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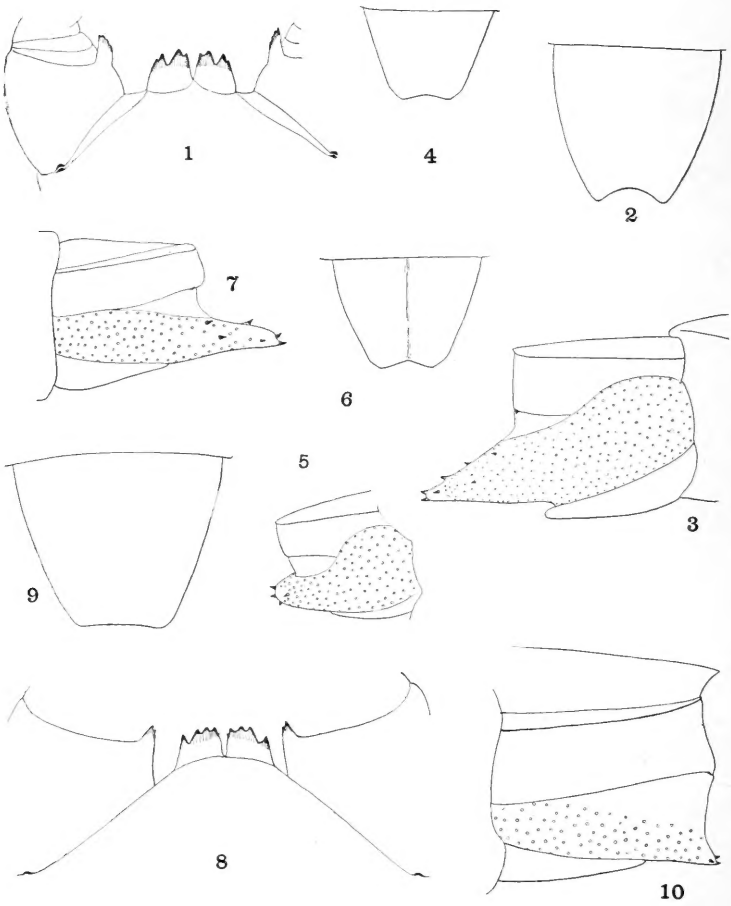

NEW EAST INDIAN CHILOPODS—CHAMBERLIN.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XXV. NOVEMBER, 1914. No. 9.

CONTENTS:

Notes on Chilopods from the East Indies.

By RALPH V. CHAMBERLIN, Cambridge, Mass.

(Plate XVII)

The following chilopods were secured by Dr. Thomas Barbour, of the Museum of Comparative Zoology, during his trip in the East Indies and neighboring parts, 1906-1907, incidentally to his other collecting. All of the specimens, including the types of the four new species here described, are deposited in the Museum at Cambridge.

SCOLOPENDROIDEA.

CRYPTOPIDAE.

1. **Otocryptops melanostomus** (Newport).

Locality.—Java: Tjibodas.

This species is widely distributed in the tropics of the entire earth.

OTOSTIGMIDAE.

2. **Otostigmus punctiventer** (Tömösvary).

Locality.—Dutch New Guinea: Sorong.

The single specimen obtained is variant in having three lat-

eral spines on the coxopleural process (with two dorsal) and in having the median pits of the sternites of the middle region of the body very weak. The species was previously known from Borneo and New Britain.

3. **Otostigmus nemorensis** Silvestri.

Locality.—Java: Buitzenzorg.

A number of specimens were obtained. In all of these the last ventral plate is clearly narrowed caudad, being less quadrate than would be inferred from the accounts of Silvestri and Kraepelin. The species was previously known from Sumatra.

4. **Otostigmus barbouri** sp. nov. (Pl. XVII, figs. 1-3).

Dorsum olive green, with the head and prosternum a little more brownish. Venter paler and less greenish than the dorsum. Legs greenish distad of the prefemora.

Head shining. Distinctly punctate, as is also the first dorsal plate. Unfurrowed.

Antennae composed of 20 articles. The proximal 2 1-3 articles glabrous and shining; the others densely clothed with fine short hairs of the usual type.

Dental plates of prosternum moderately long. Teeth 4 plus 4; the inner pair and the outer pair on each side separated by a wider and deeper interval than that between the members of each pair; the most ectal tooth much smaller than the adjoining one, as is also, though less so, the most mesal.

Dorsal plates from the fourth to the twentieth longitudinally bisulcate, the sulci fine but distinct, excepting on the fourth plate, where they are less pronounced at ends. Plates of the middle and caudal regions of body with a flat, inconspicuous or often obscure median keel, but with no lateral keels whatsoever. Plates from the ninth to the twenty-first distinctly margined; the seventh and eighth also with margins less sharply set off by longitudinal depressions; the twenty-first plate most sharply margined. Plates of the middle and caudal regions weakly longitudinally rugose at sides and finely sparsely scabrous, the minute spinous points becoming more distinct caudad.

Last dorsal plate with the median keel obscurely indicated on the anterior two-thirds of length, the keel being followed caudad by a moderate longitudinal depression. Caudal margin obtusely angular, mesally a little rounded.

Ventral plates distinctly subdensely punctate. Those from the second to the nineteenth inclusive with distinct traces of longitudinal

sulci, these being evident only across the anterior borders in the anterior region of body, but in the middle and caudal regions extending to the middle of plates. None of the sternites with any distinct pits or depressions.

Last ventral plate strongly narrowed caudad; sides convex; caudal margin deeply subangularly excurved. Smooth, without furrows.

First seven pairs of legs with 2 tarsal spines; the eighth to twentieth inclusive with one.

Coxopleural process moderately long, ending in 2 stout points; bearing in addition either 1 or 2 dorsal spines and 3 lateral. (See Fig. 3.)

Prefemur of anal legs with 4 spines in the ectal ventral series and 3 in mesoventral series, 5 more occur in a series at or a little ventrad of the middle of the ventral surface, and dorsomesally are 2 in addition to the spine at the distal corner. Other joints unarmed.

Length, 43 mm.

Locality.—Dutch New Guinea: Sorong.

Two specimens.

This species seems to be closest to *O. spinosus* Porat of Java and Borneo. Among the various differences, it is readily to be distinguished from that species through the absence of the characteristic spinae on the prefemur of the twentieth legs.

5. **Otostigmus malayanus** sp. nov. (Pl. XVII, figs. 4, 5).

Dorsum brown, tinged with dilute bluish green; a deeper narrow bluish green band along the middle of caudal margin of each plate. Head and, to a less extent, the first dorsal plate a little paler and less greenish. Antennae pale. Legs somewhat testaceous, tinged with bluish green distad, the green more pronounced in the caudal pairs.

Head and first dorsal plate subdensely but not coarsely punctate. Otherwise smooth.

Articles of antennae 21, of which only the first 2 to 2 1-3 are glabrous and shining.

Prosternal teeth 4 plus 4, the two most mesal on each side largest, a minute denticle at edge of mesal incision on each side, including which the teeth number 5 plus 5. Lines setting off dental plates meeting at an obtuse angle. Process of prefemur with two denticles on mesal side below apex.

Dorsal plates from the fifth on and somewhat obscurely also the third and fourth, with mostly 7 more or less clearly defined longitudinal keels which are not sharp edged. Keels, especially caudad, finely but neither finely nor especially conspicuously scabrous. Plates from the third caudad distinctly and sharply margined, the raised edge thin.

Last dorsal plate parallel-sided; rather sharply bowed out caudad,

without keels or cornicles. A very short but sharply impressed median longitudinal furrow immediately cephalad of the caudal margin.

Ventral plates with two distinctly impressed longitudinal sulci which in the anterior region mostly cross the entire plate but caudad may extend only one-half to three-fourths the length. Without pits; but some of the plates showing a transverse depression or furrow between the middle and the caudal margin.

Last ventral plate strongly narrowed caudad. Caudal corners obliquely excised. Caudal margin incurved.

First 15 pairs of legs with 2 tarsal spines; sixteenth to nineteenth with 1 tarsal spine; the twentieth with none.

Coxopleural process short, subtriangular; terminating in 4 points or spines. A single lateral spine; none dorsally.

Length about 27 mm.

Locality.—Malay Peninsula: Johore State.

(Taken January 10, 1907.)

This species stands closest to *O. scaber* Porat, occurring in China, Siam and the Nicobars, and *O. insularis* Haase, known from Ceylon and the Seychelles. From the former it is readily separated in having 2 tarsal spines on the first 15 pairs of legs instead of on the first 7 only, etc.; and from the latter in having no tarsal spine on the twentieth legs, in having fewer pairs with 2 tarsal spines, in having the antennae 21-jointed, etc.

6. **Otostigmus moluccanus** sp. nov. (Pl. XVII, figs. 6, 7).

Olivaceous, with the head and first few plates somewhat paler.

Head and first dorsal plate finely and uniformly punctate.

Articles of antennae 18. The first 2 or 2¼ glabrous and shining.

Dental plates moderately long, the lines setting them off meeting at an angle. Teeth 3 plus 3, of which the outermost on each side is separated by a wider and deeper interval from the median one, than the latter is from the most mesal, the median and most mesal being fused nearly to their apices.

Dorsal plates from third to fifth caudad margined. A median keel only obscurely indicated. Lateral portion of plates in caudal region weakly longitudinally rugose; only finely and weakly scabrous.

Last dorsal plate subangularly bowed out, with a conspicuous median longitudinal depression immediately in front of the caudal margin.

Ventral plates with distinct paired longitudinal sulci extending mostly about two-thirds the length of the plate or very nearly so. In addition to the paired sulci there is a median longitudinal sulcus or furrow distinctly impressed on the anterior portion of the plate, espe-

cially in the anterior and middle region of the body, but tending to be reduced to an indistinct impressed dot caudad. Plates punctate.

Last ventral plate strongly narrowed caudad. Caudal margin conspicuously and somewhat angularly incurved. A weak median longitudinal sulcus.

Only the first 5 pairs of legs with 2 tarsal spines.

Coxopleural process long and subcylindrical, ending in 2 points. Lateral spines 3, of which the two most proximal are larger than the distal one. Also with 1 stout dorsal spine. (See Fig. 7.)

Length, cir. 20 mm.

Locality.—Moluccas: Ternate. One specimen.

This species appears to be nearest in structure to *O. punctiventer* (Tömösvary), above listed. It differs from that species in having the last ventral plate more conspicuously narrowed caudad; in the longer and more strongly marked sulci of the ventral plates; and in various minor points.

7. **Trematophychus immarginata** (Porat).

Locality.—Upper Burma: Katha and Tagourg (December 19 and 20, 1906). Java: Buitzenzorg.

This species is widely distributed in the East Indies and adjacent lands, having been reported previously from Sumatra, Borneo, India and the Philippines.

8. **Trematophychus longipes** (Newport).

Locality.—Java: Buitzenzorg.

This species is distributed throughout the tropical regions of both hemispheres.

9. **Ethmostigmus rubripes** (Brandt).

Locality.—Dutch New Guinea.

Also known from Australia, Java, Thursday Islands and China.

10. **Ethmostigmus cribrifer** (Gervais).

Localities.—Moluccas; Ceram Is.; Wahaai; Halmaheira Is.; Sain.

Originally described from this same general region.

SCOLOPENDRIDAE.

11. **Scolopendra morsitans** Linné.

Localities.—Dutch New Guinea. Java: Buitzenzorg.

A cosmopolitan species.

12. **Scolopendra subspinipes** Leach.

Localities.—Dutch New Guinea: Manokwari and Sorong.

13. **Scolopendra subspinipes dehaani** Brandt.

Locality.—Java: Buitzenzorg.

Four very large specimens were secured at this place.

14. **Scolopendra gracillima** Attems.

Localities.—Java: Buitzenzorg. Moluccas: Ceram Is., Wahaai.

Originally described from Java, heretofore the only known locality.

15. **Trachycormocephalus indiae** sp. nov. (Pl. XVII, figs. 8-10).

Brown; with a somewhat obscure slightly greenish dark median longitudinal band along the dorsum, the band being about one-third the total width of plates; each plate with a narrow stripe of much deeper greenish color along caudal margin, this being the width of the longitudinal band; the longitudinal band widens across the first plate and embraces the entire head which is distinctly greenish in color. Antennae green. Legs testaceous, the last pair tinged with green.

Head subcordate, conspicuously narrowed cephalad. Smooth, not punctate; a distinct transverse furrow a little in front of the caudal margin; on each side a V-shaped impression with apex at transverse furrow, the inner arm extending a little distance cephalad parallel with its fellow of the opposite side and the outer arms diverging ectocephalad; two short submedian parallel longitudinal furrows between the V-shaped impressions; all these impressions rather weak.

Antennae composed of 18 articles. Short, reaching to or a little caudad of the middle of the third pediferous segment. The 3-5 proximal articles nearly glabrous; the fifth to seventh or eighth somewhat intermediate; the others fully clothed.

Dental plates of prosternum long, each bearing 4 distinct, subacute teeth or with a small fifth tooth at mesal end. Of these teeth the most ectal is a little more widely removed than the others are from each other, the latter being more or less fused at bases. Line setting off dental plates subsemicircular.

Dorsal plates from the third to the twentieth inclusive longitudinally bisulcate, the sulci all complete and distinct. Only the twenty-first plate distinctly margined.

Last dorsal plate with caudal margin subsemicircular or bow-shaped. With a distinct and complete median longitudinal sulcus.

Ventral plates from the second to the twentieth inclusive bisulcate; otherwise nearly smooth.

Last ventral plate conspicuously narrowed caudad. Sides straight or nearly so. Caudal margin nearly straight or but slightly incurved, with the corners a little rounded.

First 19 pairs of legs with a tarsal spine. All legs, including also the anal, with spines at base of claws, those of claw of last pair very small.

Coxopleurae but slightly extended at caudomesal corner, the very short process distally rounded and bearing 3 points or spines. A single small spine laterad of process on caudal margin.

Anal legs short. The prefemur twice as long as greatest thickness or very nearly so. Prefemur bearing ventrally an ectal row of 2 spinules, a submedian one of 3 and an inner or mesal one of 2; dorsomesally a series of 3 spinules; the corner process at distal end bearing 2 or 3 spinules. Other articles unarmed. The claw with small fine spines at base.

Length, 22-23 mm.

Locality.—India: Jeypore (November 8, 1906). Two specimens.

The separation of this species from the two previously described may be made as follows:

a. The last dorsal plate with a distinct and complete median longitudinal sulcus.

b. Claw of anal legs without basal spines, dorsal plates from seventeenth to nineteenth caudad margined; antennae with 19 articles ..... *T. mirabilis* (Porat)

bb. Claw of anal legs with distinct basal spines; only the twenty-first dorsal plate margined; antennae 18-jointed, *T. indiae* sp. nov.

aa. The last dorsal plate without a median longitudinal sulcus. Antennae 17-jointed; only the twenty-first dorsal plate margined; claw of anal legs with basal spines.... *T. afer* (Meinert)

GEOPHILOIDEA.

Mecistocephalidae.

16. **Mecistocephalus punctifrons** Newport.

Localities.—Java: Batavia. Upper Burma.

This is proving to be a common form in the warmer parts of both hemispheres.

Oryidae.

17. **Orphnaeus brevilabiatus** (Newport).

Locality.—Java: Buitzenzorg.

Common in the warmer parts of America as well as throughout the East.

SCUTIGEROMORPHA.

SCUTIGERIDAE.

18. **Thermopoda** sp.

One young specimen apparently belonging to this genus. It is lacking the head, making further identification impossible.

EXPLANATION OF PLATE XVII.

Otostigmus barbouri sp. nov.

Fig. 1. Portion of prosternum and prehensors showing dental plates.
Fig. 2. Last ventral plate.
Fig. 3. Lateral aspect of the twenty-first segment, showing coxopleura.

Otostigmus malayanus sp. nov.

Fig. 4. Last ventral plate.
Fig. 5. Lateral aspect of twenty-first segment, showing coxopleura.

Otostigmus moluccanus sp. nov.

Fig. 6. Last ventral plate.
Fig. 7. Lateral aspect of twenty-first segment, showing coxopleura.

Trachycormocephalus indiae sp. nov.

Fig. 8. Portion of prosternum and prehensors showing dental plates.
Fig. 9. Last ventral plate.
Fig. 10. Lateral aspect of twenty-first segment, showing coxopleura.

Insects found on Nursery Stock Imported into New Jersey during 1913.

By HARRY B. WEISS, in Charge of Nursery and Imported Stock Inspection, New Brunswick, N. J.

The inspection of imported stock is primarily of course for the purpose of preventing the introduction and spread of insects and diseases not already established. According to the report of the Federal Horticultural Board by C. L. Marlatt, there were imported into the United States in 1912 44,781 cases of nursery stock, of which amount about one-fifth entered the State of New Jersey.

A list of the insects, therefore, which were imported on stock entering New Jersey during the year 1913 should not be without interest to those engaged in inspection work in other States. As a rule, one is not aware during the inspection seasons of what is taking place in other States and it seems that

some system of co-operation, whereby the different inspectors could be informed of such happenings, would be of value in putting one on his guard, at least with respect to some species. By consulting the charts, one can get an idea of the proportion

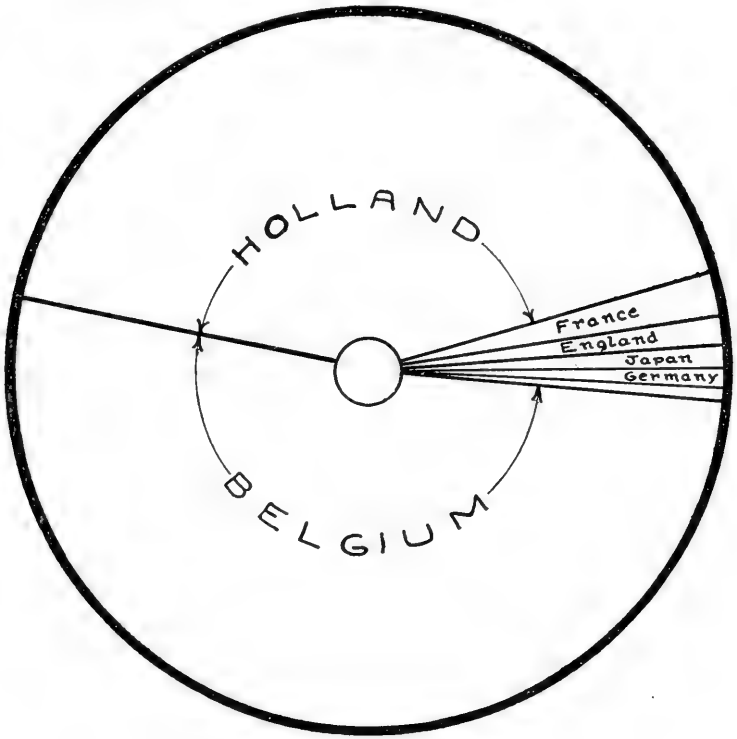

CHART I.—Importations of Nursery Stock into New Jersey, Spring of 1913. 6600 parcels.

of stock received from various European countries, Holland and Belgium being by far the largest exporters, at least into New Jersey. The narrow blank sector in each circle represents the amount of stock from all other foreign countries.

The majority of the stock coming from Holland consists of boxwood, evergreens, fruit trees, roses and deciduous plants; from Belgium we get palms, bay trees, azaleas, rhododendrons and shade trees; from France, shrubs, fruit stock, evergreens;

from Germany, greenhouse stock, evergreens, fruit trees, roots; from England, roses and fruit trees; from Scotland, roses and rhododendrons; from Ireland, roses; from Japan, evergreens, fruit stock, miscellaneous plants. Belgium occupies the largest space on both charts by reason of the numerous shipments of bay trees, palms and azaleas which come from that country.

During the spring the following species were intercepted:

Pseudaonidia paeoniae Ckll., on azaleas from Japan; *Pseudococcus azaleae,* on azaleas from Japan; *Parlatoria pergandei* Ckll., on maples from Japan; *Diaspis pentagona,* on *Prunus persica* from Japan; *Aspidiotus hederae* Vall., on bay trees from Belgium; *Aspidiotus britannicus* Newst., on bay trees from Belgium; *Coccus hesperidum* Linn., on bay trees from Belgium.

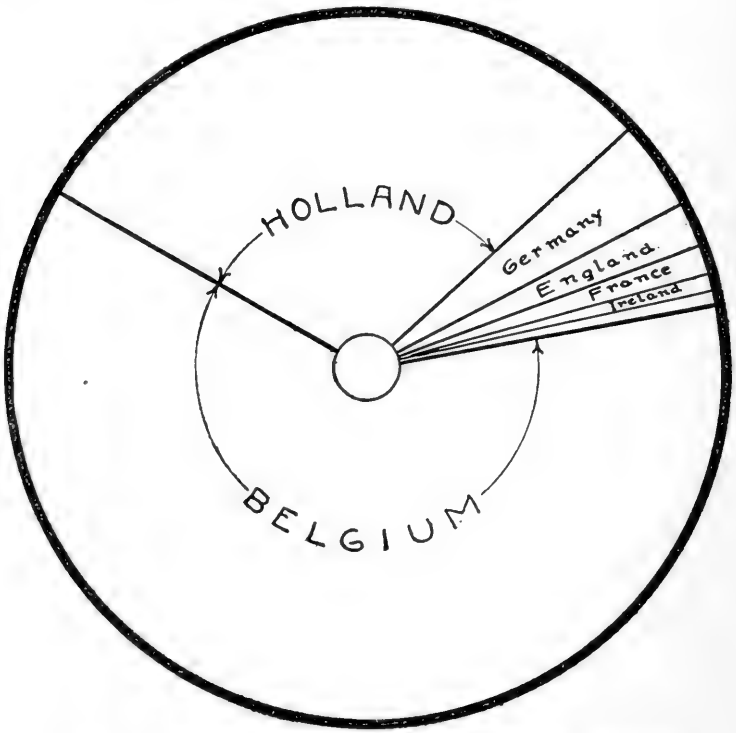

CHART II.—Importations of Nursery Stock into New Jersey, Fall of 1913. 5600 parcels.

During the fall the shipments infested were as follows:

Aleyrodes sp., on thirty-one shipments azaleas, Belgium; *Aleyrodes* sp., on one shipment azaleas, Holland; *Aleyrodes* sp., on one shipment aucubas, Holland; *Aleyrodes* sp., on one shipment bouvardias, England; *Lepidosaphes ulmi* Linn., on fourteen shipments boxwood, Holland; *Tingitidae,* eggs, on one shipment of rhododendrons, Belgium; *Coccus hesperidum* Linn., on nine shipments bay trees, Belgium; *Pseudococcus* sp., on five shipments palms, Belgium; *Pseudococcus* sp., on two shipments bays, Belgium; *Pseudococcus* sp., on one shipment *Metrosideros,* Belgium; *Pseudococcus* sp., on one shipment bamboo canes, England; *Chrysomphalus aonidum* Linn., on one shipment palms, Belgium; *Chrysomphalus dictyospermi* Morg., on one shipment palms, Belgium; *Aspidiotus britannicus* Newst., on one shipment bays, Belgium; *Aspidiotus hederae* Vall., on one shipment bays, Belgium; *Aspidiotus hederae* Vall., on one shipment oleanders, Belgium; *Aspidiotus hederae* Vall., on one shipment palms, Belgium; *Aspidiotus hederae* Vall., on one shipment *Yucca tricolor,* England; *Diaspis boisduvalii* Sign., on one shipment orchids, England; *Hemichionaspis aspidistrae* Sign., on one shipment ferns, Belgium; *Hemichionaspis aspidistrae* Sign., on one shipment ferns, England; *Macrosargus cuprarius,* on one shipment azaleas, Belgium; *Peronia* sp., on one shipment azaleas, Belgium; *Gracilaria* sp., on one shipment azaleas, Belgium; *Acanthia saltatoria* Linn., on azaleas from Belgium, Det. Dyar.; *Gracilaria azaleae* Busck., on azaleas from Belgium, Det. Busck.; *Peripsocus* sp., on bay trees from Belgium, Det. Banks; *Apion ulicis* Forster, in seed pods of *Ulex europea,* from England, Det. Pierce.

Mr. C. L. Marlatt and Mr. E. R. Sasscer identified most of the scale insects, Mr. Busk the *Peronia* and *Gracilaria* sp., and Mr. Walton, *Macrosargus cuprarius.* Practically all of the insects, with the exception of the *Aleyrodes* sp., which happens to be new, are more or less distributed in the United States. This, however, is no excuse for allowing them to enter in abundance. The infested plants received during the spring from Japan were destroyed, while the bay trees were cleaned by the consignees before being sold. In most cases the fall infestations were not serious, *Coccus hesperidum* and *Aleyrodes* sp. being the most numerous. During the entire year no brown-tail nests or gypsy moth egg masses were noted.

A New Genus of Chalcidoid Hymenoptera of the Family Cleonymidae from Australia.

By A. A. Girault.

The following genus belongs to the Cleonyminae.

EPICAUDONIA new genus.

Female.—With the build of *Epistenia* Westwood, but the abdomen noncarinated along each side, the second, sixth and seventh segments longest. Head rather large, the antennae 13-jointed, inserted in the middle of the face, three ring- and club-joints, the first funicle joint elongate. One mandible 4-dentate (other not seen). Parapsidal furrows four-fifths complete. Scutellum simple. Pronotum transverse, the propodeum without a median carina but with a fovea more than halfway to the round-oval spiracle from the meson at cephalic margin. Postmarginal vein three-fourths or more the length of the marginal, the stigmal about half the length of the marginal. Like *Caudonia* Walker otherwise. Anterior femora distinctly swollen, the posterior still much more so, but neither of them excised nor dentate. Wings subhyaline, the infuscation very faint or totally absent. Stigmal knob small.

Male.—Not known.

Type.—The following species.

1. **Epicaudonia scelestus** n. sp.

Female.—Length, 3.90 mm.

Dark metallic green, the mesothorax with rather inconspicuous pubescence somewhat like that of *Catolaccus*. Tegulae, venation, trochanters, knees, tarsi, scape, pedicel and joints 2 and 3 of funicle reddish brown; antennae black; tips of tibiae white. Thorax finely reticulately punctate (including the propodeum). Legs concolorous. First club joint forming half of that region, the distal funicle joint distinctly longer than wide but less than half the length of the first, joints 2 and 3 subequal, 4 about equal in length to the pedicel. The three ring-joints large.

Described from one female captured by sweeping in a jungle, July 26, 1913.

Habitat.—Meerawa (Cairns District), Queensland.

Type.—In the Queensland Museum, Brisbane, the above specimen on a tag, a fore and hind leg and the head on a slide.

Catalogue of the Membracidae of Uruguay (Hemip., Homop.).

By Frederic W. Goding, Guayaquil, Ecuador.

The Membracidae are insects belonging to the order Hemiptera, sub-order Homoptera, which includes the Cicadidae, Fulgoridae, Cercopidae, Psyllidae, Aphididae and Coccidae. As a general rule they are easily separated by the well-developed prothorax into a multitude of shapes and forms.

To facilitate the identification of the different species found in Uruguay, the following synoptic table has been prepared:

1 (28). Tibiæ simple, not broadened or flattened.
2 (15). Third apical area of tegmina elongate, base truncate, never petiolate .....Subfamily Darninae.
3 (8). Posterior process covering all or nearly all of tegmina; destitute of horns; convex, smooth, median carina obsolete.
4 (7). Form robust; ocelli distinctly nearer to each other than to the eyes.
5 (6). Lateral yellow border of prothorax originating behind eyes, extends nearly to apex, and occupies nearly half of sides of prothorax .....*Stictopelta latilinea.*
6 (5). Lateral yellow border of prothorax originating behind humeral angles, terminates at apex of posterior prothoracic process, occupying very narrow edge....*Stictopelta limbata.*
7 (4). Form slender; ocelli nearly equi-distant from each other and the eyes .....*Cryptoptera acutula.*
8 (3). Tegmina almost wholly uncovered.
9 (14). Corium of tegmina with two discoidal areas.
10 (11). Prothorax elevated in front, armed with a sharp horn extended outward above each humeral angle; ocelli nearer to each other than to the eyes .....*Pyranthe acaciae.*
11 (10). Prothorax depressed in front, armed in front with a horn turned downward; ocelli nearer to the eyes than to each other.
12 (13). Front horn obtuse at apex, not spatulate, median carina of which is much more elevated than lateral edges; upper surface of horn not bi-sulcate .....*Argante incumbens.*
13 (12). Front horn broadly spatulate at apex, its median carina equal to elevation of lateral edges forming on each side a distinct longitudinal sulcus .....*Argante tremolaris.*
14 (9). Corium of tegmina with one discoidal area; prothorax unarmed, with a median carina, posterior process acute,
Smiliorhachis proxima.

15 (2). Third apical area of tegmina triangular, base petiolate, Sub-Family SMILIINAE.

16 (27). Tegmina free; posterior process of prothorax narrow behind humeral angles.

17 (26). Base of tegmina emitting two longitudinal veins; five apical areas, three discoidal areas.

18 (19). Posterior process of prothorax 3-forked; apical areas of wings stylated .....*Cyphonia clavigera.*

19 (18). Posterior process of prothorax simple, not 3-forked; armed above each humeral angle with an acuminate horn; front elevated .....Genus *Ceresa.*

20 (21). Humeral horns and apex of posterior prothoracic process ferruginous; frequently a fuscous spot on costa near apex of tegmina .....*Ceresa uruguayensis.*

21 (20). Humeral horns concolorous, or apex and below fuscous.

22 (25). Apex of humeral horns directed outward and backward.

23 (24). Humeral horns strong; front of prothorax convex between humeral horns; ocelli distinctly nearer to each other than to the eyes .....*Ceresa pauperata.*

24 (23). Humeral horns slender, very acute, a little recurved; front of prothorax distinctly convex between humeral horns; ocelli nearly equi-distant from each other and eyes, *Ceresa brunnicornis.*

25 (22). Apex of humeral horns directed distinctly outward, forward and upward, concave between .....*Ceresa cavicornis.*

26 (17). Base of tegmina emitting three longitudinal veins, four apical and one discoidal areas in corium; dorsum of prothorax convex, posterior process acuminate; size small, *Acutalis variabilis.*

27 (16). Tegmina almost wholly covered by posterior prothoracic process, with two longitudinal veins, two or three discoidal areas, interior basal area very broad, *Phormophora arechavelata.*

28 (1). Front tibiæ dilated, flattened, foliaceous, Sub-family MEMBRACINAE.

29 (30). Prothorax compresso-elevated, produced in front in a horn, gently decreasing in altitude backward, horn with a lateral carina on each side in anterior superior part which does not extend behind humeral angles, summit foliaceous; four small carinae on each side of median carina on under surface of horn .....*Enchophyllum imbelle.*

30 (29). Prothorax tricarinate, lateral carinae extended at least to lateral borders behind humeral angles; front produced in a high angle or horn .....*Enchenopa monoceros.*

Subfamily SMILIINAE.

Genus **Cyphonia.**

1832. Laporte, Ann. Soc. Ent. Fr. Ser. 1, p. 229.

C. clavigera Fabr. Syst. Rhyng. p. 17. 1803.

A single example is in the National Museum of Uruguay, labeled "Uruguay." It is also found in Paraguay and Brazil.

Genus **Ceresa.**

1843. Amyot et Serv. Hemip. p. 539.

C. brunnicornis Germ. Silb. Rev. Ent. III, p. 236. 1835.

Two examples are in the Uruguayan National Museum collection, labeled "Uruguay."

C. pauperata Berg. Add. et Emend. Hemip. Argent. p. 149. 1884.

There are three examples in the Uruguayan National Museum collection. It feeds on *Acacia farnesiana* Willd. in Uruguay.

C. uruguayensis Berg, Add. et Emend. Hemip. Argent. p. 148. 1884.

Very similar to *ustulata* Fairm., from which it may be separated by the more slender horns above the humeral angles, the greenish coloring and the fuscous spot on the apex of the tegmina. It lives on *Acacia farnesiana* Willd. and has been taken at Canelones and on the Corralito River in Uruguay. Three examples are in the Uruguayan National collection.

C. cavicornis Stal, Freg. Eug. Resa. Ins. p. 284. 1859.

This species is not represented in the Uruguayan National collection. Stal received it from Montevideo.

Genus **Acutalis.**

1846. Fairm. Ann. Soc. Ent. Fr. Ser. 2, IV, p. 241.

A. variabilis Berg, Hemip. Argent. p. 244. 1879.

This species, not represented in the Uruguayan National collection, closely resembles *plagiata* Fairm. It differs from that species in its larger size, apex of posterior process not black, and absence of the reddish markings on the prothorax. It differs from *anticonigra* Fairm. in the very faint lateral prothoracic impression, in the venation of the tegmina, and in the fuscous spot on the head.

Habitat.—Uruguay.

Genus **Phormophora.**

1869. Stal, Hem. Fab. II, p. 28.

P. arechavaleta n. sp.

Testaceous, densely punctured; median carina nearly obsolete; a broad, diagonal stripe on each side behind humeral sinus, lateral borders from sinus posteriorly, and a spot on each tegmen in front of middle, yellow; sides of chest, and sometimes spots on posterior process of prothorax, tarsi, costa, two longitudinal veins, and veins surrounding fourth apical area, ferruginous; basal half of costal and interior basal areas, and large part of apex of tegmina, fuliginous.

Long. 7, lat. inter hum. ang. 3 mm.

Described from four females; *types* in Uruguayan National collection and in collection F. W. G.

Hab.—Uruguay.

The fourth and fifth apical areas united equal width of the broad interior basal area; whereas, in *maura* Fab., the only other member of the genus, the same space is occupied by the fifth area alone; also the third apical area is not small, as in *maura*, but is of the usual size and rather long and narrow.

The examples in the Uruguayan National collection are labeled "*Darnis amargosi* Berg," which doubtless is a manuscript name as no description seems to have been published. It feeds on *Syringium* sp. in February.

Pupa.—There is in the Uruguayan collection one example of the pupa of this species, badly mutilated, the body missing; but, as descriptions of pupae of this family are rarely published, the following has been prepared.

Testaceous, mottled with ferruginous, pubescent; head similar to the mature insect, but more rugose; prothorax dome-like, deeply excavated at base in the middle, on each disc of which it has several black spots; dorsum highly elevated and rugose, with a deep impression on each side in front; posterior edge extending towards the summit, on each side, suddenly extending backward in a triangular shape, on the top with three large longitudinal fuscous marks; the apex of the triangle nearly reaches the base of abdomen; at the summit is a crest-like foliation resembling a cock's comb, red, extending forward; the metathorax is exposed behind the posterior border of the prothorax. The wing pads are strong, flat, and joined together, over the abdomen, by a broad flat membrane. Abdomen is exposed, along its median

line on the dorsum, is a line of small tubercles, one on each segment.

The pupa is about half the size of the adult.

I take great pleasure in naming this interesting species after the distinguished botanist and director of the National Museum of Uruguay, recently deceased, who was the father of the study of natural history in Uruguay. The Flora Uruguayensis will cause Dr. Arechavaleta's name to be respected for all time.

Subfamily DARNINAE.

Genus **Stictopelta.**

1869. Stal, Hemip. Fabr. II, p. 32.

S. latilinea Walker, List Hom. Brit. Mus. Suppl. p. 147. 1858.

There are two examples in the Uruguayan National collection, labeled "Uruguay"; Walker's material was received from Constancia, Province of Rio, Brazil.

S. limbata Burm. in Silb. Rev. Ent. IV, p. 173. 1836.

Four examples are in the Uruguayan National collection, from Uruguay.

Genus **Cryptoptera.**

1869. Stal, Hemip. Fab. II, p. 32.

C. acutula Fairm. ibid. p. 481. 1846.

Although this genus is widely distributed from Mexico to the River Plate, *acutula* is the only species so far found here. The two examples in the Uruguayan National collection are smaller than Fairmaire's type, but otherwise agree with his description.

Hab.—Uruguay. Also Mexico, Panama, Brazil (Fowler).

Genus **Pyranthe.**

1867. Stal, Ofv. Vet-Ak. Forh. p. 558.

P. acaciae Berg, Add. et Emend. Hemip. Argent. p. 152. 1884.

It is closely related to Stal's *bimaculata* and *laticornis*, but differs from both in the robust, acuminate humeral horns which are directed a trifle upward and backward.

Berg describes the larva which, with the mature insect, is found on *Acacia farnesiana* Willd. The Uruguayan National collection possesses one female.

Hab.—Uruguay.

Genus **Argante.**

1867. Stal, Ofv. Vet-Ak. Forh. p. 558.

A. incumbens Germ. in Silb. Rev. Ent. III, p. 239. 1835.

A series of eight examples are in the Uruguayan National collection, from Uruguay. It is found in the month of May, on the leaves of *Eryngium agavifolium* Grb.

A. tremolaris n. sp.

Black, smaller, more depressed, and much more slender than *incumbens*. Head broad, short, apex rounded transversely, much retracted forming a sharp edge; ocelli pale, between themselves and the eyes doubly distant; punctured. Prothorax armed in front with a strong, dependent, curved horn extending forward and downward which is broadly spatulate at apex; the spatulate apex is furnished with a well marked median carina; the edge on each side is elevated which forms a deep channel on each side; median carina prominent to a line passing between humeral angles, thereafter nearly obsolete, the lateral carinæ also extending to humeral angles; prothorax convex, laterally somewhat depressed or flattened; posterior process broad at base, convex, gradually decreasing in breadth to apex which extends a trifle beyond tip of abdomen, strongly punctured. Tegmina rather narrow, blackish brown almost to extremities, where they are narrowly yellowish white and transparent; wings have four apical areas, base of second truncate. Legs concolorous, front tibiæ not dilated. Female similar to male, larger, and median carina percurrent.

Long. from apex of front horn to extremity of tegmina 8, lat. inter hum. ang. 2 mm.

Described from one male and four females.

Types in Uruguayan National collection, and coll. F. W. G.

Hab.—Piriapolis, Uruguay. Collector, J. Tremolares. Feeds on *Syringium* sp.

This species differs from *incumbens* in the absence of a median carina on the posterior prothoracic process of the male, broad spatulate form of the apex of the front horn, in the elevated lateral edges toward the apex which equal the median carina; in the tegmina being very narrowly white at extremities, and black base of clavus.

So long ago as the year 1835 Germar, and later Berg, mentioned the spatulate form of the front horn in some of the examples labeled *incumbens*, and doubtless had one of this

species before them at the time. It is altogether a more slender insect.

This species is dedicated to Senor J. Tremolares, late subdirector of the National Museum of Uruguay, who, almost alone, is keeping up an interest in the entomology of Uruguay. He is now on the staff of the Uruguay Geological Survey.

Genus **Smiliorhachis.**

1846. Fairm. ibid. p. 290.

S. proxima Berg, Add. et Emend. Hemip. Argent. p. 154. 1884.

No examples of this species are in the Uruguayan National collection; but the type was taken in Uruguay. It is close to *variegata* Fairm. and *octolineata* Stal. It differs from the former by the design of the prothorax and color of the tegmina; from the latter in its smaller size, absence of eight lines, and color of the tegmina. It is found in November, on *Acacia farnesiana* Willd.

Hab.—Uruguay (Berg).

Subfamily MEMBRACINAE.

Genus **Enchophyllum.**

1843. Amyot et Serv. Hem. p. 534.

E. imbelle Stal, Ofv. Vet-Ak. Forh. p. 271. 1869.

It is not represented in the Uruguayan National collection.

Hab.—Montevideo, Uruguay. (Arechavaleta.)

Genus **Enchenopa.**

1843. Amyot et Serv. Hem. p. 535.

E. monoceros Germ. in Mag. Ent. IV, p. 28. 1824.

The Uruguayan National Museum possesses four examples. It feeds on *Acacia farnesiana* Willd.

Hab.—Uruguay.

The entomology of Uruguay is well represented in the collection of the National Museum of Uruguay, where the insects are well taken care of. It is to be hoped that arrangements will soon be made for the correct identification of the material not already determined by the late zoologist, Senor J. Tremolares.

New Species of North American Dolichopodidae (Diptera).

By M. C. Van Duzee, Buffalo, New York.

Systenus americanus n. sp.

Male: Length 3.2 mm. Face covered with white pollen; proboscis and palpi black; front metallic bluish-green, more blue in the center, rather long on account of the antennæ being inserted so low down on the head; antennæ black, the third joint more brown, first and second joints short, third joint long and flattened, about the length of the front; arista terminal, stout, fully one-half as long as the third joint; cilia of the upper orbit black, of the lateral and inferior orbit white.

Dorsum of the thorax and the scutellum dark metallic blue-green, bright but somewhat dulled with almost invisible brown pollen; pleuræ darker-colored than the dorsum and with gray pollen.

Abdomen metallic green, more bronze black on the dorsum towards the apex; hypopygium large, black, the peduncle about as long as the diameter of the hypopygium, and forming a sort of slender seventh segment to the abdomen, being concolorous with it; hypopygium with a small black appendage ciliate with brown hairs on the outer surface near the tip; outer lamellæ yellow, somewhat sickle-shaped with a crooked spine at the base of the bend.

Coxæ and legs black; fore and middle coxæ with white hairs on the front surface, those on the fore pair long and abundant; hind coxæ with a white bristle and several long white hairs on the outer surface; femora with a greenish reflection; the fore pair with a fringe of long white hairs on the lower outer edge; trochanters and knees yellowish; bristles of the tibiæ small; hind metatarsi two-thirds as long as the second joint. Tegulæ, their cilia and the halteres yellow.

Wings tinged with blackish; fourth vein bent forward near the middle of the last section, but parallel with the third vein toward the tip, and ending in the apex of the wing.

Described from one male from the Black Mountains, North Carolina, May (collection of Mr. Nathan Banks).

Gymnopternus flaviciliatus n. sp.

Male: Length 3 mm. Face covered with silvery-white pollen; front blackish with white pollen, which appears brown when viewed from above; antennæ of moderate size, yellow, third joint slightly darkened at apex, somewhat rounded at the tip.

Dorsum of the thorax dark blue-green almost black, thickly covered with brown pollen; scutellum bronze-brown with a central longitudinal ridge.

Abdomen bronze-green with white pollinose spots on the sides of segments three and four; venter, extreme lateral edges of the dorsum of the abdomen, and the epimera metathoracica yellow; hypopygium black with pale yellow lamellæ which are ciliate with yellow hairs.

Coxæ yellow, the middle pair slightly darkened on the outside; fore and middle coxæ with black hairs and bristles on the front surface; hind coxæ with an erect bristle on the outside; the usual row of bristles on the fore tibiæ rather stout, fore tibiæ also with two or three longer bristles on the upper surface; middle and hind tibiæ with stout bristles. Halteres and tegulæ yellow, the latter with black cilia.

Wings grayish hyaline; veins dark brown, yellow at the root of the wing.

Female: Agrees with the male in all but sexual characters.

Described from fourteen males and seven females, taken at Spring Creek, Decatur County, Georgia, July 16th to 29th, by Dr. J. C. Bradley and Mr. M. D. Leonard.

This species runs to *G. ventralis* in the keys, but can be distinguished from that species by the lamellae of the hypopygium being ciliate with yellow hairs, while in *ventralis* the ciliae are black; the hypopygium is also a little smaller, the antennae a little more pointed, and the pollen on the sides of the abdomen forms distinct spots on the sides of the third and fourth segments, while in *ventralis* it is more evenly distributed.

Leucostola terminalis n. sp.

Female: Length 4.75 mm. Face wide, thickly covered with white pollen; palpi large, whitish with black hairs; front black shining, dulled with gray pollen; antennæ yellow, third joint short, brown except the base; arista dorsal; cilia of the upper orbit black, of the lateral and inferior orbit white; postvertical bristles stout, black.

Dorsum of the thorax bright metallic green with broad reddish coppery stripes on the sides above the root of the wings, and two fine coppery lines one on each side of the acrostichal bristles; these lines are easily overlooked; dorsum with white pollen along the front and lateral edges; pleuræ black with thick white pollen, and with the posterior edges yellow.

Abdomen with the first three segments yellow; the narrow hind margins of these segments and the whole of the fourth and fifth metallic green with coppery reflections and covered with white pollen.

Coxæ yellow, fore pair with a row of five long black bristles on the front surface towards the tip; middle pair black on the outer surface

and with long black hairs on the front surface; hind coxæ with an erect bristle on the outer surface; legs yellow; fore and middle tarsi darkened towards the tip; tips of the hind tibiæ and hind tarsi brown. Tegulæ and halteres yellow, the former with white cilia.

Wings hyaline, strongly tinged with yellowish brown, and with yellowish brown veins.

Described from one female taken by Mr. Nathan Banks at Great Falls, Virginia, June 21st.

This species can readily be recognized by its yellow antennae and also by the conspicuous coppery spots above the roots of the wings.

Thinophilus frontalis n. sp.

Male: Length 6 mm. Face wide, dark metallic green, with coarse brownish yellow pollen along the sides below, the portion below the suture nearly one-half as long as the upper portion and with a longitudinal ridge; palpi very large, reddish yellow, each as large as the face and covered with coarse black hairs; front broader than the face, widest at the vertex; ocellar tubercle prominent, a carina from this tubercle to the eye margin where the outer vertical bristles are inserted and forming an excavated basin above the antennæ, the outer upper corner of which is reddish coppery, the center violet, and the sides green; front with only a little brownish-yellow pollen near the antennæ; antennæ yellowish below, brownish above, first joint bare above, second as long as the first and as broad as long, third very short with the arista inserted at the base above; orbital cilia black above, yellowish below.

Dorsum of the thorax metallic black with violet reflections, polished, with a central green vitta which reaches the scutellum; scutellum concolorous with this vitta; a deep black spot above the root of the wing; dorsum with coarse yellowish-brown pollen; scutellum with two large and two small marginal bristles; pleuræ blackish-green with thick yellowish-gray pollen.

Abdomen metallic green, with six visible segments, the sixth as long as the others, the incisures bronze-black; abdomen dusted with gray pollen which is thickest along the lower lateral edges; hypopygium small, partly imbedded, rounded behind, with two pairs of long, thick, black lamellæ, which reach the ventral hind margin of the fifth segment, this margin projecting somewhat below and with a pair of black spine-like bristles.

Coxæ black with yellow tips and thick gray pollen; fore and middle pairs with black bristles on the front surface; middle and hind coxæ each with a large black bristle on the outer surface; femora yellow; fore and middle pairs with black hairs below, the former with four

black bristles near the tip on the lower outer edge; hind pair slightly darkened above at tip; fore tibiæ brown with three bristles below, close to the tip; middle and hind tibiæ black; fore and middle tarsi yellow with all the joints black at the tip; hind tarsi black with the first and second joints equal; pulvilli and empodium well developed. Tegulæ, their cilia and the halteres yellow.

Wings grayish-hyaline, brown in front of the third vein; fourth and fifth longitudinal veins and the posterior cross-vein bordered with brown; last section of the fourth vein slightly approaching the third at tip; there is an upward sinus at the center of the last section of the fourth vein.

Female: Agrees with the male in all but sexual characters, except that the palpi are blackish, with white pollen and yellow edges, and the thorax is more thickly covered with pollen. There are six dorsocentral, one large and one small humeral, a post-humeral, one notopleural, two supraalar and one postalar bristles, also one or two small presutural bristles; on the prothorax there is a transverse row of yellowish bristles, those near the fore coxæ large, but those on the dorsal part of the row small. In the male (which I make the type of the species) all the bristles are missing from the mesonotum and scutellum although the specimen is in good condition otherwise.

Described from one male and one female which I took on a salt-marsh on the Manatee River at Bradentown, Florida, in March.

Why do Honey-Bees Discriminate Against Black? (Hym.)

By John H. Lovell, Waldoboro, Maine.

There has long been a widespread belief among apiarists that a beekeeper will receive more stings when dressed in black than when wearing white clothing. A large amount of evidence has been published in the various bee journals showing beyond question that honey-bees under certain conditions discriminate against black. A few instances may be cited in illustration. Of a flock of twelve chickens running in a bee-yard seven black ones were stung to death, while five light-colored ones escaped uninjured. A white dog ran among the bee-hives without attracting much attention, while at the same time a black dog was furiously assailed by the bees. Mr. J. D. Byer, a prominent Canadian beekeeper, relates that a black

and white cow, tethered about forty feet from an apiary, was one afternoon attacked and badly stung by bees. On examination it was found that the black spots had five or six stings to one on the white. All noticed this fact, although no one was able to offer any explanation. A white horse is in much less danger of being stung, when driven near an apiary, than a black one. It has, indeed, been observed repeatedly that domestic animals of all kinds, if wholly or partially black, are much more liable to be attacked by bees, if they wander among the hives, than those which are entirely white.

Many beekeepers have reported that a dark suit always receives more stings than a white one; and a well-known Canadian apiarist will not permit any of his assistants to work in his apiary unless wearing light-colored clothing. A black felt hat will be "literally decorated with stings," while a gray hat will not get a single sting. A dozen bees will follow the black glass head of a hat-pin all over the bee-yard, jabbing viciously at it. Mr. E. R. Root, editor of *Gleanings in Bee Culture,* after relating his personal experience, adds that so much proof has been adduced to show that bees will sting black more than white that he does not see how the fact can be questioned.

Bee-keeping in the Transvaal, South Africa, is carried on in a very careless manner, and as a result bees belonging to neighboring apiaries not infrequently attempt to rob each other. Among the stock lost in one instance, when the bees went on the rampage, were black pigs, fowls and a black dog; while a buff-colored dog on the premises did not receive a single sting. In another instance 29 black fowls and a black and white cow were killed by the bees. There were nine Buff Orpinton fowls in the yard with the others, which were very carefully examined after the fray, but only three stings were found on them, while the dead black fowls were literally covered with stings. (*Gleanings in Bee Culture*, 41, 612.)

The observations recorded are from very widely separated localities, and were described by apiarists of very extensive experience, while the apparent antipathy of bees to black was very pronounced. But the instances cited occurred for the

most part incidentally to the regular routine work of the apiary and hitherto little or no endeavor has been made to test the matter experimentally. The following series of experiments, therefore, were performed for this purpose.

On a clear, warm day in August I dressed wholly in white with the exception of a black veil. Midway on the sleeve of my right arm there was sewed a band of black cloth ten inches wide. I then entered the bee-yard and, removing the cover from one of the hives, lifted a piece of comb with both hands and gently shook it. Instantly many of the bees flew to the black band, which they continued to attack as long as they were disturbed. Not a single bee attempted to sting the left sleeve, which was of course entirely white, and very few even alighted upon it.

This experiment was repeated a second, third and fourth time; in each instance with similar results. I estimated the number of bees on the band of black cloth at various moments was from thirty to forty; it was evident from their behavior that they were extremely irritable. To the left white sleeve and the other white portions of my clothing they paid very little attention; but the black veil was very frequently attacked.

A few days later the experiments were repeated, but the band of black cloth, ten inches wide, was sewed around my left arm instead of around the right arm as before. When the bees were disturbed, after the hive cover had been removed, they fiercely attacked the band of black cloth as in the previous experiences; but the right white sleeve and the white suit were scarcely noticed. At one time a part of the black cloth was almost literally covered with furiously stinging bees, and the black veil was assailed by hundreds. The bees behaved in a similar manner when a second hive on the opposite side of the apiary was opened.

A white veil, which had been procured for this purpose, was next substituted for the black veil. The result was most surprising, for, whereas in the previous experiments hundreds of bees had attacked the black veil, so few flew against the white veil as to cause me no inconvenience. Undoubtedly beekeep-

ers will find it greatly to their advantage to wear white clothing when working among their colonies of bees and manipulating the frames of the hives.

It has been suggested that possibly a white band on a black dress might be attacked in the same manner as a black band on white apparel. To test the matter by experiment I entered the apiary dressed in a black suit with a band of white cloth, six inches wide, around my right sleeve. Three hives were opened in succession, and in each case a throng of angry bees endeavored to sting the black clothing but scarcely noticed the white band.

It is not the quality of the material which irritates the bees since they will attack a band of black paper, so smooth that they cannot cling to it, as fiercely as a band of black cloth. They have likewise been seen to discriminate against black felt, feathers, hair and glass.

Experiments were also made with four spectrum colors. When yellow and green bands were successively substituted for black, the bees paid absolutely no more attention to these colors than if they had been white. A blue band irritated the bees a little more than white, but very much less than black. There were never more than four or five attempting to sting this color at the same moment. A red cloth band, on the contrary, was attacked almost as fiercely as black, although less persistently. Throughout all the experiments with the various colors the white suit and veil attracted the notice of the bees only to a very small extent.

I have no theory to offer in the present paper in explanation of the behavior of the bees toward black and white and the spectrum colors, but should be pleased to have an expression of opinion from the readers of ENTOMOLOGICAL NEWS. I would premise, however, that black *per se* does not appear to irritate the bees, since they do not attack a black garment thrown over a hive, or suspended from a pole in the apiary. They only discriminate against black when it is worn by an animal or human being which appears to threaten the safety of the colony.

Dragonflies (Odonata) collected in Texas and Oklahoma.

By E. B. Williamson, Bluffton, Indiana.

During part of May and June, 1907, Dr. D. A. Atkinson and Mr. G. A. Link, of Pittsburg, and the writer collected in Texas and Oklahoma. The first two named gave their attention to herpetological material, while I collected dragonflies. In addition to the material collected at this time, I later obtained specimens collected in Oklahoma in August and September, 1907, by Frank Collins, a boy with whom I became acquainted at Wister; and also specimens from Mr. C. A. Hart, of the University of Illinois, collected at Brownsville, Texas, November 25, 1910.

A brief itinerary of our collecting trip follows:

May 11, 1907, arrived at Brownsville, Texas.

May 12, spent most of the day at Isabel on the coast and later in the day about the fort at Brownsville.

May 13, above Brownsville along Alice road.

May 14, drove to Mercedes via Santa Maria, where we ate dinner; returned to Brownsville at 2.30 A. M., May 16.

May 16, en route St. L. B. & Mex. R. R. to section house at Black Bayou, where the railroad crosses the Guadalupe River, Texas.

May 17, at cypress swamp on left bank of river, along the river, and along a small tributary on right bank just above railroad bridge.

May 18, about shallow, marshy lake south of railroad track, on the right of the river, and about one mile from the section house. (See under May 21.)

May 19, same as May 17.

May 20, about lake north of section house and on the left side of the river. (See under May 21.)

May 21, same as May 18.

The two lakes or ponds mentioned above (May 18 and May 20) are entirely different in character. The one south of the track is in grass and alder country, and dragonflies of several

species were numerous. About this lake cotton-mouth snakes were uncomfortably numerous in the alders. The lake north of the track lies in a more barren country, is surrounded with bulrushes, and fairly teems with alligators. Neither bulrushes nor alligators were noticed at the other lake. When we were at this north lake dragonflies were very rare, excepting *Brachymesia gravida*, of which there were a great many teneral individuals. Snakes were very numerous (we caught 57 large ones one day), but no cotton-mouths were seen. In one day we caught 39 alligators, one of them over 9 feet in length. Alligator paths were everywhere through the tall bulrushes, and the large alligators were in holes and burrows among these rushes, while the small alligators lay in the mud in shallow water about the edges of the lake. Large handsomely colored bullfrogs were also taken in considerable numbers at this lake, but were not seen at the other.

May 22, about Black Bayou, near the section house, and later at the lake visited May 20.

May 23, about Black Bayou and in railroad cut near it, and *en route* to Bay City, Texas.

May 24, at pools along St. L. B. & Mex. R. R. and along Colorado River, near Bay City.

May 25, at Matagorda, along shore and along river.

May 26, at Williams Lake, reached by driving from Bay City. A beautiful small lake which would well repay careful and prolonged collecting.

May 27, pools along railroad near Bay City, and in evening to Clifton, Texas.

May 28, rained all day.

May 29, along North Bosque River above Clifton.

May 30, along river below Clifton.

May 31, along very small stream on left bank of river above Clifton.

June 1, same as May 31.

June 2, *en route* to Wister, Oklahoma.

June 3, about artificial lake along railroad about 1½ miles north of Wister.

June 4, same as June 3.

June 5, along stream west of Wister, and packing to return home.

Most of my material was papered. A few vials of alcoholic material were collected and sent to Dr. Calvert, who identified and reported on this material in a letter to me. The larvae and exuviae collected have not been studied, and the following records refer only to imagos.

Six papers have been published which mention material collected for this paper. They are:

1. A New Dragonfly (Odonata) belonging to the Cordulinae, and a revision of the classification of the subfamily. E. B. Williamson. *Ent. News,* Nov., 1908, pp. 428-434.

2. The North American Dragonflies (Odonata) of the genus *Macromia.* E. B. Williamson. *Proc. U. S. Nat. Mus.,* Vol. 37, Dec., 1909, pp. 369-398.

3. Studies in *Tetragoneuria* (Odonata). R. A. Muttkowski, *Bull. Wis. Nat. Hist. Soc.,* Vol. IX, July, 1911, pp. 91-134.

4. *Hetaerina titia* and *tricolor* (Dragonflies—Odonata). E. B. Williamson. *Ent. News,* March, 1912, pp. 98-101.

5. The dragonfly *Argia moesta* and a new species (Odonata). E. B. Williamson. *Ent. News,* May, 1912, pp. 196-203.

6. *Gomphus pallidus* and two new related species (Odonata). E. B. Williamson. *Ent. News,* Feb., 1914, pp. 49-58.

Species Collected.

1. **Hetaerina americana.**

Texas: Clifton, May 29, 30 and 31; 65 ♂, 33 ♀.

Oklahoma: Wister, Aug. 4 (Collins), 19 ♂, 11 ♀.

2. **Hetaerina titia.**

Texas: Black Bayou, May 17 and 19, 12 ♂, 4 ♀, several of them teneral; Bay City, May 24, teneral ♂; Clifton, May 30, 2 ♂.

Oklahoma: Wister, Aug. 1-6 (Collins), 18 ♂.

This species has been discussed in the paper No. 4 above listed.

3. **Lestes alacer.**

Texas: Bay City, May 24, 1 ♂; May 27, 4 ♂ in alcohol, det. Calvert.

4. **Lestes simplex.**

Texas: Clifton, May 31, 2 ♂, 2 ♀. These specimens seem distinct from *alacer,* and I believe are *simplex.*

5. **Lestes sigma.**

Texas: Black Bayou, May 18 and 21, 1 ♂, 1 ♀.

Several individuals were seen, but all flew at once back into the dense alder thickets, where the collector must follow often on hands and knees, and where brush prevented the use of the net even if approach to the wary and restless dragonfly was possible. Add to these difficulties the fact that the poisonous and sluggish cotton-mouth snakes were common at the same places where the *Lestes* occurred, and some idea of the labor and excitement involved in the capture of these dragonflies may be grasped. The two specimens I succeeded in collecting are identical with specimens from the interior of Guatemala (Gualan) taken under easier circumstances in June, 1909.

6. **Lestes inequalis.**

Oklahoma: Wister, June 3 and 4, 1 ♂, 2 ♀; several seen, but they were very wary and active, escaping in vegetation.

7. **Argia tibialis.**

Texas: Black Bayou, May 17, 1 ♂ in alcohol, det. Calvert.

Oklahoma: Wister, June 3 and 4, and Aug. 2 (Collins), 6 ♂, 3 ♀; 3 pairs and 3 ♂ in alcohol, det. Calvert.

8. **Argia moesta.**

Texas: Bay City, May 24, 2 ♂, 2 ♀; Clifton, May 28 and June 1, 16 ♂, 9 ♀.

Oklahoma: Wister, June 3, and Aug. 2 and 4 (Collins), 7 ♂.

9. **Argia intruda.**

Oklahoma: Wister, Aug. 2 and 4 (Collins), 15 ♂, 17 ♀.

10. **Argia translata.**

Texas: Clifton, May 30 and 31, and June 1, 24 ♂, 2 ♀; 3 pairs and 3 ♂ in alcohol, det. Calvert.

11. **Argia sedula.**

Texas: Brownsville, May 13, 2 ♂ in alcohol, det. Calvert; Black Bayou, May 17, 19 and 22, 4 ♂; 8 ♂ in alcohol, det. Calvert; Matagorda, May 25, 1 ♂; Williams Lake, May 26, 2 ♂; Clifton, May 29, 30 and 31, and June 1, 47 ♂, 7 ♀; 4 pairs and 9 ♂ in alcohol, det. Calvert.

12. **Argia apicalis.**

Texas: Brownsville, May 13, 3 ♂, 1 ♀ in alcohol, det. Calvert; Black Bayou, May 17, 19 and 21, 1 ♂; 2 ♂ and 1 pair in alcohol, det. Calvert; Bay City, May 24 and 27, 4 ♂; Williams Lake, May 26, 1 ♂; Clifton, May 29, 30 and 31, and June 1, 4 ♂, and 3 ♂, 1 ♀ in alcohol, det. Calvert.

Oklahoma: Wister, June 4 and Aug. 2 (Collins), 8 ♂, 1 ♀.

13. **Argia vivida.**

Texas: Clifton, June 1, 1 ♂ in alcohol, det. Calvert.

14. **Argia immunda.**

Texas: Clifton, May 29, 30 and 31, and June 1, 61 ♂, 5 ♀; 6 ♂, 1 ♀ in alcohol, det. Calvert.

The antenodal cells in both front and hind wings were counted for all the papered material with the following result: *Front wing,* 2 antenodal cells, 1 wing; 2½ antenodal cells, 1 wing; 3 antenodal cells, 115 wings; 3+ antenodal cells, 1 wing; 4 antenodal cells, 4 wings; total, 122 wings.

Hind wing, 2 antenodal cells, 5 wings; 2½ antenodal cells, 1 wing; 3 antenodal cells, 113 wings; 3+ antenodal cells, 2 wings; 4 antenodal cells, 1 wing; total, 122 wings.

The 5 ♀ have 3 antenodal cells in every case.

15. **Argia violacea.**

Texas: Clifton, June 1, 2 ♂.

Oklahoma: Wister, June 3 and 4, 3 ♂; 1 ♂ in alcohol, det. Calvert.

(To be continued)

A Note on the Abundance of the Thistle Butterfly, Pyrameis cardui (Lepid.).

Recently I made a trip to Buttonwillow in the southern part of the San Joaquin Valley, California, to make some investigations concerning a band of about 400 head of California elk (*Cervus nannodes* Merriam) that ranges over the 500,000-acre ranch of Messrs. Miller and Lux, the well-known cattle company. Two days (April 24-25) were spent on the ranch. When hunting for the elk we drove with a team of horses around in various and devious ways, through the immense fields of alfalfa, oats, barley and yellow mustard, across irrigating ditches, and over greasewood plains. The days were bright and sunny, and many things unique and of great interest were noted, but I shall at this time tell of only one of them, namely, the marvelous abundance of a certain species of butterfly, the Thistle Butterfly or Painted Lady, *Pyrameis cardui* Linnaeus.

As we drove through the fields of yellow mustard these beautiful butterflies flew up in front and on either side of us literally *by the thousands.* There must have been millions of them; they were everywhere in the fields, and the fields contained hundreds of acres. With a net one could have obtained several in one cast. I never saw anything like it, not even among grasshoppers in Kansas in 'hopper years.

I have understood, of course, that *Pyrameis cardui* is one of the most widely distributed butterflies, and that, in many places, it is an abundant species, but I never dreamed any butterfly was so marvelously abundant anywhere. What a fine field Buttonwillow would be for anyone to visit who cared to study individual variation in this beautiful and interesting species!—Barton W. Evermann, California Academy of Sciences, San Francisco.

A new Genus of Platygasteridae from Australia (Hymen.).

By Alan P. Dodd, Nelson, via Cairns, Queensland, Australia.

Trichacoides nov. gen.

♀ (?). Head rather wide, a little wider than the thorax; eyes moderately large, bare; ocelli rather close together, very far distant from the eye margins. Antennae 10-jointed, scape rather long, pedicel slender; first funicle joint much narrower and shorter than the pedicel; second distinctly longer and wider than the first; the others gradually widening towards the apex, all distinctly longer than wide. Thorax twice as long as wide; pronotum visible from above on the sides only; mesonotum longer than wide; parapsidal furrows distinct, almost joining at the posterior edge of the mesonotum; scutellum not much lengthened, a little longer than wide, rounded posteriorly, raised from the mesonotum, convex, covered with dense, rather short, sharp spines. Forewings reaching apex of abdomen; broad; veinless. Abdomen as long as the head and thorax combined; as wide as the thorax; fusiform; first segment a little wider than long, second segment equal to one-half the abdominal length, distinctly longer than wide. Legs moderate; tarsi 5-jointed.

A genus distinguished by the peculiar, thorny scutellum.

Type.—Trichacoides scutellaris described herewith.

Trichacoides scutellaris sp. nov.

Female (?).—Length, 2.20 mm. Shining black; legs (including coxae) and first six antennal joints golden yellow.

Head and mesonotum with fine polygonal scaly sculpture. Abdomen with first and base of second segment striate; rest of abdomen smooth. Forewings hyaline; marginal cilia rather short; discal cilia moderately coarse and dense.

(From 1 specimen, 2-3 inch objective, 1 inch optic, Bausch and Lomb.)

Habitat.—North Queensland (Nelson, near Cairns). Described from one ♀ (?) caught by sweeping grass along streamlet in forest, August 7, 1913 (A. P. Dodd).

Type.—In the South Australian Museum, a ♀ (?) tag-mounted plus a slide bearing antennae and forewings.

ENTOMOLOGICAL NEWS.

PHILADELPHIA, PA., NOVEMBER, 1914.

Sanitation in Vera Cruz, Mexico.

Statements have been recently received from Vera Cruz which show considerable improvement in the general health of the community there. There was a marked reduction in the civil death-rates per thousand of population, per annum. During June and July, 1913, the mortality was 39.55, and during the same months this year the mortality was 32.29. During the latter period there were 161 deaths from communicable diseases. What concerns us most in this report, is that in large part, these diseases may be transmitted by insects. Those known to be thus conveyed, entirely or in part, are malaria, typhoid fever, dysentery, tuberculosis and enteritis. The statement has been made that mosquito-breeding has been largely suppressed and that twenty-five miles of ditches have been dug and miles of vacant lots and hundreds of acres of swamps drained. Dysenteries and diarrhoeas have been brought under control and foodstuffs protected from flies by appropriate screening.

The significant fact is that the work has been properly and efficiently done and the result apparent. By contrast let us look at the conditions in places not in Mexico. Perhaps in the majority of large cities in the United States these conditions are the same as in Philadelphia, where many kinds of food are exposed to street dirt and insects, particularly house-flies. We have laws against the exposure of food substances to flies and street dirt and dust, but the lawyers tell us the laws can't be enforced. The writer of this statement sees, each day, basketfuls of fruit, to be retailed, exposed on the sidewalk, dusted off with a filthy brush, and large quantities of apples, polished with a dirty rag.

The brush removes enough dessicated horse-manure and dried tubercular sputum to render the fruit less unsightly and the rag removes most of the fly-excrement from the apples. The brushings are needed several times a day, particularly during dry weather, when clouds of street filth are wafted into the air.

It is a curious attitude toward things, that in Cuba, Mexico and Panama preventive medicine has reached a high degree of efficiency, while in most municipal governments in the United States it is at a very low ebb.—H. S.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

The Collection of the Late G. W. Kirkaldy.

The collection of the late G. W. Kirkaldy has come into my hands. From letters to me it would appear that there is some loaned material contained therein. If the lenders will communicate with me, I shall return whatever of this loaned material may still be in existence.—J. R. de la Torre Bueno, 14 Dusenbury Place, White Plains, New York.

Changes of Address.

J. E. Hallinen *from* Cooperton, Kiowa Co., Oklahoma, *to* Interlaken School, Rolling Prairie, Indiana.

Fordyce Grinnell, Jr., *to* Southwest Museum, Marmion Way and Avenue 46, Los Angeles, California.

W. R. McConnell *from* Greenwood, Mississippi, *to* Hagerstown, Maryland.

J. Percy Baumberger *from* 791 Buena Vista Avenue, San Francisco, Calif., *to* Bussey Institution, Forest Hills, Boston, Mass. (where he is taking graduate work in Entomology).

H. A. Horton *from* McPherson, Kansas, *to* Turner, Oregon.

Victor E. Shelford *to* Department of Zoology, University of Illinois, Urbana, Illinois.

Henry L. Viereck *to* California State Insectary, Commission of Horticulture, Sacramento, California.

Richard F. Pearsall *to* Allaben, Ulster Co., New York.

Cimex pipistrelli Jenyns in North America? (Hemip. Heter.)

In Entomological News for May, 1914, I notice an article on page 230, by Mr. J. R. de la Torre Bueno, regarding certain European Heteroptera whose occurrences in North America are questioned. Among the species listed is *Cimex pipistrelli* Jenyns.

Several years ago a Silver-haired Bat, *Lasionycteris noctivagans* (LeConte), taken at Lincoln, Nebraska, came into my hands, and from it I secured a specimen of a *Cimex* which I identified as *pipistrelli*. This specimen I compared later with another, labeled *C. pipistrelli*, which was loaned by Prof. C. P. Gillette, of Fort Collins, Colorado, and which proved to be conspecific with mine. Both of these agreed well with the descriptions of the species in question given by Professor Herbert Osborn, on pages 162 and 163 of Bulletin 5 of the U. S. Bureau of Entomology, which descriptions include a copy of the original one by Jenyns. It is possible that these descriptions are

not complete enough in detail for the separation of *C. pipistrelli* and any parallel but distinct species which may occur in North America, but I have always been of the belief that the North American form was not distinct; at best I believe that it will prove to be not more than a variety of the typical form, although I have never had the opportunity to compare specimens from both continents to make certain of this point.

My specimen of this bat-infesting bug is deposited in the collection of the University of Nebraska at Lincoln, and I do not have the exact data here at hand, but I submit this note for what it may be worth.—JOHN T. ZIMMER, Manila, P. I.

Theses on Entomology in American Universities, 1914.

According to *Science* for August 21, 1914, the degree of Doctor of Philosophy was conferred, during the present year, on the following persons who presented entomological theses.

Cornell University: Lucy Wright Smith, Studies of North American Plecoptera (Pteronaricinae and Perlodini); Ruby Green Smith, The Evolution of the Venation in the Anal Area of the Wings of Insects.

Harvard University: Rudolf William Glaser, Caterpillar Diseases, with Especial Reference to the Wilt of Gypsy Moth Caterpillars; Axel Leonard Melander, A Taxonomic Study of the Empididae, a Family of Dipterous Flies; Bradley Merrill Patten, A Quantitative Determination of the Orienting Reaction of the Blowfly Larva (*Calliphora erythrocephala* Meigen) to Light.

University of Illinois: Stanley Black Fracker, The Classification of Lepidopterous Larvae.

The Johns Hopkins University: William Lee Dolley, Reactions to Light in *Vanessa antiopa*, with Special Reference to Circus Movements.

Notes on Calligrapha sigmoidea Lec. (Coleop., Chrysomelidae).

I herewith present some notes and observations on the collecting of *Calligrapha sigmoidea* Lec. in the suburbs of San Francisco, on the Sunnyside Hills, at an elevation of 500 feet, for three consecutive winters, 1910, 1911 and 1912.

On February 26th, 1910, three specimens were collected; March 11th, seven; April, nine; December 7th, three; December 18th, six; January 3rd (1911). five; February 15th, four; February 20th, five; March 12th, nine; March 21st, eight; April 11th, five, and two larvæ were seen but not collected, the weather was fine but slightly cold. On April 19th, two imagos and one larva about two weeks old were observed, weather very fine and warm. April 29th, one imago and two larvæ observed; May 9th, one imago; weather fine. On June 1st

and 12th, none; the food plant—wild hollyhock (*Sidalcea malvaeflora*) plants—all dried up. July 8th, none; September 15th, none; October 28th, none; November 16th, none, hollyhock plants not out yet; November 28th, none; December 9th, none, the weather very hot; December 20th, none, and the food plant not out yet; January 29th (1912), fourteen imagos observed, the weather very fine and warm; February 14th, six imagos seen but not collected, weather fine; May 17th, eight imagos seen but not taken. After March 17th, 1912, I did not visit the locality again.

It therefore appears that *Calligrapha sigmoidea* is a winter and spring species. I have found the eggs, and young larvæ hatching in the winter and spring months. I also do not believe that the imagos observed were the hibernating individuals that were coaxed out by the fine weather during the months mentioned above, as some of my colleagues have intimated.—J. C. Huguenin, San Francisco, California.

Third International Congress of Entomology.

The Congress will take place in Vienna from the 5th to the 12th of September, 1915, in the rooms of the University.

Besides numerous lectures, discussions, demonstrations concerning the different branches of theoretical and practical entomology, it is intended to visit the scientific institutions and public collections of Vienna and to make some excursions in the neighborhood of the town. Annexed to the meeting of the congress, it is intended to travel across the Alps to the Adriatic coast and to visit some of the Karst caves.

An entomological exhibition will be open during the whole meeting, showing in the first place: Private collections important from a biological, ethological, geographical, economical or any other point of view; objects of historical interest. Pictures, books, tables, maps, etc.; optic or mechanic instruments; means of instruction, school collections, models, etc.; objects of agriculture, sericulture and other branches of practical entomology.

All entomologists having the intention of taking part in the congress or in the exhibition are invited to subscribe as early as possible. Tickets for a member for life: at least 240 kroner. Tickets of the member of the Third Congress, 24 kroner. Supplementary tickets for accompanying family members, 12 kroner. Certain benefits (theatres and other amusements) are strictly dependent on the succession of the ticket number.

All entomologists who intend to hold lectures in the meetings or to send objects for the exhibition, are requested to give the necessary indications for a definite program as soon as possible.

Office of the III. International Congress of Entomology: Vienna 1, Burgring 7.—Dr. F. Maidl, *General Secretary.* A. Handlirsch, *President.*

Entomological Literature.

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

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in **Heavy-Faced Type** refer to the journals, as numbered in the following list, in which the papers are published, and are all dated the current year unless otherwise noted, always excepting those appearing in the January and February issues of the News, which are generally dated the year previous.

All continued papers, with few exceptions, are recorded only at their first installments.

The records of systematic papers are all grouped at the end of each Order of which they treat, and are separated from the rest by a dash.

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

1—Proceedings of the Academy of Natural Sciences of Philadelphia. **2**—Transactions, American Entomological Society, Philadelphia. **3**—The American Naturalist. **4**—The Canadian Entomologist. **5**—Psyche. **6**—Journal, New York Entomological Society. **7**—U. S. Department of Agriculture, Bureau of Entomology, Washington. **8**—The Entomologist's Monthly Magazine, London. **9**—The Entomologist, London. **11**—Annals and Magazine of Natural History, London. **14**—Proceedings of the Zoological Society of London. **18**—Ottawa Naturalist. **21**—The Entomologist's Record, London. **22**—Zoologischer Anzeiger, Leipzig. **35**—Annales, Societe Entomologique de Belgique. **38**—Wiener Entomologische Zeitung. **40**—Societas Entomologica, Zurich. **68**—Science, New York. **84**—Entomologische Rundschau. **92**—Zeitschrift fur wissenschaftliche Insektenbiologie. **122**—Transactions, City of London Entomological and Natural History Society. **131**—Proceedings, South London Entomological and Natural History Society. **153**—Bulletin, American Museum of Natural History, New York. **166**—Internationale Entomologische Zeitschrift, Guben. **173**—Die Grossschmetterlinge der Erde, Fauna Americana, von A. Seitz, Stuttgart. **179**—Journal of Economic Entomology. **180**—Annals, Entomological Society of America. **184**—Journal of Experimental Zoology, Philadelphia. **193**—Entomologische Blatter, Cassel. **195**—Bulletin, Museum of Comparative Zoology, Cambridge. **198**—Biological Bulletin, Marine Biological Laboratory, Woods Hole. **216**—Entomologische Zeitschrift, Frankfurt a. Main. **221**—New Hampshire Agricultural Experiment Station, Durham, N. H. **285**—Nature Study Review, Ithaca, N. Y. **291**—Proceedings of the Staten Island Association of Arts and Sciences, Lancaster, Pa.

295—Handbuch der Vergleichenden Physiologie. Herausgegeben von Hans Winterstein, Jena. 322—Journal of Morphology, Philadelphia. 338—University of Minnesota Agricultural Experiment Station, St. Paul. 369—Entomologische Mitteilungen, Berlin-Dahlem. 373—Contributions to the Natural History of the Lepidoptera of North America, by Wm. Barnes and J. H. McDunnough, Decatur, Ill. 411—Bulletin of the Brooklyn Entomological Society. 420—Insecutor Inscitiae Menstruus: A monthly journal of entomology, Washington. 447—Journal of Agricultural Research, Washington. 452—Lepidopterorum Catalogus, editus a H. Wagner. 462—The Butterfly Farmer, Truckee, Cal. 463—Bulletin of the U. S. Department of Agriculture, Washington, D. C. 483—Zoologiska Bidrag fran Uppsala. 484—Report of the British Association for the Advancement of Science, London. 485—Journal of the Royal Microscopical Society, London. 486—Journal of the Elisha Mitchell Scientific Society, Chapel Hill, N. C. 487—Proceedings of the Boston Society of Natural History. 488—Journal of the East Africa and Uganda Natural History Society.

GENERAL SUBJECT. **Anon.**—The Canadian Entomological Service. A separate branch formed [Agric. Gaz. of Canada, i, 270]. **Anon.**—A national collection of Canadian insects, **4,** 1914, 251. **Anon.**—Entomologische neuigkeiten, **40,** xxix, 58, 64, 68, 74. **Biedermann, W.**—Farbe und zeichnung der insekten, **295,** iii, Heft 1, 1657-1922 (cont.). **Blume, E.**—Ein neuer Lichtfang-apparat, **92,** x, 243. **Cockerell, T. D. A.**—The entomology of Helianthus, **9,** 1914, 191-6. **Cook, O. F.**—Fiat nomenclature, **68,** xl, 272-3. **Dixey, F. A.**—The geographical relations of mimicry, **484,** lxxxiii, 518. **Eastman & Von Zittel**—Text-book of Paleontology (2d edition), Vol. I. Insect, p. 785-821 [Macmillan & Co., 1913]. **Fuchs, C.**—Obituary note by F. E. Blaisdell, **68,** xl, 91-2. **Gambera, M.**—Ein neues universal entomologenmikroskop, **369,** iii, 193-97. **Graef, E. L.**—Some early Brooklyn entomologists, **411,** ix, 47-56. **Hallett, H. M.**—A chloroform killing and relaxing bottle, **8,** 1914, 175-6. **Heath, E. F.**—Obituary by A. G., **4,** 1914, 299-300. **Hegner, R. W.**—The history of the germ cells in insects with special reference to the keimbahn-determinants, **322,** xxv, 375-510. **v. Linstow, Dr.**—Die ocellen der insekten, **166,** viii, 115-16. **Lyman, H. H.**—Obituary by C. J. S. Bethune, **4,** 1914, 221-6. **Moeser, F. E.**—Obituary notice by H. Bird, **4,** 1914, 268. **Poulton, E. B.**—Discussion on mimicry, **484,** lxxxiii, 518-20. **Richardson, C. H.**—Some comments on the value of warning colors and mimicry in insects, **5,** xxi, 136-7. **Sanderson & Peairs**—The relation of temperature to insect life, **221,** Tech. Bul. No. 7. **Sherman, F.**—Studies of the animal life of North Carolina with suggestions for a biological survey,

486, xxx, 69-89. **Scott, A. W.**—Metallizing flowers and insects, **462,** i, 188-9. **Webster, F. M.**—Good and bad bugs on the farm (The Breeder's Gazette, lxv, 1173-1174, 1914). **Weiss, H. B.**—Insects and pain. The destructive insects of N. J., **4,** 1914, 269-71; 322-3.

ARACHNIDA, ETC. Cockle, J. W.—The occurrence of Rhyncholophus sp. on Lepidoptera observed at Kaslo, B. C., **4,** 1914, 332. **Murphy, R. C.**—Reactions of the spider Pholcus phalangioides, **6,** xxii, 173-4.

Brues, C. T.—A new peripatus from Colombia, **195,** lviii, 375-82. **Chamberlin, R. V.**—On a collection of Myriapoda from Costa Rica, **2,** xl, 185-194. Notes on Myriapods from Douglas Lake, Mich. A new Julus from California, **4,** 1914, 301-6, 314-15. A new diplopod from the Galapagos Islands, with notes on the Chilopods, **5,** xxi, 85-92. The genus Watobius, **195,** lvii, 107-12.

APTERA AND NEUROPTERA. Creighton, J. K.—On Pediculus capitis, **488,** iv, 145. **Cummings, B. F.**—Scent organs in Trichoptera, **14,** 1914, 459-74.

McGregor, E. A.—Some notes on parasitism of Chrysopids in So. Carolina, **4,** 1914, 306-8. **Navas, L.**—Some Neuroptera from the U. S., **411,** ix, 60-2. **Paine, J. H.**—Note on Linognathus forficula, **5,** xxi, 117. **Woodruff, L. B.**—Some dragonflies of a Connecticut brook, **6,** xxii, 154-9.

ORTHOPTERA. Caudell, A. N.—Regeneration of antennae, **68,** xl, 352-3. **Comstock, A. B.**—Cricket music, **285,** x, 204-6.

Burr, M.—On some Central American Dermaptera in the U. S. N. M., **4,** 1914, 273-76. **Caudell, A. N.**—Some bromeliadicolous Blattidae from Mexico and Central America, **420,** ii, 76-80. **Davis, W. T.**—A cricket new to Long Island, N. Y., **6,** xxii, 171-2. **Rehn & Hebard**—A revision of the Orthopterous group Insarae (Tettigoniidae, Phaneropterinae), **2,** xl, 37-184. United States and Mexican records of species of the genus Doru. Records of Dermaptera and Orthoptera from West Central and Southwestern Florida, collected by W. T. Davis, **6,** xxii, 89-96, 96-116. **Somes, M. P.**—The Acridiidae of Minnesota, **338,** Bul. No. 141, 98 pp.

HEMIPTERA. Davis, W. T.—The seventeen-year cicada on Staten Island in 1912, **291,** iv, 99. **Ewing, H. E.**—Notes on regression in a pure line of plant lice, **198,** xxvii, 164-8. **Tower, D. G.**—The Mechanism of the mouth parts of the squash bug, Anasa tristis, **5,** xxi, 99-108.

Barber, H. G.—New Hemiptera-Heteroptera, with comments upon the distribution of certain known species, **6,** xxii, 164-71. In-

sects of Florida, II—Hemiptera, **153,** xxxiii, 495-535. **Bergroth, E.**—Eine neue neotropische Cicade, **38,** xxxiii, 175-6. **Davidson, W. M.**—Walnut Aphides in California, **463,** No. 100. **Distant, W. L.**—On a few undescribed Cicadidae from California, **11,** xiv, 165-7. **Hood, J. D.**—Notes on N. Am. Thysanoptera, with descriptions of a new family and two n. sps. Two Porto Rican Thysanoptera from sugar cane. A new T. from Panama, **420,** ii, 17-22, 38-41, 49-53. **Quaintance & Baker**—Classification of the Aleyrodidae, Part II, **7,** Tech. Ser. No. 27, pt. 2.

LEPIDOPTERA. Anon.—Vogel als schmetterlingsjager, **216,** xxviii, 81. **Adkin, F. E.**—Gynandromorphous L., **4,** 1914, 331. **Ball, F. J.**—Le dimorphisme saisonnier des androconia chez certains Rhopaloceres, **35,** lviii, 170-182. **Bethune-Baker, G. T.**—The correlation of pattern and structure in the Ruralinae group of butterflies, **484,** lxxxiii, 516. **Bowater, W.**—The heredity of melanism in L., **484,** lxxxiii, 514-16. **Brandt, P.**—Verschiedenes ueber die Aufzucht der ueberseeischen spinner, **216,** xxviii, 75-7. **Carpenter, G. D. H.**—The enemies of "protected" insects, with special reference to Acraea zetes, **484,** lxxxiii, 516-17. An interesting polymorphic butterfly, **488,** iv, 131-4. **Forbes, T. M.**—A structural study of the caterpillars: III, The somatic muscles, **180,** vii, 109-134. **Frohawk, F. W.**—The sleeping attitude of Lycaenidae, **9,** 1914, 212-13. **Jones, T. H.**—Some notes on the life history and habits of Lauron vinosa, **420,** ii, 108-11. **Poulton, E. B.**—Mimicry in the N. Am. butterflies of the genus Limenitis, **131,** 1913-14, 35-7. **Rogers, St. A.**—The scents of butterflies, **488,** iv, 144-5. **Swett, L. W.**—Geometrid notes—with descriptons of new species and varieties, **4,** 1914, 289-92. **Winn, A. F.**—How lepidoptera winter. Notes on the eggs of Macronotua onusta, **4,** 1914, 295, 296. **Wolff, P.**—Ueber die technik der temperatur experimente mit schmetterlingspuppen, **216,** xxviii, 77-8 (cont.).

Barnes & McDunnough—Synonymic notes on No. Am. L. Some new N. Am. Pyraustinae, **373,** ii, 198-223, 224-50. **Bethune-Baker, G. T.**—On the correlation of pattern and structure in Rhopalocera with special reference to Ruralidae, **21,** xxvi, 177-84. **Busck, A.**—A destructive pine-moth introduced from Europe, **179,** vii, 340-1. A new Gracilaria on Azalea. The chestnut bastminer. Seven n. sps. of Ethmia from Tropical America, **420,** ii, 1-2, 3-4, 53-57. **Chapman, T. A.**—Lepidopterology, **21,** xxvi, 176-7. Some Lycaenid notes, with a discussion of the segmentation of the abdomen in L., **122,** 1912-13, 67-74. **Comstock, W. P.**—Erycinidae and Lycaenidae from the island of Trinidad, **6,** xxii, 152-4. **Von Dalla Torre, K. W.**—Thyrididae, **452,** Pars 20. **Dyar, H. G.**—Two new

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Doings of Societies.

AMERICAN ENTOMOLOGICAL SOCIETY.

Meeting of April 23, 1914. Dr. Philip P. Calvert, President, in the chair. Ten persons were present.

Mr. Rehn, Chairman of the Publication Committee, said the committee had inaugurated a scheme of addressing a circular letter in relation to the *Transactions* of the Society, making an appeal for subscriptions. It is now possible for persons to subscribe for separate papers on various orders. A summary of the results obtained to date was given.

The President exhibited photographs of entomologists formerly belonging to the late Prof. P. R. Uhler and presented to the Society by Mrs. Uhler. On motion a vote of thanks was extended to Mrs. Uhler for her gift.

Mr. Hornig said he had observed recently hatched larvae of mosquitoes on the 6th and on the 16th of April. They pupated, and emerged by the 20th. They were found in a sheltered pool about two by three feet, the species being *A. sylvestris.*

Mr. Rehn made some remarks on the genus *Scudderia;* he and Mr. Hebard studied about a thousand specimens. The differences in the male sub-genital plates were described in detail and a new species mentioned as having been found.

Dr. Skinner exhibited a collection of butterflies from pupae

which had been subjected to heat and cold respectively. The specimens so altered were reared by Prof. Standfuss.

Mr. Rehn referred to the colors of *Neophasia terlooi* and said the Orthoptera found in the foothills of So. Arizona, Texas and New Mexico showed that the orange color is intensified.

Dr. Skinner made some remarks on the genitalia of the genus *Thanaos*. Mr. Williams spoke of the remarkable constancy of these organs in the genus.

Dr. Calvert showed specimens of *Anomalagrion hastatum* from the vicinity of Cartago, Costa Rica, remarking that it and *Pantala flavescens* are the only species of Odonata common to that locality and Philadelphia, a rather remarkable fact considering the smallness of *Anomalagrion*.

Mr. Rehn spoke of the coming meeting of entomologists in Philadelphia next December. He moved that the chair appoint a committee to arrange for their entertainment. Adopted.

Meeting of June 8, 1914. Dr. Philip P. Calvert, President, in the chair. Nine persons present.

Mr. Rehn said the system of circulating letters in relation to the *Transactions* had been well received.

Mr. Hornig presented a collection of mosquitoes, comprising three species and twenty-eight specimens.

The following persons were appointed by the President as an Entertainment Committee for the meetings of entomologists to be held in Philadelphia next December: Henry Skinner, H. W. Wenzel, J. A. G. Rehn, Morgan Hebard, E. T. Cresson, Jr., and George M. Greene.

The President read a letter soliciting subscriptions to establish a monument in honor of Fabre, the French entomologist. It was moved and adopted that the Treasurer of the Society be authorized to receive subscriptions for this purpose.

Mr. Rehn referred to a remark made by Mr. W. T. Davis that celluloid mounts would be seriously affected by carbon bisulphide. Experiment showed that such was not the case.

Mr. Hornig said he had found cocoons of *Callosamia cyn-*

thia badly parasitized by *Spirochalcis mariae*. These specimens of parasites were only half the size of those that came from the cocoons of *Platysamia cecropia*.

He also referred to having found *Aedes triseriatus* breeding in a cistern, away from the woods. The species had been supposed to breed in the woods or near them in all cases. He also spoke of the scarcity of *Culex pipiens* at the Point Breeze Amusement Park, Philadelphia.

Mr. Greene said there was an excellent collecting place near the Overbrook Seminary at Merion, and spoke of the rare insects he had found there, particularly Hymenoptera and Coleoptera.

Mr. Williams referred to the species of *Lycaena* from which he had extracted and mounted the genitalia. He said species in this genus, in some cases, apparently distinct by maculation characters, had identical genitalia. The species in the genus found on the Pacific coast of the United States had evidently come from Europe originally, and became fewer as they neared the south, as there were only two species found in Mexico.

Mr. Rehn referred to genitalic characters in the Orthoptera. In one genus they may be good to separate species, and in others valueless.

Dr. Calvert spoke of the term species and gave the Linnaean definition and referred to recent work in the breeding of *Colias*.

HENRY SKINNER, *Secretary*.

FELDMAN COLLECTING SOCIAL.

Meeting at the home of H. W. Wenzel, 5614 Stewart Street, Philadelphia, May 20, 1914. Twelve members were present. President Wenzel in the chair.

Professor Calvert showed larvae and pupae of *Xylomyia pallipes* Say (Diptera, family Leptidæ) found beneath the bark of a living Carolina poplar in West Philadelphia, April 16, 1914, from which he bred the imago identified by Mr. E. T. Cresson, Jr. A description of the puparium and pupa of this species, under the name *Subula pallipes* Loew, was published by C. H. T. Townsend, in ENTOMOLOGICAL NEWS IV, p. 163,

May, 1893, but the present specimens differ in some details from that description.

Mr. Harbeck exhibited a specimen of *Brachyopa* taken by Mr. Lewis Unruh on Dogwood blossoms at Wenonah, New Jersey, May 10, 1914. There are no specimens of this Dipterous genus mentioned in the New Jersey List, but he has taken *vacua* O. S. at Roxborough, Pennsylvania. The one exhibited does not agree with any of the species he knows. Also exhibited a specimen of *Myiolepta strigilata* Loew taken by himself at Iona, New Jersey, May 17, 1914. Said that *Gnorimus maculosus* Knoch (Col.) was quite common on Dogwood blossoms at Wenonah, New Jersey, May 10, 1914.

Mr. Daecke described some of the interesting collecting places around Harrisburg, Pennsylvania, of which there are many in the mountains of that district. Recorded and exhibited the following two species of Coleoptera, family Elateridæ: *Corymbites fulvipes* Bland, Rockville, Pennsylvania, April 19, 1914, and *Limonius stigma* Herbst, same locality and date.

Mr. Kaeber said that the meadows of the Philadelphia Neck have been filled in and there are many young willows there; though they look perfectly healthy, fully 75 per cent. are infested with *Cryptorhynchus lapathi* Linn. (Col.). He has bred the following Coleoptera: (1)—*Alaus oculatus* Linn. from decaying oaks, April 27, 1914, (2)—*Melasis pectinicornis* Melsh. from hickory, May 3, 1914 (and every warm day since), (3)—*Desmocerus palliatus* Forst. April 28, 1914, (4)—*Xylotrechus colonus* Fabr. June 21, 1913, and (5)—*Acanthoderus decipiens* Hald. June 15, 1913; numbers 3, 4 and 5 were raised from larvae (in glass tubes). He exhibited a pair of brass forceps of his own make with a small cup arrangement on the tips for picking up small insects found under bark.

Mr. H. W. Wenzel said he had taken the usual spring forms (which are very early this year) in southern New Jersey on the pine, including eight *Buprestis ultramarina* Say. He exhibited *Elater sayi* LeC. Philadelphia, May 14, and *Buprestis decora* Fabr. Philadelphia, May 15, both accidentals captured by George Mahoney.

Mr. H. A. Wenzel exhibited a dozen specimens of *Hetaerius brunnipennis* Rand. and its host from Malvern, Pennsylvania, May 10, 1914. Said he had found these beetles under a large perforated stone in company with large black ants, and all the specimens were in these perforations and not in the galleries of the nest. The beetles are about 1-16 inch in diameter and the ants and had found some of the specimens in the galleries. the under side of the ant and are carried away. Mr. Laurent stated that while out collecting with Mr. Liebeck on April 11, 1914, at Mt. Airy, Philadelphia, Mr. Liebeck found a colony of black ants, from which they took a number of specimens of this Histerid, but had not noticed any of them being carried by the ants and had found some of the specimens in the galleries.

Adjourned to the annex.

Meeting at the same place June 17, 1914. Eleven members were present, Mr. Lewis Unruh visitor, President H. A. Wenzel in the chair.

Mr. Daecke said he had caught many insects on Force Mt., Pennsylvania, in the vicinity of Harrisburg, in the clearing made where the oil pipe line crosses the ridge. He had often wondered what mosquitoes fed on in the wilds where there were no human beings until seeing a box tortoise in this clearing one day with some insects flying about it, he caught them in his net, and they proved to be *Culex canadensis* Theobald filled with blood. He exhibited a micro-moth *Hememene* n. sp. from Rockville, Pennsylvania, May 3, 1914, on papaw,—this was formerly recorded from the State of Texas and Cincinnati, Ohio; another moth *Mesoleuca ruficiliata* Gn., Dauphin, Pennsylvania, May 24, 1914, was shown. He said he had noticed two leaves (which were opposite each other) curled up on a viburnum bush at Inglenook, Pennsylvania, June 7, 1914, and upon examining them found a fine specimen of the beetle *Centrodera decolorata* Harr., which is of a light brown color the same as the leaves where found.

Mr. Huntington said that in the evening of June 7 at Great Falls, Virginia, a searchlight was thrown on the falls and in-

sects were seen in the rays by the thousands.

Dr. Castle said he had been to Pine Beach, New Jersey, May 14, and had caught five species of *Cicindela*. He found some flat fungus on the ground which he placed in a tin box and bred from it *Caenocara oculata* Say (Col.). At Glasgow, Delaware, May 24, he had beaten the weevil *Brachystylus acutus* Say from persimmon.

Mr. Geo. M. Greene reported collecting as good in his usual collecting spot, Overbrook, Pennsylvania. He exhibited a species of Coleoptera from there which he had never had before, *Mycetochara binotata* Say, June 7, 1914, and two species that he had but had never himself taken: *Perothops mucida* Gyll., May 30, 1914, and *Eurymycter fasciata* Oliv., June 7, 1914; also a series of *Melandrya striata* Say, May 31 and June 7, 1914, and *Ithycerus novaboracensis* Forst., May 30 and May 31, 1914. The two wasps recorded last season, *Ibalia maculipennis* Hald. and *Arotes amoenus* Cress. (no males seen), are again numerous, as are three species of *Megarhyssa*: *atrata* Fabr., *lunator* Fabr. and *greenei* Viereck, both sexes.

Mr. H. W. Wenzel said that at Anglesea, New Jersey, May 30, 1914, he saw the first large washup of insects for years, among which were five species of *Calosoma*: *externum* Say, *scrutator* Fabr., *willcoxi* LeC., *frigidum* Kirby and *calidum* Fabr. He exhibited a pair of *Chrysobothris gemmata* LeC. collected by F. H. Snow, one at Douglas, Arizona, in August, the other in the Baboquivari Mts., Arizona.

Adjourned to the annex.

GEO. M. GREENE, *Secretary.*

OBITUARY.

DR. THEODORE NICHOLAS GILL, who died in Washington, September 25, 1914, although chiefly known as an ichthyologist, took an active part in the meetings of the Entomological Society of Washington years ago. He was born in New York City, March 21, 1837. An obituary notice has appeared in *Science* for Oct. 16, 1914.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

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Wanted, for my own library—Papers by LeConte, Horn, Harris, Randall and Melsheimer in Jour. Bost. Soc. Nat. Hist., 1835, 1845; Jour. Acad. Nat. Sci. Phila., 1852; Proc. Acad. Nat. Sci. Phila., 1844, 1856, 1868; Trans. Amer. Ent. Soc., Vols. 3, 4, 5, 7; Lists of Coleoptera, J. D. Putnam, 1876; Schiödte, Metamorphoses, Parts 2, 6; Casey, Contributions to Coleopterology, Part 2, 1884.—Address John D. Sherman, Jr., 403 Seneca Ave., Mount Vernon, N. Y.

Heteroptera—I am engaged on the study of this group and desire material from all regions, especially New England. Will exchange in this and other orders. Correspondence desired.—H. M. Parshley, Bussey Institution, Forest Hills, Mass.

Wanted—to purchase for cash the following numbers of the Experiment Station Record, Vol. I, No. 2; Vol. II, Nos. 2 and 9; Vol. III, Nos. 4 and 10.—J. F. Abbott, Washington University, St. Louis, Mo.

Wanted—Larvae or ova of *cecropia*, *polyphemus* and *Saturnia galbina*.—O. C. Poling, Phoenix, Arizona.

Chrysophanids wanted—I want very specially *Heodes fieldeni*, *Chalceria snowi*, *cupreus*, *rubidus*, *Satyrium fuliginosa*. I should like also some specimens of *Gaeides xanthoides*, *editha* and *gorgon*. Palaearctics, exotics or cash given in exchange.—G. T. Bethune-Baker, 19 Clarendon Road, Edgbaston, England.

Wanted—To make arrangements with dealers and collectors to furnish bred specimens of Lepidoptera for cash. Will send first class material only. New England and other species.—Sidney C. Carpenter, 49 Oakland Terrace, Hartford, Conn.

I have in papers for exchange, the rare high altitude (16,200 feet) Himalayan *Parnassius sikkimensis*, *hardwickei*, and *Papilio machaon sikkimensis* in exchange for American *Parnassius eversmanni* or West Coast Saturnidae.—J. Henry Watson, 70 Ashford Road, Withington, Manchester, England.

Colias interior—Fine specimens, some bred, for sale or exchange for other North American Lepidoptera.—Arthur H. Napier, Spring Lane, Chestnut Hill, Pa.

Fine specimens of the large Mantis, *Paratenodera sinensis*, offered in exchange for North American Lepidoptera or Coleoptera.—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

For Sale or Exchange—*Catocala* from this locality for *Catocala* and other Lepidoptera not in my collection; also have fertile ova of *C. coccinata*, *ilia*, *retecta*, *paleogama*, *amatrix* and *nurus*.—Mrs. O. F. Hiser, Nevada, Iowa.

Wanted—Bibliography of American Economic Entomology, No. 4. Write offer.—Geo. M. Greene, 1303 N. 54th St., Philadelphia, Pa.

Wanted—60 *Heliophila unipuncta*, one dozen imagines of any species of any order that are very distructive to cotton. 12 cotton weevil beetles, 12 *B. disippus*, *P. huntera* 35, 6 pair *M. phaeton*, *A. celtis* 4, 4 *Debis portlandia*, 6 each of any *Papilio*, all in papers with data.—A. F. Porter, Decorah, Iowa.

P. C. Stockhausen, Printer, 53-55 N. 7th Street, Philadelphia.