited some interesting scale insects.

W. L. W. FIELD, *Secretary*.

The thirtieth regular meeting of the Harris Club was held at 35 Court Street, Boston, on the evening of November 11, 1902. President Bolster in the chair.

The Library Committee presented its report, which was accepted.

Mr. Field made some remarks on the *Gregarina* inhabiting the intestine of the larva of *Tenebrio*. Mr. Sampson exhibited an aberrant *Limenitis arthemis* and a still more aberrant *Phyciodes*, possibly *tharos*. Mr. Low showed a specimen of *Philampelus vitis* taken in Jamaica Plain, Boston. Mr. Osgood has the same species from Hampton Beach, N. H.

Mr. A. J. Lewis was elected Curator of Photographs. A vote of thanks was extended to Mr. George B. King for his gift of separates of his published papers.

W. L. W. FIELD, *Secretary*.

A meeting of the American Entomological Society was held October 23. The President, Dr. Calvert, in the chair. Fourteen persons were present. Mr. J. C. Bradley stated that Mr. Viereck had given to him a new species of the genus *Dyscidopus* from Vancouver. The genus had heretofore only been known from Brazil. He also spoke of a specimen of *Anagrus* given him for study by Dr. Calvert. The structure of the wings was described and illustrated. The possibility of its

being an introduced species from the fact of it having been found in the Botanical Garden of the University of Pennsylvania was discussed. The speaker said it may be an aquatic species. Mr. Rehn said he had been working on the local Orthoptera. Outside of material from Castle Rock, Lehigh Gap and North Mountain, Penna., there had been practically no collecting done. It is greatly to be desired that collections in the State be made with accurate data, and he hoped to do some work in this line during the coming season, and wished that the members of the Society and others would aid in the work. Mr. Daecke exhibited Diptera new to the New Jersey list. The new fly records were *Siphosturmia rostrata*, *Phorocera lucaniæ*, *Empis humilis*. Dr. Calvert exhibited a series of specimens of dragonflies of the genera *Paraphlebia* and *Palæmnema* which showed similar coloration of the wings in a striking manner.

HENRY SKINNER, *Secretary*.

A meeting of the Entomological Section of the Academy of Natural Sciences was held September 25. Dr. Calvert, in the absence of the Directors, presiding. Eleven persons were present. Mr. Daecke spoke of the efficacy of a saturated solution of Sodium sulphite in preventing trouble from the red-bug *Leptus irritans*, as suggested by Dr. Skinner. The skin should be made wet with the solution before going into the field. It is also useful in allaying the irritation after the pests have buried themselves in the skin. He also reported *Mutilla carniceps* (det. Fox) from DaCosta, N. J., July 20. It is a rare species. A larva supposed to be that of *Ptynx appendiculatus* was mentioned. The species had been feeding since Spring on caterpillars. It would not take many other insects. Mr. Huntington reported the capture of *Lepidophora ægeriiformis* at Lehigh Gap, on July 20. Mr. Daecke took it at DaCosta, N., J., July 28. Mr. Rehn spoke of the Academy Expedition to New Mexico. The work was done in and at the base of the Sacramento Mountains. At Alamogordo, plain and canon work were both done. The difference between the fauna of the plain and that of the canons was described. The collecting was all

done within a radius of twenty miles. The highest elevation (9000 ft.) was at Cloudcroft. The Orthoptera only have been completely studied and there are three new forms. Some interesting material was captured at light, including a rare, recently described roach. Recent work in the Jersey bogs was described. He found that the grass-hoppers of the bog were boreal, those of the pine-barrens Southern in character. *Trimerotropis citrina* was found at Lehigh Gap, Pa., making the third record East of the Mississippi. Dr. Calvert showed two specimens of Hymenoptera, Mymaridæ, under the microscope. He referred to the peculiar appearance of the wings, which look somewhat like paddles with long fringes. The insects flew into a window at the Biological Hall, University of Pennsylvania. The larvæ are probably parasitic on the eggs of other insects.

HENRY SKINNER, *Recorder.*

The fifth regular quarterly meeting of the California Entomological Club was held on the evening of August 16, at the residence of James Cottle, 1520 Pacific Avenue, San Francisco.

President Charles Fuchs in the chair.

Eight members responded to roll call.

Dr. H. J. Simpson, of Napa, interested in General Entomology, and Mr. Wm. Chapman, of Napa, interested in Diptera, were elected to membership.

Officers for the ensuing year were then elected : Chas. Fuchs, President ; H. C. Fall, Vice-President ; F. E. Blaisdell, Secretary and Treasurer.

President Fuchs then addressed the Club, reviewing the progress of the Society made during the past year, and stated that it was already well known upon the Pacific Coast and in the East. He then referred to his meeting with Prof. Schaupp in 1878 while out collecting—of the friendship that was formed, and the starting of the Brooklyn Entomological Society. Mr. Fuchs spoke of the advantages and value of Entomological Societies ; of the work done in the East by Dr. E. C. Vandyke, and the great aid his studies and observations on the Eastern collections would be to the Entomologists of the Pacific Coast ; of the energetic endeavors of Mr. Letcher, and the result of his

collecting in the vicinity of Mt. Shasta, and his promptness in response to aid his fellow Entomologists in their endeavors to advance our knowledge of the Pacific Coast fauna; also the work done by Mr. James Cottle in Siskiyou County; and the work done in collecting Coleoptera and Hymenoptera about Napa by Mr, F. C. Clark.

The visit of Dr. Walther Horn, of Berlin, and his researches in the Cicindelidæ, and the aid received from him in arranging our collections in that family, were referred to and fully appreciated and acknowledged; the visit of Prof. Kincaid, of the University of Washington, State of Washington, was spoken of, and that he desired to become a co-worker in the Club, called up the advisability of extending the limits of the Club so as to include all of the Pacific Coast. President Fuchs concluded by calling upon the members for their opinion of extending the Club limits.

After discussion it was voted to change the name of the Club to the Pacific Coast Entomological Society, and that members be enrolled from any part of the Coast.

Mr. Letcher then spoke upon the advisability of devising a plan for selling insects, the proceeds of which to be applied to the purchase of Entomological publications for the Society. It was suggested that the exchange might be made direct, of the insects for the publications. A committee was appointed to report at the next meeting.

It was then decided to purchase a mimeograph for printing copies of the proceedings of the Society, so that distant members could be kept in touch with the Society.

Mr. Nunenmacher spoke of a collecting trip that he anticipated and his willingness to collect in the different orders for members of the Society, his special interest being centered in the Coccinellidæ.

Mr. Cottle exhibited a beautiful series of *Pseudohazis eglanterina* taken near Upper Soda Springs, Siskiyou County. The series included forms ranging from *denudata* to *shastensis*; also specimens of *Sphinx sequoiæ* collected in the same locality.

Social discourse. Adjournment.

F. E. Blaisdell, *Secretary.*