

# The Journal of Agriculture of the University of Puerto Rico

In continuation of The Journal of the Department of Agriculture of Puerto Rico  
Published by THE AGRICULTURAL EXPERIMENT STATION, Rio Piedras, P. R.

---

Published Quarterly: January, April, July and October of each year.

---

VOL. XXV

April 1941

No. 2

---

## A SUPPLEMENT TO "INSECTAE BORINQUENSES"

*Compiled by*

GEORGE N. WOLCOTT

The purpose of "Insectae Portoricensis" was to give the records of all the insects (economic or otherwise, but especially and in considerable detail the notes concerning those of economic importance) from the Island then officially called Porto Rico (which includes Culebra, Vieques and minor islands on the east, and Desecheo and Mona Islands on the west), up to shortly before the date of publication, March 1924. Five months later a supplement was issued, to give the determinations received too late for inclusion in the original annotated list. "Insectae Borinquenses," issued as the January 1936 number of the Journal of Agriculture of the University of Puerto Rico, but actually not published until July tenth of that year, was intended as a record of all determinations up to the end of June 1935, for the same Island, now officially known as Puerto Rico. In the present supplement, references to these original lists are abbreviated to "IP" and "IB" with a dash followed by the page number. The MS was submitted for publication on July 1, 1940, and is intended to cover all records up to that date. Several important publications received shortly afterwards are, however, noted [in brackets] in the bibliography, although the additional records and numerous changes in the synonymy have not been made in the list of insects itself.

Mr. Richard Faxon, who left Puerto Rico in August 1935, had made available for publication in "Insectae Borinquenses" all the interception records of the San Juan office of the Plant Quarantine Service of the Federal Bureau of Entomology and Plant Quarantine, of which he was in charge at that time. For this supplement, Mr. W. T. Owrey, in charge until May 1940, made available all the records of the succeeding five-year period, June 1935 to June 1940. The personnel of the office for the period is as follows:

<i>Date</i>	<i>Date of Arrival</i>	<i>Date of Departure</i>
A. G. Harley	September 1929 (at Mayaguez)	August 1935
A. S. Mills	December 1929	July 1937
R. G. Oakley	April 1931 (at Ponce)	February 1937
W. A. McCubbin	July 1935	July 1939
H. G. Taylor	July 1935	August 1939
W. T. Owrey	August 1935	May 1940
G. A. Pfaffman	March 1937 (at Mayaguez)	April 1940
I. W. Berryhill	July 1937	January 1939
R. G. Smith	February 1939	April 1940
F. A. Johnston	March 1940	At present on duty in Puerto Rico

It should be especially noted that the records of insects collected by the men of this office as published in "Insectae Borinquenses" and in this supplement are preceded by "I No.," an abbreviation for "Interception Number," and all represent determinations by specialists of the U. S. National Museum.

The records of what was formerly the Insular Experiment Station, now the Agricultural Experiment Station of the University of Puerto Rico at Rio Piedras, are given as an accession number separated by a dash from the year of collection, and, unless followed by a note as to the person making the determination, the insect presumably was identified by the person making the collection. During the period covered, the compiler has been in charge of the Division of Entomology, with Mr. Francisco Sein working on the problem of coffee leaf-miner. The only change in personnel was the appointment in September 1936 of Mr. Luis F. Martorell, to work on the problem of control of the sugar-cane moth-borer by *Trichogramma*. Mr. Martorell, graduated from the College of Agriculture in Mayaguez in 1932, received his M.S. from Ohio State in 1934, and for a year had been teaching (and collecting insects) in Venezuela. More recently he had been in the local Forest Service. He is an enthusiastic collector of insects, and most of the recent records in the Station catalog, especially from Mona Island, are due to his efforts.

Dr. Stuart T. Danforth, formerly Professor of Zoology and Entomology at the College of Agriculture at Mayaguez, shortly before his death sent all the records of Mallophaga identified up to that time from the birds which he had collected. Since then, Mr. J. A. Ramos, at present in charge of the Department, has sent all the more recent records of Mallophaga collected by Dr. Danforth, as well as of leaf-hoppers and Carabid and other beetles in his own collection. The latter are here recorded as "Ramos Col."

In contrast to the long period when no entomologist has been present at the Federal Agricultural Experiment Station at Mayaguez, for a number of years it has more recently been host for Mr. L. C. McAlister, Jr., and Mr. J. W. Balock, of the Division of Fruit Fly Investigations, Bureau of Entomology and Plant Quarantine. As stated on page 101 of the 1936 report of the Station, it "also furnished office and laboratory quarters for fifteen investigators engaged on entomological projects under funds provided by the Agricultural Adjustment Administration. These entomologists included M. R. Smith, who was engaged on investigations on the ant-scale-mealybug relationship on coffee and pineapples; H. K. Plank, working on the rhinoceros beetle and other coconut insects; L. C. Fife, engaged in a survey and life-history studies on pink bollworm and other cotton insects; H. L. Dozier, working on investigations of screw-worms, horn flies and other cattle insects; G. S. Tulloch, engaged in a survey and study of mosquitoes; L. B. Scott, engaged in a study of bean-pod borers and onion thrips; and A. H. Madden, engaged in an investigation of the mole-cricket and its control.

"S. H. Vandeburg, F. M. Wadley and H. D. Tate were engaged jointly in a study of the insect transmission of sugarcane mosaic, B. A. App was engaged in a study of the control of the corn earworm, the corn silk maggot, and the armyworm. K. A. Bartlett was engaged in the receipt and liberation of introduced beneficial insects, natural enemies of insect pests in Puerto Rico. S. M. Dohanian was engaged in exploration for natural enemies of Puerto Rican insects pests, and in this pursuit spent most of the year in Trinidad, British Guiana and Peru."

Such a wealth of entomological talent, however, could not long be retained at Mayaguez, and most of these men were in Puerto Rico only a little longer than one year. Despite the shortness of their stay, nearly every one has added to a knowledge of the insects in Puerto Rico by one or more published papers, and two of them, who eventually were more permanently appointed at the Mayaguez Station, Mr. K. A. Bartlett and Mr. H. K. Plank, have recently been very active in making available the results of their investigations.

Dr. Julio Garcia-Diaz, Dean of the College of Arts and Sciences, University of Puerto Rico; Mr. Boyd Palmer of the Polytechnic Institute at San German; Dr. W. A. Hoffman of the School of Tropical Medicine at San Juan; and one enthusiastic amateur in the collection and rearing of butterflies, Mr. Cesáreo Perez, have also materially added in studies of local insects.

## BIBLIOGRAPHY

- Anon. "Report of the Puerto Rico Experiment Station, 1935. pp. 34. Washington, D. C., July 1936.
- "Report of the Puerto Rico Experiment Station, 1936." pp. 103. Washington, D. C., August 1937.
- "Report of the Puerto Rico Experiment Station, 1937." pp. 115. Washington, D. C., November 1939.
- "Report of the Puerto Rico Experiment Station, 1938." pp. 137. Washington, D. C., November 1938.
- Bartlett, K. A. "A Dryinid Parasite attacking *Baldulus maidis* in Puerto Rico." Jour. Agr. Univ. P. R., 22(4): 479-8. San Juan, (March 23) February 1939.
- "A Search in the Guianas and Trinidad for predatory beetles of bamboo scales." Jour. Agr. Univ. P. R., 22(4): 493-5. San Juan, (March 23) February 1939.
- "Introduction and Colonization of two Parasites of the Pineapple Mealybug in Puerto Rico." Jour. Agr. Univ. P. R., 23(2): 67-72, ref. 2. San Juan, August 1939.
- "The Introduction into Puerto Rico of Beneficial Insects to aid in the Control of the Horn Fly of Cattle." Agr. Notes No. 88. Mayaguez, March 31, 1939. (Mimeographed.)
- Dohanian, S. M. "The Introduction of Parasites of the Sugarcane Borer into Puerto Rico." Jour. Agr. Univ. P. R., 21(2): 237-241. San Juan, (July) April 1937.
- "The Importation of Coccinellid Enemies of Diaspine Scales into Puerto Rico." Jour. Agr. Univ. P. R., 21(2): 243-247, ref. 2. San Juan, (July) April 1937.
- Fife, L. Courtney "Insects and a Mite found on Cotton in Puerto Rico, with Notes on their Economic Importance and Natural Enemies." Bulletin No. 39, P. R. Agr. Expt. Sta., Mayaguez, P. R., pp. 14, ref. 45. Washington, D. C., March 1939.
- Gage, Charles E. "The Tobacco Industry in Puerto Rico." Circ. No. 519, pp. 54, fig. 18, ref. 11. Washington, D. C., March 1939.

- Garcia-Diaz, Julio** "An Ecological Survey of the Fresh Water Insects of Puerto Rico, Appendix A." Jour. Agr. Univ. P. R., **22**(1): 94-96. San Juan, (April 15) January 1938: lists of determinations.
- Jepson, W. F.** "Report on the Search for Parasites for *Phytalus smithii* Arr." pp. 66, ref. 13 and 31. Port-Louis, Mauritius, 1936.
- Martorell, L. F.** "Some Notes on Forest Entomology." Caribbean Forester, **1**(1): 25-6, **1**(2): 31-2, **1**(3): 23-4. New Orleans, La., October 1939, January and April 1940.
- Martorell, L. F. & Wolcott, G. N.** "Forest Tree Insects." in Ann. Rept. Agr. Expt. Station, Fiscal Year 1937-38. p. 44. San Juan, 1939.
- [**Needham, J. G.** "Insects from Seed Pods of the Primrose Willow, *Jussizea angustifolia*." Proc. Ent. Soc. Washington, **43**(1): 2-6, fig. 6. Washington, D. C., January 1941.]
- Noble, L. W. & Hunt, W. T.** "Imported Parasites of the Pink Bollworm at Presidio, Texas, 1932-36." Jour. Ec. Ent., **30**(6): 842-4. Menasha, Wis., December 1937.
- [**Plank, H. K. & Smith, M. R.** "A survey of the pineapple mealybug in Puerto Rico and preliminary studies of its control." Jour. Agr. Univ. P. R., **24**(2): 49-76, fig. 6, ref. 11. San Juan, (August) April 1940.]
- [**Scott, L. B.** "The bean pod borers in Puerto Rico." Jour. Agr. Univ. P. R., **24**(2): 35-47, fig. 2, ref. 3. San Juan, (August) April 1940.]
- Smith, M. R.** "The Ants of Puerto Rico." Jour. Agr. Univ. P. R., **20**(4): 819-875, fig. 19, ref. 16. San Juan, (January 1937) October 1936.
- vanVolkenberg, H. L.** "Check List of Parasites found among principal domestic Animals in Puerto Rico." Proc. Helminthological Soc. Washington, **5**(1): 7-8. Washington, D. C., 1939.
- Wadley, F. M.** "Observations on some Insects associated with Sugarcane in Puerto Rico." Jour. Agr. Univ. P. R., **21**(2): 103-114, ref. 15. San Juan, April 1937.
- Wolcott, G. N.** "Report of the Entomologist." in Ann. Rpt. Director, Year 1933-34. pp. 142-144. San Juan, 1935.
- "What the Giant Surinam Toad, *Bufo marinus* L., is eating NOW in Puerto Rico." Jour.

Agr. Univ. P. R., 21(1): 79-84, ref. 3. San Juan, January 1937.

"Annual Report for the Fiscal Year 1934-1935, Division of Entomology." in Ann. Rpt. Agr. Expt. Station, Fiscal Year 1934-35, pp. 41-49. San Juan, 1937.

"Annual Report for the Fiscal Year 1935-1936 of the Division of Entomology." in Ann. Rpt. Agr. Expt. Station, Fiscal Year 1935-36, pp. 53-64. San Juan, 1937.

"Annual Report of the Division of Entomology for the Fiscal Year 1936-1937." in Ann. Rpt. Agr. Expt. Station, Fiscal Year 1936-37, pp. 82-102. San Juan, 1938.

"Entomological Investigations." in Ann. Rpt. Agr. Expt. Station, Fiscal Year 1937-38, pp. 33-34. San Juan, 1939.

"A Parasite of the Puerto Rican Mole-Cricket." Science 89(2318): 508-9. New York, June 2, 1939.

"The Entomologist looks at Maga." Caribbean Forester, 1(2): 29-30. New Orleans, La., January 1940.

Wolcott, G. N. &  
Martorell, L. F.

"Two Insects new to Puerto Rico: the Lycid Beetle, *Thonalmus chevrolati* Bourgeois, and the Ephydrid Fly, *Ephydra gracilis* Packard." Jour. Agr. Univ. P. R., 21(4): 535-8. San Juan, November 12, 1937.

"The Ant, *Monomorium carbonarium ebeninum* Forel, in a new Role, as Predator on the Egg-Clusters of *Diatraea saccharalis* F., in Puerto Rican Cane Fields." Jour. Agr. Univ. P. R., 21(4): 577-9. San Juan, (November 12) October 1937.

page 21

## COLLEMBOLA

**Entomobrya cubensis** Folsom—det. H. B. Mills

Anon 39-118: from bamboo twigs.

Fife 39-11: on the underside of cotton leaves.

**Salina wolcottii** FolsomFife 39-11: numerous on the underside of cotton leaves.  
in houses (38-39).

page 24

## ORTHOPTERA

## FORFICULIDAE

**Labidura riparia** Pall.

at light, lighthouse, Mona Id. (261-40 det. A. B. Gurney).

**Doru albipes** F.

in hollow twigs of bucare at Maunabo (47-38); in saw-fly cocoon on atchiote at Bayamon (I No. 6205).

**Doru lineare** Esch.

Anon 39-120: injuring vanilla leaf-tips.

page 25

**Psalis americana** var. **gagathina** BurmeisterAnon 39-109: found in tunnels of *Cosmopolites sordidus* Germar at Juana Diaz, and fed on larvae in captivity.

## BLATTIDAE

**Aglaopteryx absimilis** Gurney, A. B., "Studies in certain Genera of American Blattidae (Orthoptera)." Proc. Ent. Soc. Washington, 39(5): 101-112, pl. 1. Washington, D. C., May 1937: TYPE from Cayey, P. R., "in cocoons of *Megalopyge krugii* on trunk of bucare tree" (R. T. Cotton).**Aglaopteryx diaphana** F. is a Cuban species, according to Gurney (above), and the records under this name for Puerto Rico should be under **A. devia** Rehn.between leaves of *Samanea saman* at Salinas (261-39).

page 28

**Blattella germanica** L.

in houses, Mona Id. (109-39, 255-40).

**Ischnoptera rufa** DeGeer

in bananas at Lares (282-39); in fruit fly trap at Bayamon (I No. 6917).

**Symploce bicolor** P. B.—det. A. B. Gurney

on Mona Id. (276-40).

page 29

**Pelmatosilpha coriacea** Rehn

under bark of *Sideroxylon foetidissimum* at Ciales (417-40); on Mona Id. (106-39).

**Periplaneta americana** L.

Wolcott 37-81: in toad excrement.

page 34

MANTIDAE

**Callimantis antillarum** Saussure

on Mona Id. (14-37 det. A. B. Gurney, 53-40, 252-40).

**Diapherodes** sp., near **longiscapha** Redtenbacher

on El Yunque (89-35 det. A. B. Gurney), at Rio Blanco (62-39).

page 35

PHASMIDAE

**Aplopus** sp.—det. A. B. Gurney

on Mona Id. (16-37).

**Antillophilus restrictus** Redtenbacher, J., (as *Pericentrus*) "Die Insektenfamilie der Phasmiden." 1908, p. 357: TYPE from Puerto Rico.

Rehn, J. A. G. & Hebard, Morgan, "New Genera and Species of West Indian Mantidae and Phasmidae (Orthoptera)." Trans. Amer. Ent. Soc., 64(1040): 33-55, pl. 2. Philadelphia, March 7, 1938: at Arcibo, P. R.

page 36

ACRIDIDAE (LOCUSTIDAE)

**Sphingonotus haitiensis** Saussure

Rehn, J. A. G. & Hebard, Morgan, "New Genera and Species of West Indian Acrididae." Trans. Amer. Ent. Soc., 64( ): 201-226, pl. 1. Philadelphia, August 5, 1938: at Ensenada, Coamo Springs and Manati. at the airport, Mona Id. (105-39).

page 37

**Schistocerca americana** Drury

at Mayaguez (I No. 7425), on Mona Id. (104-39) abundant on the plateau in March (255-40); on sugarcane at Maunabo (316-39), at Fajardo (14-39) nymphs in November, adults in February and March.

TETTIGONIIDAE (LOCUSTIDAE)

**Microcentrum triangulatum** Brunner

on Mona Id. (147-39, 254-40); nymphs and adults feeding on leaves of moca, *Andira inermis*, at Cayey (118-40).



page 39

## GRYLLIDAE

**Scapteriscus vicinus** Scudder—the "changa"

Smith (37-845: eggs and nymphs eaten by *Pheidole subarmata* var. *borinquenensis* Wheeler (A. H. Madden).

Madden, A. H., "Notes on the Changa, or West Indian Mole Cricket, in Puerto Rico in 1935 and 1936." Jour. Agr. Univ. P. R., **21**(2): 115-120. San Juan, April 1937.

Wolcott 37-62 to 64: initiation of an attempt to introduce a parasite of.

Wolcott 38-96 to 98: difficulties encountered.

Wolcott 39-43 to 44: successful mass introduction of adult wasp parasites when accompanied by live parasitized hosts.

Wolcott, G. N., "Presence of Host Keep Parasites alive in Captivity." Science, **87**(2259): 352. New York, April 15, 1938.

Wolcott, G. N., "The Introduction into Puerto Rico of *Larra americana* Saussure, a specific Parasite of the 'Changa,' or Puerto Rican Mole-Cricket, *Scapteriscus vicinus* Scudder." Jour. Agr. Univ. P. R., **22**(2): 193-218, fig. 4, ref. 16. San Juan, May 1938.

Gage 39-21: a short economic account.

Fife 39-11: attacking young cotton seedlings in sandy soil.

Wolcott 39-509: establishment of *Larra americana* in Puerto Rico at two points.

[Wolcott, G. N., "The Establishment in Puerto Rico of *Larra americana* Saussure." Jour. Ec. Ent., **34**(1): 53-56, ref. 7. Menasha, Wis., April 23, 1941.]

adults at light at Guajataca (51-39); at top of mountains (elev. 1,500 ft.), Mountain Top Nursery, Patillas (10-39).

page 43

**Amphiacusta caraibea** Saussure

in caves and houses, Mona Id. (146-39).

page 45

## ISOPTERA

Wolcott, G. N., "Comején y Polilla." Bol. No. 48. Estacion Experimental Agricola de Rio Piedras, p. 26, fig. 13. San Juan, March 20, 1939.

Dr. T. E. Snyder has prepared a list under the latest accepted names, here used, of all the authentic records of termites from Puerto Rico.

## KALOTERMITIDAE

**Kalotermes mona** Banks 19-478: TYPE from Mona Id.

**Kalotermes (K.) snyderi** Light

all the previous records of *K. marginipennis* Latreille in Puerto Rico should be referred to this species, including the illustration of a soldier in Wolcott 39-24.

in sanguinaria tree, Mona Id. (169-39 det. T. E. Snyder).

**Kalotermes (Neotermes) castaneus** Burmeister

**Kalotermes (Cryptotermes) brevis** Walker

(as *Cryptotermes*) Wolcott 37-54 to 55: an investigation initiated (1935), preliminary tests with paradichlorobenzine and with "chlorasol."

Wolcott 38-83: preliminary results in wood resistance.

Wolcott 39-34 to 36: woods most resistant to attack.

Wolcott 39-14 to 23: an extended, illustrated account.

Wolcott 40-29: natural resistance of heartwood of mahogany and maga.

[Wolcott, G. N., "A List of Woods arranged according to their Resistance to the Attack of the 'Polilla,' the Dry-Wood Termite of the West Indies, *Cryptotermes brevis* Walker." Caribbean Forester, 1(4): 1-10, fig. 2. New Orleans, La., July 1940.]

page 47

**Kalotermes (Cryptotermes) cavifrons** Banks

Snyder: at Mayaguez in 1936.

**Kalotermes (Calcaritermes) corniceps** Snyder

**Kalotermes (Glyptotermes) pubescens** Snyder

in stump of *Miconia guianensis* on El Yunque (38-39 det. T. E. Snyder); in corner post of Sierra Palm cottage, El Yunque (114-40 det. T. E. Snyder).

RHINOTERMITIDAE

**Heterotermes convexinotatus** Snyder

Wolcott 39-23: mention.

**Heterotermes tenuis** Hagen

Wolcott 39-23 to 25: an economic account.

in houses at Aguadilla (55-39 det. T. E. Snyder); attacking books in concrete house, entrance through wooden door-sill, later through cracks between tiles of floor (54-38 det. H. R. Johnson).

page 48

TERMITIDAE

**Nasutitermes (N.) acajutlae** Holmgren (?)

(as *N. creolina* Banks) Banks 19-484; from Vieques Id., and Porto Rico, "probably what Holmgren records from St. Thomas as *E. acajutlae*."

(as *N. creolina* Banks) Wolcott 21-3, IP-36 and IB-49: nest in algarrobo tree (170-21). "The workers bit viciously."

**Nasutitermes (N.) costalis** Halmgren

(as *N. sanchezi* Holmgren) Banks 19-487: "Practically identical as regards adults with *N. morio*." = *N. costalis*.

Wolcott 39-5 to 14: an illustrated, economic account.

[Martorell, L. F., "Some Notes on Forest Entomology IV." Caribbean Forester, 2(2): 80-2. New Orleans, La., January 1941: listing 84 trees attacked.]

adults pursued by bat at Guajataca (50-39); destroying all the wood in almacigo fence-post at Vega Baja (156-40); nest in heartwood of live mahogany stump at Aguadilla (372-40), in mahogany tree at Aguadilla (270-39), at Dorado (383-40); nest in grenadilla tree, *Buchenavia capitata*, at Las Marias (271-39); nest in tabonuco tree, *Dacryodes excelsa*, at Matrullas Dam (310-39); nest in acacia tree, *Albizzia lebeck*, at Lares (70-40); nest in roble tree, *Tabebuia pallida*, at Lares (70-40); nest in morál tree, *Cordia sulcata*, at Cayey (125-40); nest in guamá tree, *Inga laurina*, at Cayey (124-40); nest in cupéy, *Clusia rosea*, at Isabela (421-40); nest in guamá americano tree, *Pithecollobium* sp. at San Sebastian (425-40).

(page 47)

**Nasutitermes (Tenuirostritermes) discolor** Banks 19-489 (as *Constrictotermes*): TYPE from Culebra Id., Adjuntas, Manati and El Yunque, P. R.  
in rotten tree on El Yunque, (343-39 det. T. E. Snyder).

**Nasutitermes (Tenuirostritermes) wolcottii** Snyder

page 50

**Anoplotermes (A.)** sp.

**Microcerotermes arboreus** Emerson

Banks 19-482: "described from specimens in gum-copal, and Hagen identified it with specimens from Porto Rico."

page 51

## EMBIIDINA

**Oligotoma latreillei** Rambur ? or near—det. A. B. Gurney  
between pages of book (39-38).

## CORRODENTIA

### ATROPIDAE

**Liptoscelis (Troctes) divinatorius** Müller

scavenger or symbiotic with *Cryptotermes brevis* (1-37 det. N. Banks); on Hibiscus at Vega Alta (I No. 6312); from bird skins collected by Dr. Stuart T. Danforth on Vieques Id.—det. A. B. Gurney.

**Ectopsocus** sp.—det. A. B. Gurney

on casein-washed walls, School of Tropical Medicine (W. A. Hoffman).

## MALLOPHAGA

### **Eomenacanthus stramineus** Nitzsch

Anon 36-23: in table 6, the species of lice found in Puerto Rico by Dr. H. L. vanVolkenberg, the only record not given in "Insectae Borinquenses" is of this species "on chicken."

Dr. H. E. Ewing has determined the following from birds collected by the late Dr. Stuart T. Danforth.

### **Menopon** sp.

on Semipalmated Plover, *Charadrius haiticula semipalmatus*, at Cartagena Lagoon x-4-30.

### **Actornithophilus** sp.

on Semipalmated Sandpiper, *Ereunetes pusillus*, at Cartagena Lagoon, ix-30-30; on Stilt Sandpiper, *Micropalama himantopus*, at Cartagena Lagoon, ix-30-30; on Mangrove Cuckoo, *Coccyzus minor teres*, at Cartagena Lagoon, x-4-30; on Southern Little Blue Heron, *Florida caerulea caerulescens*, at Cartagena Lagoon, x-4-30.

### **Heleonomus** sp.

on Lesser Yellowlegs, *Tringa flavipes*, from Vieques Id., xii-26-35.

### **Menacanthus chrysophaeum** Kellogg

on Grey Kingbird, *Tyranus d. dominicensis*, from Vieques Id., xii-28-35.

### **Colpocephalum flavescens** Nitzsch

on Antillean Sparrow Hawk, *Falco sparverius loquaculus*, from Vieques Id., xii-28-35; on Pearly-Eyed Thrasher, *Margarops f. fuscatus*, from Vieques Id., xii 28-35.

### **Colpocephalum** sp.

on Judio, *Crotophaga ani*, at Mayaguez, ii-8-36; another from Vieques Id., xii-26-35; on Jamaican Mockingbird, *Mimus p. orpheus*, from Vieques Id., xii-31-36; on Semipalmated Plover, *Charadrius h. semipalmatus*, at Mayaguez, x-21-30.

### **Myrsidea incerta** Kellogg

on Grey Kingbird, *Tyranus d. dominicensis*, xii-28-35, on Antillean Sparrow Hawk, *Falco s. loquaculus*, xii-28-35, on P. R. Woodpecker, *Melanerpes portoricensis*, xii-31-35, on Judio, *Crotophaga ani*, xii-26-35, on Pearly-Eyed Thrasher, *Margarops f. fuscatus*, xii-28-35, all from Vieques Id.; and on P. R. Thrush, *Mimocichla a. portoricensis*, at Mayaguez, x-18-30.

### **Myrsidea** sp.

on P. R. Thrush at Mayaguez, ii-7-36; on P. R. Petchary, *Tolmarchus taylori*, from Vieques Id., xii-26-35; on P. R.

Grackle, *Holoquiscalus n. brachypterus*, from Vieques Id., xii-30-35.

**Amysidea aurifasciatum** Kellogg—det. H. E. Ewing  
on "rabijunco" or frigate bird, *Fregata magnificens*, from  
Mona Id. (387-39).

## RICINIDAE

**Ricinus invadens** Kellogg  
on Prarie Warbler, *Dendroica d. discolor*, at Mayaguez,  
ii-7-36; on warbler or reinita, xii-29-35.

**Ricinus** sp.  
on Water-Thrush, *Seiurus n. noveboracensis*, from Vieques  
Id., xii-30-35; on P. R. Grackle, *Holoquiscalus n. brachyp-*  
*terus*, from Vieques Id., xii-30-35.

## PHILOPTERIDAE

**Lipeurus** sp. ?  
on Pearly-Eyed Thrasher, *Margarops f. fuscatus*, from  
Vieques Id., xii-28-35.

**Phlopterus quiscali** Osborn  
on P. R. Grackle, *Holoquiscalus n. brachypterus*, from  
Vieques Id., xii-30-35.

**Phlopterus subflavescens** Geoffrey ?  
on Martinique Dove, *Oreopeleia m. mystacea*, xii-28-35;  
on P. R. Ground Dove, *Columbigallina p. portoricensis*, xii-  
24-35, on Jamaican Mockingbird, *Mimus p. orpheus*, xii-31-  
35, on Pearly-Eyed Thrasher, *Margarops f. fuscatus*, xii-28-  
35, all from Vieques Id.

**Degeeriella complexiva** Kellogg & Chapman  
on Stilt Sandpiper, *Micropalama himantopus*, at Carta-  
gena Lagoon, ix-30-30.

**Degeeriella eustigma** Kellogg  
on Jamaican Mockingbird, *Mimus p. orpheus*, from Vie-  
ques Id., xii-31-35.

**Degeeriella illustris** Kellogg  
on P. R. Grackle, *Holoquiscalus n. brachypterus*, from Vie-  
ques Id., xii-30-35.

**Degeeriella** sp.  
on Gray Kingbird, *Tyranus d. dominicensis*, from Vie-  
ques Id., xii-28-35; on Lesser Yellowlegs, *Tringa flavipes*,  
from Vieques Id., xii-26-35; on Southern Little Blue Heron,  
*Florida c. caerulescens*, at Cartagena Lagoon, x-4-30; on  
Semipalmated Plover, *Charadrius h. semipalmatus*, at  
Mayaguez, x-21-30.

**Esthiopterum gracilicornis major** Kellogg—det. H. E. Ewing  
on "rabijunco" or Frigate Bird, *Fregata magnificens*, from  
Mona Id. (388-39).

**Esthiopterum** sp.

on Gray Kingbird, *Tyranus d. dominicensis*, from Vieques  
Id., xii-28-35; on Judío, *Crotophaga ani*, at Mayaguez, ii-8-  
36; on P. R. Grackle, *Holoquiscalus n. brachypterus*, from  
Vieques Id., xii-26-35 and from the same host and locality,  
xii-26-35, possibly a new species.

**Physconelloides** near *zenaidurae* McGregor

on P. R. Ground Dove, *Columbigallina p. portoricensis*,  
from Vieques Id., xii-24-35; on P. R. Golden Warbler, *Den-  
droica p. cruciana*, from Vieques Id., xii-27-35.

**Physconelloides** sp., probably new

on Gray Kingbird, *Tyranus d. dominicensis*, from Vieques  
Id., xii-28-35.

**Physconelloides** sp.

on Martinique Dove, *Oreopeleia m. mystacea*, from Vie-  
ques Id., xii-28-35.

**Columbicola** sp. nov.

on Gray Kingbird, *Tyranus d. dominicensis*, xii-28-35, on  
Antillean Sparrow Hawk, *Falco s. loquaculus*, xii-28-35, on  
P. R. Ground Dove, *Columbigallina p. portoricensis*, xii-  
24-35, all from Vieques Id.

page 55

#### EPHEMERIDA

Traver, Jay R., "Mayflies of Puerto Rico." Jour. Agr. Univ. P. R.,  
22(1): 5-42, pl. 3, ref. 23. San Juan, (April 15) January  
1938.

**Neohagenulus julio** Traver 38-9: TYPE from Adjuntas, P. R.

**Neohagenulus tinctus** Traver 38-12: TYPE from Luquillo Mts.,  
P. R.

**Neohagenulus luteolus** Traver 38-13: TYPE from Luquillo Mts.,  
P. R.

**Neohagenulus** spp. No. 1 & No. 2 Traver 38-16: nymphs.

**Borinquena carmencita** Traver 38-18: TYPE from El Yunque,  
P. R.

**Borinquena contradicens** Traver 38-20: TYPE from La Mina,  
El Yunque, P. R.

**Caenis** spp. No. 1 & No. 2 Traver 38-22: nymphs.

**Callibaetis completa** Banks ?

Traver 38-24: collected by F. Sein at Rio Piedras.  
females (7-30).

- Callibaetis** sp. Traver 38-25: nymphs, possibly *C. completa*.  
**Baëtis garcianus** Traver 38-26: TYPE from Rio Tamana, P. R.  
**Baëtis** spp. No. 1 & No. 2 Traver 38-28, 29: nymphs.  
**Cloëodes maculipes** Traver 38-33: TYPE from Luquillo Mts., P. R.  
**Cloëodes portoricensis** Traver 38-36: TYPE from Lares, P. R.  
**Cloëodes consignatus** Traver 38-37: TYPE from Rio Yunez, P. R.

page 56

## ODONATA

- Garcia-Diaz, Julio, "An Ecological Survey of the Fresh Water Insects of Puerto Rico. I. The Odonata: with new Life-Histories." Jour. Agr. Univ. P. R., **22**(1): 43-97, pl. 8, ref. 44. San Juan, (April 15) January 1938.

## LIBELLULIDAE

- Orthemis ferruginea** F.  
 common on Mona Id. (251-40 det. J. G. Needham).

page 57

- Erythrodiplax umbrata** L.  
 on Mona Id. (78-39, 250-40 det. J. G. Needham).

page 58

- Cannacria herbida** Gundlach  
 (as *Brachymesia*) Klots 32-51: IB-58:  
 Garcia-Diaz 38-58: generic transfer.

page 59

- Idiataphe cubensis** Scudder  
 (as *Ephidatia*) IB-59:  
 Garcia-Diaz 38-60: generic transfer.

page 60

- Enallagma cultellatum** Hagen  
 (as *E. cardenium* Selys—det. J. G. Needham) IB-60:  
 Garcia-Diaz 38-69: re-identification.

- Enallagma civile** Hagen  
 on Mona Id. (249-40 det. J. G. Needham).

page 63

## NEUROPTERA

## MYRMELEONIDAE

- Psammoleon bistichus** Hagen—det. N. Banks  
 common at light, Mona Id. (153-39, 236-40).

ASCALAPHIDAE

**Ululodes opposita** Banks, Nathan, "Antillean Ascalaphidae."  
 Jour. Agr. Univ. P. R., **22**(2): 177-180, pl. 1. San Juan,  
 (May) April 1938: TYPE from Cabo Rojo Lighthouse,  
 P. R.

a pair, resting on bushes, Faro de Cabo Rojo (65-37,  
 66-37 TYPES); at light, Mona Id. (154-39 det. N. Banks).

TRICHOPTERA

RHYACOPHILIDAE

**Atopsyche** sp.—det. C. Betten  
 Garcia-Diaz 38-96: No. 84.

PHILOPOTAMIDAE

**Chimarrha albomaculata** Kolbe 88-175: TYPE from P. R.  
 Gundlach.

IP-35 & IB-63: adults common at light at Mameyes (197-13  
 det. N. Banks).

Garcia-Diaz 38-96: No. 80.

Palmer, Boyd B., "A Contribution to the Life-History of  
*Chimarrha albomaculata* Kolbe from Puerto Rico (Tri-  
 choptera: Philopotamidae)." Ann Ent. Soc. America, **31**(1):  
 69-73, pl. 2, ref. 6. Columbus, Ohio, March 1938.

**Chimarrha** sp.—det. C. Betten  
 Garcia-Diaz 38-96: No. 81.

SERICOSTOMATIDAE

**Helicopsyche** sp.—det. C. Betten  
 Garcia-Diaz 38-96: No. 73, under Helicopsychinae.

CALAMOCERATIDAE

**Phylloicus** sp.—det. A. B. Gurney  
 in fruit-fly trap at Mayaguez (I No. 6861).

LEPTOCERIDAE

**Setodes candida** Hagen  
 Gundlach. Kolbe. IP-35 & IB-63.

**Setodes** sp.—det. C. Betten  
 Garcia-Diaz 38-96: No. 97.

HYDROPSYCHIDAE

**Smicridea** sp.—det. C. Betten  
 Garcia-Diaz 38-96: No. 74.

POLYCENTROPIDAE

New Genus—det. C. Betten  
 Garcia-Diaz 38-96: No. 82.



## PSYCHOMYIDAE

**Lype** sp.—det. C. Betten  
Garcia-Diaz 38-96: No. 83.

## HYDROPTILIDAE

**Hydroptila** sp.—det. C. Betten  
Garcia-Diaz 38-96: No. 75.

**Neotrichia** sp.—det. C. Betten  
Garcia-Diaz 38-96: No. 76.

New Genera—det. C. Betten  
Garcia-Diaz 38-96: No. 77.

**Oxyethira** sp.—det. C. Betten  
Garcia-Diaz 38-96: No. 78.

page 65

## THYSANOPTERA

**Heterothrips sericatus** Hood  
at Palo Seco (I No. 6504).

**Chirothrips mexicanus** Crawford  
Wadley 37-107: in heads of *Eleusine indica*.

**Heliothrips haemorrhoidalis** Bouché  
Fife 39-11: on wild and cultivated cotton, causing damage.  
on grape-fruit at Palo Seco (I No. 5987).

**Selenothrips rubrocinctus** Giard  
Anon 38-99: *Dasyscapus parvipennis* Gahan, a parasite of, introduced from the Gold Coast, via Trinidad, by S. M. Dohanian, reared and liberated in P. R. by K. A. Bartlett.  
Anon 39-108: not recovered.  
on almendra at Maunabo (7-40), at Dorado (I No. 6634);  
on *Coccolobis laurifolia* at Dorado (I No. 6532).

page 67

**Frankliniella insularis** Franklin  
Fife 39-11: of slight importance on cotton.  
in flowers of gardenia at Caguas (I No. 6495); in flowers of cannon-ball tree, *Couroupita guianensis*, at Mayaguez (I No. 6857).

page 68

**Thrips tabaci** Lindemann  
Anon 37-45: experiments in control conducted by L. B. Scott.  
Anon 39-108: host of *Dasyscapus parvipennis* Gahan in the laboratory.  
on onions, Mona Id. (29-40).

**Taeniothrips simplex** Morison—det. F. André  
on gladiolus (I No. 7207), at Barceloneta (97-40 det. J. R. Watson).

**Haplothrips gowdeyi** Hood

Fife 39-11: of slight importance on cotton.  
on *Blechnum blechnum* at Guaynabo (I No. 7178); on tube-  
rose flowers at Barceloneta (96-40 det. J. R. Watson).

**Aleudrothrips fasciapennis** Franklin  
on coconut palm (I No. 6113).

**Gynaikothrips uzeli** Zimmerman  
on *Ficus nitida* at Hda. Santa Catalina, El Yunque (354-  
39, 351-40).

page 70

**ANOPLURA**

for **Phthirus**, read **Phthirius**

page 72

**HOMOPTERA**

CICADIDAE

**Proarna hilaris** Germar  
at light in the Condado (I No. 7311, 7452); abundant on  
trees of *Samanea saman* at Salinas (247-39).

MEMBRACIDAE

**Nessorhinus gibberulus** Stal  
on coffee at Mayaguez (I No. 6096); on maga at Villalba  
(403-40).

Page 74

**Nessorhinus vulpes** Amyot & Serville  
on pigeon pea at Mayaguez (I No. 6058).

**Monobelus fasciatus** F.  
on dama de dia, *Cestrum diurnum*, at Guajataca (53-38).

page 75

CERCOPIIDAE

**Clastoptera brevis** Walker  
on coffee at Mayaguez (I No. 6098).

**Clastoptera** sp. "neither *brevis* nor *signifera*" Oman  
at Cidra (I No. 6783).

CICADELLIDAE (JASSIDAE)

Oman, P. W., "New Eupterygine Leafhoppers from Puerto Rico  
(Homoptera—Cicadellidae)." Jour. Agr. Univ. P. R., 21(4):  
567-570, pl. 1. San Juan, (November 12) October 1937.

**Agallia albidula** Uhler

Fife 39-10: on cotton.  
abundant on tobacco at Utuado (10-38); on weeds, Mona  
Id. (307-40 det. P. W. Oman).

page 76

**Agallia pepino** DeLong & Wolcott(as *Agalliopsis*) Anon 38-86: negative as vector of bunchy-top disease of papaya.

page 77

**Krisna insularis** Oman, P. W., "Two New Leafhoppers from Tropical America." Pan-Pacific Entomologist, **12**(3): 116-118. San Francisco, July 1936: TYPE, a male from Luquillo National Forest, P. R. (W. A. Hoffman).at light on El Yunque (19-37 det. P. W. Oman, 39-39); a nymph on tender leaf of *Eugenia stahlü*, near El Yunque Rock (143-40).

page 78

**Cicadella sirena** Stal

Fife 39-10: on cotton.

numerous adults resting on stem of *Lantana camara* killed by fungus, *Isaria* sp., at Guajataca (274-39); on Mona Id. (265-40).

page 79

**Cicadella similis** WalkerWadley 37-107: on *Panicum barbinode*.

Fife 39-11: on cotton.

page 80

**Kolla fasciata** WalkerWolcott, G. N. & Martorell, L. F., "Leafhopper Reaction to Lawn Sprinkling." Jour. Ec. Ent., **33**(3): 584. Menasha, Wisconsin, June 1940.

an extensive and serious outbreak, attacking and killing gramma grass in lawn near Aguadilla (20-40).

page 81

The legends underneath the two cuts should be transposed.

**Xerophloea viridis** F.

Fife 39-10: on cotton.

page 83

**Deltocephalus flaveolus** Osborn—det. J. A. Ramos

at light at Mayaguez, May 24, 1938 (Ramos Col.).

page 84

**Poeciloscata histrio** F.—det. P. W. Oman

Fife 39-10: on cotton.

on castor bean, Mona Id. (176-39).

page 86

**Cicadula maidis** DeLong & Wolcott(as *Baldulus*) Bartlett 39-497; parasitized by a Dryinid, *Gonatopus* near *bicolor* Ashmead.

Wolcott &amp; Martorell 37-537: quoting Mackie on occurrence of this Puerto Rican insect in California.

page 88

**Nesostelus incisus** Mats.

Wadley 37-107: swept from grasses.

Anon 38-86: negative as vector of bunchy-top disease of papaya.

**Protalebra aureovittatus** DeLong

on morál, *Cordia sulcata*, at El Verde, Rio Grande (157-40 det J. S. Caldwell).

page 89

**Protalebra brunnea** Oman 38-567: TYPE from Villalba, P. R.

page 90

**Empoasca fabalis** DeLong

Anon 37-42: a limiting factor in dry bean production in western P. R. (det. H. L. Dozier).

Anon 38-61: control by pyrethrum-soap spray at 10-day intervals (L. B. Scott).

Anon 38-63: "caused premature defoliation of small-seeded lima bean varieties."

**Empoasca gossypii** DeLong

Fife 39-10: on cotton, "occasionally - - - abundant enough to attain an economic status."

page 91

**Empoasca insularis** Oman, P. W., "New Neotropical Empoaskan Leaf-Hoppers." Jour. Washington Academy Science, 26(1): 34-40, fig. 2. Washington, 1936: TYPE from P. R.

**Empoasca minuenda** Ball

Wolcott 40-30: on maga.

**Empoasca papayae** Oman 37-570: TYPE from Mayaguez, P. R., on papaya, collected by J. H. Jensen.

Anon 39-125: a possible vector of bunchy-top disease of papaya.

**Joruma neascripta** Oman 37-568: TYPE from Manati, P. R., from icaco, *Chrysobalanus icaco*.

**Dikraneura cedrelae** Oman 37-567: TYPE from Villalba, P. R., others from Aibonito and Maricao, on West Indian Cedar, *Cedrela odorata* L. (L. F. Martorell).

Martorell & Wolcott 39-44: defoliating cedro trees.

on leaves of West Indian Cedar at Camp Doña Juana, Toro Negro Unit (21-36 TYPE), others from Villalba, Yabucoa, Aibonito, and Maricao; on host at Lares and Toa Alta (33-38), at Aibonito and Cayey (44-37), at Maricao (390-40), at Patillas (429-40).

**Dikraneura (Hyloidea) depressa** McAtee

Wolcott 40-30: on maga.

on maga at Arecibo (156-40 det. J. S. Caldwell).

**Dikraneura lentrosomae** Oman 37-568: TYPE from Mayaguez, P. R., swept from *Centrosema* by F. M. Wadley.

page 92

**Hybla maculata** McAtee

on emajagua, *Pariti tiliaceum*, at Cayey (159-40), on Mona Id. (215-40 det. J. S. Caldwell).

**Typhlocybella minima** Baker

Wadley 37-107: swept from *Bradburyana*.

FULGORIDAE

page 93

**Catonia cinerea** Osborn

Wolcott 40-30: on maga.

page 94

**Oliarus complectus** Ball

Fife 39-10: on cotton.

on weeds, Mona Id. (307-40 det. P. W. Oman).

page 96

**Epiptera floridae** Walker—det. P. W. Oman.

at light (I No. 6784).

page 97

**Neurotmeta viridis** Walker

at light, Mona Id. (282-40 det. P. W. Oman).

page 99

**Colpoptera maculata** Dozier

on Mona Id. (307-40 det. P. W. Oman).

page 102

**Ormenis marginata** Brunnich

Anon 38-92: on *Jasminum pubescens*,

on sea-grape and *Lantana*, Mona Id. (155-39); on *Coccolobis laurifolia*, Mona Id. (33-40); on *Inga vera* at Cayey (111-40).

**Ormenis pygmaea** F.

on *Lantana*, sea-grape and at light, Mona Id. (156-39); on *Coccolobis laurifolia*, Mona Id. (32-40).

page 103

**Ormenis quadripunctata** F.

on icaco at Joyuda (I No. 5912); on sea-grape, Mona Id. (170-39); on *Coccolobis laurifolia*, Mona Id. (34-40).

page 104

**Platoides punctata** Walker

at light, Mona Id. (157-39 det. P. W. Oman, 264-40); on sea-grape, Mona Id. (158-39 det. P. W. Oman); on *Coccolobis laurifolia*, Mona Id. (35-40).

page 105

**Flatoides brunneus** Muir  
on *Inga vera* at San Sebastian (50-38).

**Cedusa santaclara** Myers  
Wolcott 40-30: on maga.

page 106

**Peregrinus maidis** Ashmead  
Anon 36-15 & Anon 37-67: vector of a corn-stripe disease of corn.  
Wadley 37-107: on corn.

page 111

CHERMIDAE (PSYLLIDAE)

**Ceropsylla sideroxyli** Riley—det. H. L. Dozier  
a pit-forming Psyllid on leaves of *Sideroxylon foetidissimum* at Ciales (5-36), on Mona Id. (45-40).

APHIDIDAE

**Sipha flava** Forbes

Smith 37-832: attended by *Monomorium carbonarium ebeninum* Forel.

Smith 37-854: attended by *Wasmannia auropunctata* Roger.

Wadley 37-103 to 112: hosts, parasites and predators, "among the minor problems of cane growing."

Wolcott 37-47, Wolcott 37-55 & Wolcott 38-89: no suitable outbreaks of for conducting control experiments.

Wolcott 39-37: successful experiment in control by dusting with calcium cyanide dust.

Anon 39-98: control on lemon grass by *Acrostalagmus aphidum* Oud.

on lawn of *Polytrias amaura* at Mayaguez (I No. 5957); on sugar-cane at Arroyo (80-37), practically free from parasites and predators, and suitable for dusting experiment.

page 112

**Aphis asclepiadis** Fitch—det. P. W. Mason  
on *Asclepias curassavica* at Vega Baja (I No. 7215).

page 113

**Aphis gossypii** Glover

Smith 37-845: attended by *Crematogaster steinheili* Forel.

Smith 37-867: attended by *Prenolepis fulva* Mayr and by *P. longicornis* Latreille.

Fife 39-9: economic importance on cotton, parasites and predators.

on okra at Isla Verde (I No. 7389); on Santa Maria at Vega Alta (I.No. 6173); on *Hibiscus bifurcatus* (I No. 6312, 6342); on roble, *Tabebuia pallida*, (I No. 6691), at Cayey (355-40 det. P. W. Mason); on *Citrullus citrullus*, Mona Id. (213-40).

page 114

**Aphis maidis** Fitch

Wadley 37-103 to 113: hosts, parasites and predators, "Important in mosaic disease dissemination because more abundant in areas of rapid than of slow spread."  
on Sudan grass (134-40).

page 116

**Aphis spiraeicola** Patch

Smith 37-866: attended by *Brachymyrmex heeri* Forel.  
on grapefruit at Rincón (I No. 6725).

**Carolinaia cyperi** Ainslie

Wadley 37-107: only on *Cyperus*.

page 117

**Hysteroneura setariae** Thomas

Wadley 37-103-113: hosts, predators and parasites, "more abundant in dry weather."

**Toxoptera aurantiae** Koch

Smith 37-845: attended by *Crematogaster steinheili* Forel.  
Smith 37-854: attended by *Wasmannia auropunctata* Roger.  
on lime (I No. 6600, 6812); becoming very abundant on tender leaves of coffee in air-conditioned greenhouse when humidity did not go below 70% (87-40); on leaves and young shoots of mantecado, *Rapanea ferruginea*, at Maricao, elev. 1,300 ft. (354-40 det. P. W. Mason).

page 118

**Macrosiphum (Tritogenaphis) erigeronensis** Thomas—det. P. W. Mason

on *Erigeron canadensis* at Dorado (I No. 7208).

**Macrosiphum ambrosiae** Thomas—det. P. W. Mason

on branches and leaves of straw flower, *Helichrysum bracteatum*, at Camp Doña Juana, Villalba (175-40); on leaves and branches of *Salvia splendens*, Mona Id. (297-40 det. P. W. Mason).

**Myzus persicae** Sulzer

on papaya fruit at Isabela (38-38 det. P. W. Mason); on turnip leaves (I No. 7211).

**Phorodon menthae** Bückton—det. P. W. Mason

on mint (I No. 6329).

**Pentalonia nigronervosa** Cockerell

Smith 37-845: attended by *Pheidole s. borinquenensis* Wheeler.  
Smith 37-854: attended by *Wasmannia auropunctata* Roger.  
Smith 37-866: attended by *Brachymyrmex heeri* Forel.

**Trifidaphis phaseoli** Pass—det. P. W. Mason

on lima beans at Cidra (I No. 6214).

**Cerataphis lantaniae** Boisduval

Anon 39-120: on vanilla.  
on ? at Mayaguez (I No. 7294).

page 119

## COCCIDAE

**Crypticerya** sp., prob. **C. rosae** Riley & Howard

Wolcott (38-82: on casuarina at Ponce.  
on casuarina at El Vigia, Ponce (42-36), at Guanica (308-39); on lignum-vitae at Guanica (49-37).

**Icerya montserratensis** Riley & Howard

Wolcott 35-143: outbreaks at Barceloneta and Isabela.  
on casuarina at Mayaguez (131-40—det. J. A. Ramos).

page 120

**Icerya purchasi** Maskell (introduced) The Cottony Cushion Scale

Wolcott 35-143: spread to Vega Baja and Rio Piedras.  
Wolcott 37-46: of but minor importance in 1934-35.  
Wolcott 37-54: spread to Manatí (July), Humacao (October), and Arecibo (December) in 1935.  
Wolcott 39-82: spread to Camuy (October 1936).  
Wolcott 39-33: spread to Isabela and Mona Id.  
Wolcott 39-508: successful establishment in P. R. of predator upon.

Wolcott, G. N. & Martorell, L. F., "Epidemics of Fungus Disease Control Insect Pests in Puerto Rico." Jour. Ec. Ent., **33**(1): 201-2. Menasha, Wis., February 1940: control by *Spicaria javanica* 100% effective in humid citrus groves.

[Wolcott, G. N., "The Dispersion of the Cottony Cushion Scale in Puerto Rico in Eight Years." Caribbean Forester, **2**(3): 132-5, map. New Orleans, La., April 1941.]

on rose at Bayamon (I No. 6297), at Aibonito (187-40); on Don Tomás, *Adenoropium multifidum* (L.) Pohl.—det. J. I. Otero, (181-32); on lime at Punta Las Marias, Santurce (21-40); on casuarina at Manatí (54-35), on Trujillo Alto road (9-36) controlled by fungus, *Spicaria javanica*, at Arecibo (88-35), at Camuy (29-36), at Camp Guajataca, Ponce village, Isabela (1-38), on Mona Id. (125-39, 37-40), at Pen-nock's, Sabana Llana (55-39), at Camp El Verde, Rio Grande (370-40), at Mayaguez (130-40 det. J. A. Ramos), at Guanica (181-40); on gandúl, *Cajanus indicus*, at Isabela (34-37); on peppers, Mona Id. (125-39); on capá de obispo, *Acalypha wilkesiana* (109-40 J. S. Simons).

page 121

**Orthezia insignis** Douglass

on poleo, *Lippia stoechadifolia*, at Ponce (I No. 6938); on *Chenopodium ambrosoides* det. J. I. Otero, at Arecibo (305-32); on *Iresine* at Aguas Buenas (I No. 7458); on *Chione venosa* at Bayamon (I No. 7155).



**Lecaniodiaspis** sp. nov.—det. H. Morrison  
on *Inga vera* at Maunabo (73-37).

page 122

**Asterolecanium bambusae** Boisduval

Anon 38-36: on many species of bamboo at Mayaguez.

Anon 39-52 & 53: on bamboo, illustration.

on bamboo at Villalba (409-40).

**Asterolecanium militaris** Boisduval

Anon 38-36: on three species of bamboo at Mayaguez, especially *Bambusa vulgaris*.

Anon 39-52 & 53: on bamboo, illustration.

Bartlett 39-493: "usually attacks leaves" of bamboo.

**Asterolecanium pustulans** Cockerell

Bartlett 39-493: on culms and larger branches of bamboo.

Martorell 40-31: on *Cassia siamea* Lam. and other hosts.

[Wolcott, G. N., "An Outbreak of the Scale Insect, *Asterolecanium pustulans* Cockerell on Magz, *Montezuma speciosissima*." Caribbean Forester, 2(1): 6-7. New Orleans, La., October 1940.]

killing *Sciacassia siamea* (Lam.) Britton (5-34), at Toa Baja (45-37); on *Rapanea guianensis* at Dorado (I No. 7007); on *Taonabo stahlii* at Dorado (I No. 7008); on *Amygdalus persica* at Mayaguez (I No. 6094); on *Zanthoxylum flavum* (358-40 det. H. Morrison); on *Conocarpus erectus* at Boca de Cangrejos (375-40); causing leaves to wither and killing twigs and smaller lateral branches of maga, *Montezuma speciosissima*, at Isabela, Arecibo and Vega Alta (153-40, 373-40), at Cayey (378-40) and at Corozal (420-40).

**Asterolecanium** sp. nov.—det. H. Morrison  
on maga at Vega Alta (I No. 6069).

page 123

**Ceroputo barberi** Cockerell—det. H. Morrison

on *Forstiera* or *Mayepea* at Guanica Insular Forest (I No. 5929).

**Phenacoccus gossypii** Townsend & Cockerell

on *Malacha capitata* (I No. 6172), on *Ambrosia peruviana* (I No. 6176).

**Pseudococcus brevipes** Cockerell

Smith 37-838: attended by *Solenopsis geminata* F.

Smith 37-843: attended by *Pheidole megacephala* F.

Smith 37-845: attended by *Pheidole s. borinquenensis* Wheeler.

Smith 37-845: attended by *Crematogaster steinheili* Forel.

Smith 37-854: attended by *Wasmannia auropunctata* Roger.

Smith 37-866: attended by *Brachymyrmex heeri* Forel.

Smith 37-867: attended by *Prenolepis fulva* Mayr and *P. longicornis* Latreille.

Anon 38-98, Anon 39-106 & Bartlett 39-67 to 71: introduction of two parasites of, and recovery of one in P. R.

Fife 39-9: on cotton.

**Pseudococcus adonidum** L.

for "*Averrhoa carambola* L.," read *Barringtonia asiatica*; also on *Dracena fragrans* (23-35); an amaryllis, *Hippeastrum puniceum*, at Mayaguez (I No. 7419); on hibiscus (I No. 6365); on emejagua at Cayey (380-40).

**Pseudococcus citri** Risso

Smith 37-873: attended by *Myrmelachista ramulorum* Wheeler.

Fife 39-9: on cotton.

Wolcott 40-29: on maga

page 125

**Pseudococcus maritimus** Ehrhorn

on chayote (I No. 6107).

page 126

**Pseudococcus nipae** Maskell

Smith 37-845: attended by *Crematogaster steinheili* Forel.

Smith 37-873: attended by *Myrmelachista ramulorum* Wheeler.

Martorell 40-24: on anacaguitas, *Sterculia apetala*.

for "carambola tree," read, *Barringtonia asiatica*; also on avocado at Mayaguez (I No. 7418); on *Cenangium odoratum* at Dorado (I No. 4411); on *Sterculia apetala* at Guanica (76-40); on leaves of *Ficus lyrata* at Guayama (170-40); on *Callophyllum antillanum* at Guajataca (371-40); on laurél geo, *Ocotea portoricensis*, at Maricao (398-40); on laurél avisillo, (= geo) *Ocotea portoricensis*, at Ciales (419-40).

page 127

**Trionymus sacchari** Cockerell

Smith 37-854: attended by *Wasmannia auropunctata* Roger.

Smith 37-867: attended by *Prenolepis fulva* Mayr.

Wadley 37-103 to 113: on sugar-cane, especially POJ 2878, and sorghum.

page 128

**Pseudococcus (Ferrisia) virgatus** Cockerell

Smith 37-854: attended by *Wasmannia auropunctata* Roger.

Smith 37-866: attended by *Brachymyrmex heeri* Forel.

Fife 39-9: on cotton.

on *Melicocca bijuga* (I No. 6109).

**Antonina (Chaetococcus) bambusae** Maskell

Anon 38-36: on bamboo at Mayaguez.

page 129

**Pulvinaria psidii** Maskell

on *Cedrella odorata* (341-39).

**Pulvinaria urbicola** Cockerell

on sea-grape (GNW—det. H. Morrison) at Pt. Cangrejos, 1921.

**Ceroplastes denudatus** Cockerell

Fife 39-9: on cotton.

on coconut palm, Puerta de Tierra (I No. 6114); formerly reported from the introduced African cloth bark tree, *Ficus nekbuda*, Muños Rivera Park, Puerta de Tierra (26-33), from which the present infestation on coconut palm presumably came.

**Ceroplastes floridensis** Comstock

on coconut palm (I No. 6110).

page 130

**Vinsonia stellifera** Westwood

on *Garcinia* at Naguabo (I No. 7204).

**Eucalymnatus tessallatus** Signoret

on *Callophyllum antillanum* at Lares (359-40 det. H. Morrison).

**Coccus accuminatus** Signoret

on *Emelista tora* at Barceloneta (I No. 7160); on achiote at Salinas (I No. 6692).

page 131

**Coccus hesperidum** Green

on leaves of mango at Fajardo (116-39 det. H. Morrison), at Mayaguez (I No. 5990).

**Coccus viridis** Green

Smith 37-832: attended by *Monomorium c. ebeninum* Forel.

Smith 37-845: attended by *Pheidole s. borinquenensis* Wheeler.

Smith 37-854: attended by *Wasmannia auropunctata* Roger.

Smith 37-866: attended by *Brachymyrmex heeri* Forel.

Smith 37-873: attended by *Myrmelachista ramulorum* Wheeler.

Anon 38-80: on *Chinchona* spp.

Fife 39-9: on cotton.

on *Randia* at Arecibo (I No. 7430); attacking eggplant, almendra, *Coccolobis uvifera* and *C. laurifolia* on Mona Id. (110-39); on teak at Patillas (427-40).

page 132

**Saissetia nigra** Nietner

Fife 39-9: on cotton.

on maga at Vega Alta (I No. 6069; tremendously abundant on *Ficus lentiginosa* at Ponce (38-36 det. H. Morrison).

page 133

**Saissetia oleae** Bernard

Fife 39-9: on cotton.

on capá prieta, *Cerdana allidora*, at Salinas (8-40); on guava at San German (I No. 6183); on maga at Vega Alta

(I No. 6069), at Villalba (405-40); on almendra, Mona Id. (80-39); on *Sideroxylon foetidissimum* at Guanica (328-40); on *Cedrela mexicana* at Villalba (405-40); on *Tectona grandis* at Patillas (415-40); on *Zanthoxylum flavum* (358-40 det. H. Morrison).

page 134

**Howardia biclavis** Comstock

on *Bixa orellana* at Bayamon (I No. 6204); on *Myrcia citrifolia* at Dorado (I No. 7026); on *Tecoma pentaphylla* at Vega Alta (I No. 7152); on *Genipa americana* at San German (I No. 6184, 6474); on *Cedrela odorata* at El Verde, Rio Grande (355-40 det. H. Morrison).

page 135

**Aulacaspis pentagona** Targioni

Wolcott 37-45, Wolcott 37-57 and Wolcott 38-88: spraying experiments in attempted control on papaya.  
 Wolcott 39-36: best control found by Mr. L. A. Serrano of Isabela Sub-station to be high-power spraying with water.  
 Anon 38-80: on *Chinchona* spp.  
 Anon 38-98: parasites of, released in P. R.  
 Anon 39-100: fed to the lady-beetles, *Chilocorus cacti* L., introduced from Texas.  
 Anon 39-104: on *Calotropis gigantea*.  
 Martorell 40-31: on *Fraxinus*.  
 on garden pepper (I No. 6419); on geranium at Cayey (I No. 6509); on *Amygdalus persicae* at Mayaguez (I No. 6094); on *Fraxinus* sp. in Maricao Insular Forest (48-36 det. H. Morrison) and at Las Cruces (75-40), defoliating and killing trees; on *Solanum verbascifolium* at Camp Doña Juana, Villalba (357-40 det. H. Morrison); on *Erythrina glauca* at Villalba (356-40 det. H. Morrison).

page 136

**Pinnaspis (Hemichionaspis) minor** Maskell

(as var. *strachani* Cooley) Fife 39-9: on cotton and *Thespesia populnea*.  
 Wolcott 40-29: on maga.  
 on emajagua at Cayey (381-40): on "achiotillo" at Quebradillas (416-40); on tung oil tree at Patillas (430-40); on *Zanthoxylum flavum* (358-40 det. H. Morrison).

page 137

**Aspidiotus (Aonidiella) cocotiphagus** Marlatt

on tamarind (I No. 6106), at Arecibo (I No. 6075); on coconut (I No. 6110); on avocado (I No. 6148); on hibiscus (I No. 6353); on *Chalcas exotica* (I No. 7282); on *Jasminum sambac* (I No. 6197); on grape at Guaynabo (3-36 det. H. Morrison); on rose at Ponce (15-36 det. H. Morrison), at Bayamon (I No. 6297); on aceitillo, *Zanthoxylum flavum*, at Guanica Insular Forest (15-38 det. H. Morrison).

**Aspidiotus destructor** Signoret

Dohanian 37-243: "the coconut scale."

Anon 38-97: "notably reduced" by lady-beetles introduced from Trinidad.

Anon 39-106: host of *Axya trinitatis*.

on *Psidium guajava* (I No. 6171); on *Terminalia catappa* at Bayamon (I No. 6598), at Mayaguez (I No. 6386); on *Cocos nucifera* (I No. 6111, 6116), on Mona Id. (70-39); for "carambola tree" read *Barringtonia asiatica* (35-35 det. H. Morrison), also on this host on Mona Id. (71-39).

page 138

**Aspidiotus herculeanus** Doane & Hadden—det. H. Morrison

on *Phoradendron randiae* at Arcibo (I No. 7431); on *Tabebuia* at Vega Alta (I No. 7152).

**Aspidiotus** sp.—det. H. Morrison

on *Myrcia citrifolia* at Palo Seco (I No. 6500).

**Selenaspis (Pseudaonidia) articulatus** Morgan—The "W. I. Red" Scale of Citrus

on wild orange (7-39) defoliating tree, on which introduced lady-beetles from Trinidad, *Hyperaspis belloti*, were released; on kumquat at Mayaguez (I No. 6398); on *Malachra alceifolia* at Bayamon (I No. 6712); on *Thyella tamnifolia* at Manati (I No. 7140); on *Emelista tora* at Barceloneta (I No. 7160); on *Pothomorphe peltata* at Guaynabo (I No. 7174); on *Callophyllum antillanum* at Lares (359-40 det. H. Morrison).

page 139

**Chrysomphalus aonidium** L.—the "Florida Red" Scale of Citrus

on *Taonabo stahlii* at Dorado (I No. 7008).

**Chrysomphalus aurantii** Maskell—the "California Red" Scale of Citrus

on lemon imported from California, at Trujillo Alto (14-36 det. H. Morrison) and on wild, unbudded citrus seedlings (33-37), on orange (I No. 6646), on kumquat (I No. 6647), on lemon (I No. 6648, 6649); on grapefruit at Bayamon (I No. 6099).

page 140

**Chrysomphalus dictyospermi** Morgan

on rose at Bayamon (I No. 6297).

**Chrysomphalus (Melanaspis) portoricensis** Lindinger: Zeitschrift. f. Wissen., Insektbiol., Bd. VI, heft 12, p. 441, 1910 and Bd. VII, heft I, p. 9, 1911, TYPE from *Goccoloba excoriata* (= *venosa*), "Calambreña," at Cayay, P. R., near Las Cruces; possibly this sp., on sea-grape at Luquillo (702-40 det. H. Morrison).

**Chrysomphalus** sp.—det. H. Morrison  
on *Coccolobis pyrifolia* at Maricao (360-40) leaves and  
branches heavily infested (not the above sp.).

**Pseudischnaspis bowreyi** Cockerell  
on rose at Ponce (15-36 det. H. Morrison); on *Spondias*  
*purpurea* (I No. 6490).

page 141

**Pseudoparlatoria ostreata** Cockerell—the Grey Scale of Papaya  
Wolcott 37-57, Wolcott 38-88: spraying experiments in at-  
tempted control on papaya.

Wolcott 39-36: Mr. L. A. Serrano of Isabela Sub-Station  
found most effective control to be high-power spraying with  
water.

Anon 39-100: fed to *Chilocorus cacti* L., lady-beetles imported  
from Texas.

on papaya on Mona Id. (38-40), at Bayamon (I No. 6147);  
on cultivated grape at Guaynabo (3-36 det. H. Morrison).

**Pseudoparlatoria parlatorioides** Comstock—det. H. Morrison  
on leaves of *Laguncularia racemosa* at Faro de Cabo  
Rojo (55-37); on torchwood, *Amyris elemifera*, at Dorado  
(I No. 7210).

page 142

**Parlatoria pergandii** Comstock  
on kumquat at Barceloneta (I No. 6397).

**Lepidosaphes gloverii** Packard  
on lime (I No. 7165):

page 143

**Ischnaspis longirostris** Signoret  
Martorell 40-24: on Honduras mahogany, *Swietenia macro-*  
*phylla*.

on *Ficus nitida* on El Yunque (352-39, 363-40); on *Swie-*  
*tenia macrophylla* at Rio Grande (369-40).

ALEYRODIDAE

**Aleurodicus griseus** Dozier  
on *Eugenia ludibunda* at Palo Seco (360-39).

page 145

**Leonardius lahillei** Leonard  
on mistletoe on *Ficus* at Ciales (6-36 det. H. L. Dozier);  
on mistletoe on *Inga vera* at Jajome Alto (52-37).

**Bemisia inconspicua** Quaintance—det. M. D. Leonard  
on sweet-potato (48-38).

page 146

**Aleurotrachelus trachoides** Back  
on *Solanum torvum* at Isabela (39-36).

**Aleurotrachelus** sp. nov.—det. L. M. Russell  
on leaves of sea-grape at Quebradillas (33-39, 42-38).

**Tetraleurodes acaciae** Quaintance ?—det. P. W. Mason  
on *Meibomia supina* at Guaynabo (I No. 7166).

**Tetraleurodes** sp.—det. L. M. Russell  
on sweet-potato leaves (I No. 7281).

page 147

## HEMIPTERA

Barber, H. G., "Insects of Puerto Rico and the Virgin Islands—Hemiptera-Heteroptera (excepting the Miridae and Corixidae)." Scientific Survey of Puerto Rico and the Virgin Islands, 14(3): 263-441, fig. 36. New York Academy of Sciences, New York, July 7, 1939. "Since the manuscript of this article was completed before the receipt of the "Insectae borinquenses" of George N. Wolcott, all references to the species and other items of interest in that treatise are omitted."

### CORIXIDAE

**Arctocorixa** sp.—det. H. G. Barber  
Ramos Col., at Barranquitas xii-35, at Rio Piedras vi-12-32.

**Centrocorisa kollari** Fieber—det. H. B. Hungerford  
AMC: at Mayaguez x-32.

### BELOSTOMATIDAE

Cummings, Carl, "The Giant Water Bugs, Belostomidae—Hemiptera." Sci. Bul. Univ. Kansas, 21(2): 197-219, pl. 2, Lawrence, March 1933.

**Belostoma boscii** Lepeletier & Serville  
Barber 39-425: with *B. (Zaitha) anura* in synonymy, at Mayaguez, Cayey and Coamo.

page 148

**Belostoma minor** Duf.—det. H. G. Barber  
Ramos Col., at Guanica Lagoon, i-11-36.

**Lethocerus annulipes** Herrich-Schaeffer  
Cummings 33-203: collected by E. A. Waggener.  
Barber 39-426: at Ponce and Mayaguez.

**Lethocerus del-pontei** De Carlo  
Cummings 33-206: at San Juan.  
Barber 39-426: one specimen in USNM from Puerto Rico.

### NEPIDAE

for "**Ranatra australis** Hungerford" and "sp." read  
**Ranatra insulata** Barber 39-423: TYPE from Las Marias, P. R., illustration.

NAUCORIDAE

**Pelocoris femorata** P. B.

Barber 39-422: at Guanica and Desengaño.

page 149

NOTONECTIDAE

**Buenoa femoralis** Fieber (as *Anisops*) in "Rhynchota" 59, (1851): TYPE from P. R.

Barber 39-420: from San Juan, Coamo, Quebradillas, and Mona Id. (Lutz).

**Buenoa macrophthalma** Fieber (not *B. macrophthalmus*)

Barber 39-420: from five P. R. localities.

**Buenoa pallipes** F.

Barber 39-241: from Mona and Culebra Ids., Coamo, Aibonito and Aguadilla.

**Notonecta indica** L.

Hungerford, H. B., "The Genus *Notonecta* of the World, Notonectidae—Hemiptera." Sci. Bul. Univ. Kansas, 21(1):5-195, pl. 17. Lawrence, March 1933: p. 117, from Desengaño, P. R., June 1924 (Cornell Univ. lot 719).

AMC: at Mayaguez xii-34 det. Hungerford.

Barber 39-419: with *N. undulata* in synonymy, six P. R. localities.

all records as "*N. undulata*" and "*N. sp.*" go here.

PLEIDAE

**Plea punctifer** Barber

Barber 39-418: illustration.

**Plea puella** Barber

(as *Plea striola* Fieber) Wetmore 16-35, 75: eaten by Gallinule and Black Swift.

Barber 39-417: illustration.

SALDIDAE

**Pentacora signoreti** Guerin—det. H. B. Hungerford

AMC: at Boqueron vii-32, Mayaguez i-35, Arecibo. iii-35. around brackish pools, on beach at Maunabo (10-40 det. H. G. Barber).

**Pentacora sphacelata** Uhler

Barber 39-415: "Porto Rico near shore (no other data)—A. M. N. H."

**Saldula pallipes** F.

Barber 39-415: at Ensenada.

**Micracanthia humilis** Say ? (not *Micranthia*)

Barber 39-417: "a single male specimen from San Juan."



**Microcanthia sulcata** Barber 39-415: TYPE from Coamo Springs, P. R., other from Ciales. Illustration. the record "on weeds from Ciales (649-21)" goes here.

page 150

## VELIIDAE

**Microvelia capitata** Guerin

Barber 39-411: with *M. albonotata* Champion in synonymy. (as "sp.") Wetmore 16-40, 41: eaten by Killdeer and Spotted Sandpiper.

the records of *M. albonotata* go here, also, on surface of water (250-16), at light (203-11); at Guanica (EGS).

**Microvelia paludicola** Champion

Barber 39-413: at Coamo, Adjuntas and Ponce.

**Microvelia pulchella** Westwood

Barber 39-410: at Coamo and Aibonito.

**Microvelia robusta** Uhler

Barber 39-411: on Mona Id. and at six P. R. localities.

**Rhagovelia collaris** Burmeister

(as *R. tayloriella* Kirkaldy) Barber 23-13 listed.

(as *R. angustipes* Uhler) AMNH at Naguabo and Maricao.

Barber 39-413; synonymy, at thirteen P. R. localities. on El Yunque (95-35 det. H. G. Barber).

## GERRIDAE

**Limnogonus franciscanus** Stal

(as *Tenagogonus*• (*Limnometra*) *quadrilineatus* Champion)

Van Zwaluwenburg's list: det. O. Heidemann.

(as *Gerris marginatus* Guerin) Stahl. Wetmore 16-22: eaten by Cuban Green Heron.

(as *Limnotrechus marginatus* Guerin) Gundlach.

(as *Tenagogonus* (*Limnogonus*) *guerini* Lethierry & Severin)

Barber 23-13: listed.

(as *Gerris guerini* Lethierry & Severin) AMC collections.

(as *Limnogonus marginatus* Guerin) AMNH and AMC collections.

Drake, C. J. & Harris H. M., "Notes on some North American Gerrids (Hemiptera)." Arkiv. Zool., 28 B (1 No. 2): 1-4, fig. 1. Stockholm, 1935: synonymy.

Barber 39-407: from Vieques, Culebra and Mona Ids., and twelve P. R. records.

in water in ditch (712-16); at light at Guanica (614-13);

in cistern, Mona Id. (74-39) and in pools (207-40 det. H. G.

Barber).

**Gerris cariniventris** Champion

Barber 39-409: at Maricao and Barros.

**Gerris remigis** Say

Barber 39-408: at Quebradillas.  
presumably here goes also the "sp. nov.", in water at Ponce  
(I No. 5738).

**Rheumatobates imitator** Uhler

Barber 39-407: from Guayabál Reservoir (Hildebrand).

**Metrobates laudatus** Drake, C. J. & Harris, H. M., Revista  
Entomologia, 7 ( ): Rio de Janeiro, 1937: TYPE ? from  
Juana Diaz and Rio Piedras, P. R.

page 151

HYDROMETRIDAE

**Hydrometra consimilis** Barber

Barber 39-406: at Añasco.

CRYPTOSTEMMATIDAE

**Ceratocombus vagans** McAtee & Malloch

Barber 39-405: at Rio Piedras and Jayuya.  
here goes the "*C. minutus* Uhler—det. H. G. Barber  
on dead leaves (I No. 5907)."

page 154

MIRIDAE

**Paracarnus cubanus** Bruner—det. H. G. Barber

abundant on underside of leaves of *Fraxinus* sp. (ash) at  
El Verde, Rio Grande, and of *Cordia sulcata*, morál, and of  
emejagua, *Pariti tiliaceum*, there and at Cayey (352-40).

**Hyaloides vitreus** Distant

Wolcott 40-29: on maga.

**Lygus apicalis** Fieber

Fife 39-9: on cotton.  
at light, Mona Id. (377-39 det. H. G. Barber).

page 155

**Polymerus cuneatus** Distant

on sugar-cane at Salinas (258-39).

**Creontiades rubrinervis** Stal

Fife 39-8: on cotton.

page 156

ANTHOCORIDAE

**Paratriphleps pallidus** Reuter

Barber 39-404: at San Juan. Illustration.

**Orius insidiosus** Say

Barber 39-403: many records.

**Asthenidea picta** Uhler

Barber 39-402: no new records.

**Xylocoris sordidus** Reuter

(as *Piezostethus*) Barber 23-13: listed.  
Barber 39-401: from Mona Id. (Lutz).

**Cardiastethus rugicollis** Champion

(as *C. assimilis* Reuter) Dozier 27-280: on *Ficus nitida*, predaceous on thrips.  
Barber 39-402:  
on papaya at Arecibo (I No. 4678).

**Macrotracheliella laevis** Champion

Barber 39-403:

**Macrotracheliella nigra** Parshley

Barber 39-403: possibly a misidentification.

**Lasiochilus divisus** Champion

Barber 39-401: from Vieques Id.

**Lasiochilus microps** Champion ?

Barber 39-401: ?

presumably this is "*L. fuscus* Reuter—det. H. G. Barber, on decayed flower stalk of banana at Bayamon (I No. 2444 Leonard 33-132)."

**Lasiochilus pallidulus** Reuter

Barber 39-400: from Vieques Id. (Leonard).

page 157

## POLYCTENIDAE

**Hesperoctenes fumarius** Westwood

Barber 39-399: on bat from Vieques Id. (Busck).

## CIMICIDAE

**Cimex hemipterus** F.

Riley, W. A. & Johannsen, O. A., "Medical Entomology," 1932, p. 157: presence in P. R.

Barber 39-398: many records.  
on Mona Id. (75-39).

## NABIDAE

**Metatropiphorus drakei** Harris, Halbert M., "A Monographic Study of the Hemipterous Family Nabidae as it occurs in North America." *Entomologica America*, 9(1 & 2): 1-90, pl. 4, 1928: p. 73, TYPE from Utuado, P. R.

Barber 39-395: not seen.

**Neogorpis neotropicalis** Barber

Harris 28-83:

Barber 39-396: no new records, illustration.

**Carthasis gracilis** Harris

Barber 39-396: with *C. minor* Reuter in synonymy, at Aibonito, Aguirre (Box) and Rio Piedras. (4-25).

**Nabis capsiformis** Germar—det. H. G. Barber

Fife 39-9: on cotton.  
on string beans at Loiza (I No. 6781).

**Nabis spinicrus** Reuter

Barber 39-395: with *N. signatus* in synonymy, at Aibonito.

**Nabis sordidus** Reuter

Barber 39-395: at San Juan, Coamo and Tallaboa.

**Pagasa fusca** Stein

Barber 39-394: from Coamo Springs.

MESOVELIIDAE

**Mesovelia mulsanti caraiba** Jaczewski

Barber 39-393: at seven P. R. localities.  
on lily pond (I No. 7180).

page 158

REDUVIIDAE

**Heza pulchripes** Stal, Oefv. Vet.—Akad. Forh., 1859: p. 199, TYPE from P. R.

Barber 39-389: "apparently confined to P. R."

**Heza angulifer** Barber 39-389: TYPE from Bayamon, P. R., others from Ponce and Mayaguez. Illustration.

here belongs "*Heza* sp. nov.—det. H. G. Barber on *Crotalaria* at Mayaguez (I No. 5816.)"

**Stenopoda cinerea** Laporte

Stahl. (as *S. culiciformis* F.) Gundlach.

Barber 39-388: synonymy.

AMC: at Luquillo vi-32, Coamo i-32, Mayaguez ix-30, v-31. (284-12), at light (137-32).

**Narvesus caolinensis** Stal—det. H. G. Barber

AMC: at Luquillo vi-32.

**Pnirontis infirma** Stal

Barber 39-388: at Isabela (Leonard).

on flowers of *Amaranthus* (506-16 det. H. G. Barber).

**Perigrinator biannulipes** Montrouzier

Plank 39-151: records from P. R.

**Zelus longipes** L.

Barber 39-391: "convinced that Champion was correct in stating in reference to *Z. rubidus* 'perhaps not really distinct from *Z. longipes* L.'"

Fife 39-9: on cotton.

page 159 all the records of *Z. rubidus* should come here, as well as that of "(as "sp.") Wetmore 16-61, 77, 80: eaten by Ani, Kingbird and Petchary.", together with the following new records:

feeding on *Cycloneda sanguinea*, Mona Id. (101-39); on flowers of *Borreria verticillata* at Yabucoa (318-39); on flowers of *Heliotropum indicum*, Vieques Id. (103-40).

**Zelus subimpressus** Stal

Barber 39-392: at six P. R. localities.

on guava (493-16 det. H. G. Barber); all stages at Vega Alta (219-17 det. H. G. Barber).

**Zelus nugax** Stal

Barber 39-392: "should be referred to *Leptocoris filiformis* Fabricius."

**Rasahus biguttatus** Say

Barber 39-389: Danforth's and Cotton's collections.

(as *R. hamatus* F.—det. H. G. Barber) AMC: at Yabucoa vii-20.

on grapefruit tree (560-17).

**Ploiaria gundlachi** Dohrn

Barber 39-387: at Mayaguez, Coamo and Isabela.

**Empicoris barberi** McAtee & Malloch (not *Empicornis*)

Barber 39-386: generic transfer from *Ploiarodes*.

at light (I No. 5591, det. H. G. Barber as *E. subparallelus* McAtee & Malloch).

page 160

**Empicoris armatus** Champion

Barber 39-387: at Aibonito and from Vieques Id. (Leonard).

on foliage of grapefruit at Vega Alta (222-17 det. W. L. McAtee as *Ploiarodes armatus*).

**Empicoris rubromaculata** Blackburn

Barber 39-386: generic transfer from *Ploiarodes*, the records in IP-243 and IB-160 under this generic name, and from Vieques Id. (Leonard).

**Emesopsis nubilis** Uhler

Barber 39-386: from Vieques Id. (Leonard).

under dead leaves (I No. 6000).

**Ghilianella longula** McAtee, W. L. & Malloch, J. R., "Revision of the American Bugs of the Reduviid Subfamily Ploiarinae."

No. 2573. Proc. U. S. Nat. Mus., 67(1): 1-153, pl. 9. Washington, 1925: TYPE from Cuba.

Barber 39-388: from El Yunque (Leonard).

**Ghilianella varicornis** Dohrn

McAtee & Malloch 25-96 & 101: female described.

Barber 39-387: listed.

**Emesa tenerrima** Dohrn

Barber 39-387: noting McAtee & Malloch 25-46, generic transfer from *Westermannia*.

## ENICOCEPHALIDAE

**Enicocephalus semirufus** Barber 39-382: TYPE from Adjuntas, P. R., other from Yauco. Illustration.

## PHYMATIDAE

**Phymata marginata** F.

Barber 39-373: Gundlach's record as *P. erosa* in synonymy, eight other P. R. records.

**Macrocephalus crassimanus** F.

Barber 39-378: seven P. R. records.  
on *Inga laurina* at Lares (155-22 det. W. L. McAtee as *M. bergrothi* Handl.).

page 161

**Macrocephalus leucographus** Westwood

Barber 39-379: re-determinations.  
on coffee at Lares (287-21 det. W. L. McAtee as *M. granulatus* Champion); on *Inga laurina* at Adjuntas (I No. 3872 det. as "sp. nov.").

**Macrocephalus pulchellus** Westwood

Barber 39-379: not seen in P. R.

**Macrocephalus productus** Barber 39-376: TYPE from Aibonito, P. R., illustration.

**Macrocephalus spiculissimus** Barber 39-374: TYPE from Aibonito, P. R., illustration.

a very spiny nymph from leaves of *Inga vera* (80-23 det. GNW, confirmed H. G. Barber).

**Extraneza nasuta** Barber 39-380: TYPE from Yauco, P. R., Illustration.

on ? at Yauco (I No. 5767 det. as "*Macrocephalus* sp. nov.").

## TINGITIDAE

**Leptopharsa illudens** Drake = *Atheas pallidus* Barber 23-6: TYPE from P. R.

Barber 39-370: at Arecibo and Mayaguez.

**Corythucha gossypii** F. (not *Corythuca*)

Anon 38-86 & Anon 39-123: negative results in experiments used as vector of bunchy-top disease of papaya.

Fife 39-9; on cotton.

Barber 39-368: description and economic summary.

Martorell 40-23: on aceitillo, *Zanthoxylum flavum*; carubio, *Z. monophyllum*; and espino rubiál, *Z. caribaeum*.

on castor bean, Mona Id. (172-39 det. H. G. Barber, 31-40); on *Ichthyomethia pispicula* and castor bean, Vieques Id. (101-40); on *Capparis baducca* at Guanica (345-40).

page 162

**Corythaica carinata** Uhler

Barber 39-369: four P. R. records.

Fife 39-9: on cotton.

**Corythaica planaris** Uhler

Barber 39-369: all over P. R. on eggplant and *Solanum torvum*.  
on eggplant (I No. 6331).

page 163

**Monanthia c-nigrum** Champion

Barber 39-372: only Danforth's record from Joyuda.

**Monanthia monotropidia** Stal

Barber 39-371: at Aibonito and Arecibo.

Martorell 40-23: heavy investigations on capá prieto, *Cerdana alliadora* R. & P. (= *Cordia Gerascanthus* Jacq.), at Cayey and Salinas.

all stages abundant on underside of leaves of capá prieto at Cayey (90-40), presumably on this host in mountains north of Yauco (266-22).

**Teleonemia sacchari** F.

Barber 39-371: with previous records of *T. prolixa* Stal from P. R. in synonymy, nine new P. R. records.

page 164

**Leptodictya bambusae** Drake

Barber 39-370: also in Haiti.

PYRRHOCORIDAE

**Dysdercus andreae** L.

Barber 39-366: from Culebra and Mona Ids., many P. R. records.

Fife 39-7: on *Thespesia populnea*, *Abitilon hirtum*, *Sida* sp. and cotton.

Wolcott 40-30: feeding on seeds of maga.

**Dysdercus sanguinarius** Stal

Barber 39-366: six P. R. records.

Fife 39-7: on cotton, maga and *Thespesia populnea*.  
on *Sterculia apetala* at Mayaguez (I No. 7224).

**Dysdercus suturellus** Herrich-Schaeffer

Barber 39-366: Ballou's 1906 record.

**Largus obovatus** Barber

Barber 39-164: generic transfer from *Euryophthalmus*, and with P. R. record of *Largus rufipennis* Castelnau and *L. varians* Stal in synonymy. Illustration.

page 165

## LYGAEIDAE

**Oncopeltus aulicus** F.

Barber 39-336: from Culebra Id. (Busck).

Fife 39-9: on cotton.

on Mona Id. (15-37 det. H. G. Barber, 98-39), on blossoms of *Colubrina colubrina*, *Moringa moringa* and *Pisonia albida* (206-40 det. H. S. Barber).**Oncopeltus fasciatus** Dallas

Barber 39-325: many P. R. records.

on milkweeds at Vega Baja (I No. 7449).

**Lygaeus albonotatus** Barber

Barber 39-337: illustration.

page 166

**Lygaeus coccineus** Barber

Barber 39-338: illustration.

**Lygaeus collaris** F.

Barber 39-337: at seven P. R. localities.

Fife 39-9: on cotton.

here should go all records of *Lygaeus bicrucis* Say, also the new records: at Aguadilla (22-40); on blossoms of *Pisonia albida*, Mona Id. (248-40).**Lygaeus pulchellus** F.

Barber 39-336: from Mona Id.

abundant and mating on *Corchorus hirsutus* at Pt. Can- grejos (79-16 det. H. G. Barber).**Ortholomus jamaicensis** Dallas

Barber 39-340: many P. R. records, Vieques Id. (Busck).

**Nysius ericae** Schilling

Barber 39-342: from Mona Id., Caguas and Adjuntas.

**Nysius inaequalis** UhlerBarber 39-341: with *N. basalis* in synonymy, from Desecheo and Mona Ids. (Crampton).**Nysius strigosus** Uhler

Barber 39-342: at Tallaboa and from Mona Id. (Lutz).

**Cymoninus notabilis** Distant (not *Cymoninus*)

Barber 39-344: at Caguas, Coamo and Añasco.

**Ischnorhynchus championi** Distant

Barber 39-344: many P. R. records, from Mona Id. (Crampton).

**Cymus virescens** F.

Barber 39-343: at Aguirre, Ponce, Añasco and Santurce. Illus- tion.



page 167

**Ischnodemus sallei** Signoret

Barber 39-345: Danforth's records.

**Blissus leucopterus** Say(as var. *insularis* Barber) Wadley 37-107: on grass.Anon 37-93: attacking *Polytrias amaura*, a Java grass at Mayaguez.

Barber 39-345: from Mona Id. (Crampton).

killing out extensive patches of malojillo grass as Manatí (266-39); on young sugar-cane at Canovanas (50-37); on grass, Mona Id. (99-39).

**Geocoris thoracicus** FieberBarber 39-346: with previous P. R. records as *G. lividipennis* in synonymy, at San Juan and Ensenada.

at Faro de Cabo Rojo viii-36 (J. A. Ramos).

**Ninyas deficiens** Lethierry

Barber 39-346: at Aibonito and Adjuntas.

page 168

**Clerada apicornis** Signoret

Barber: 39-363: cosmopolitan.

**Paragonatas divergens** Distant

Barber 39-363: at Lares (Sein).

**Ligyrocoris abdominalis** Guérin

Barber 39-350: at Tallaboa.

**Ligyrocoris litigiosa** Stal

Barber 39-350: at Bayamon (Busck).

**Paromius longulus** Dallas

Barber 39-350: at many P. R. localities, Mona and Desecheo Ids.

**Pachybrachius bilobatus** Say(as *Orthaea*) Fife 39-9: on cotton.Barber 39-353: generic transfer from *Orthaea*; at many P. R. localities, also Vieques Id.**Pachybrachius intermedius** BarberBarber 39-353: generic transfer from *Orthaea*; at Cataño and Isabela, illustration.**Pachybrachius scutellatus** Dallas—det. H. G. Barber.

Ramos Col., at Mayaguez v-22-40.

**Pachybrachius servillei** Guérin

Barber 39-354: at Humacao.

**Pachybrachius vinctus** Say

Barber 39-353: many P. R. records, also Mona and Vieques Ids.

**Heraeus guttatus** Dallas

Barber 39-354: at light at Isabela (Leonard).

**Exptochiomera minima** Guérin

Barber 39-355: generic transfer from *Ptochiomera*; at Ensenada, Adjuntas, Aguirre and San German.

**Pachygrontha bimaculata** Distant

Barber 39-347: from Mayaguez (Danforth).

**Pachygrontha parvula** Barber

Barber 39-348: a single male from Mona Id.

page 169

**Ozophora atropicta** Barber 39-356: TYPE from Manatí, P. R., others from five P. R. localities, the Bahamas and Hispaniola. on grass at Bayamon (I No. 5464 det. as "sp. nov.").

**Ozophora burmeisteri** Guérin

Barber 39-355: at four P. R. localities.

**Ozophora pallescens** Distant

Barber 39-361: at San Juan, Dorado, Guayama, El Yunque and from Vieques Id. at light (251-16 det. W. L. McAtee); at light at Palo Seco (I No. 6565).

**Ozophora quinquemaculata** Barber 39-359: TYPE from Vieques Id., others from six P. R. localities; previously reported as *O. concava* Distant. Illustration.

**Ozophora subimpicta** Barber 39-358: TYPE from Mayaguez, P. R., others from El Yunque, Aibonito and Adjuntas, also from Hispaniola. Illustration.

NEIDIDAE

**Jalysus reductus** Barber 39-331: TYPE from Mona Id., others from Hispaniola, Mexico and Central America. Illustration. Previously listed from P. R. as *J. spinosus* Say.

ARADIDAE

**Mezira abdominalis** Stal

Barber 39-330: at Mayaguez (Landrón).

**Aneurus minutus** Bergroth

Barber 39-330: from Adjuntas.

in decaying wood at Adjuntas (I No. 5491 det. as *A. politus* Say by HGB); nymph in dead leaves (I No. 5909).

COREIDAE

**Leptoglossus balteatus** L.

Barber 39-311: at Guanica.

**Leptoglossus gonagra** F.

Barber 39-310: common in P. R.

on *Lantana* at Guajataca (273-39); on *Borreria verticillata*  
at Aguadilla (283-39).

page 170

**Leptoglossus stigma** Herbst

Barber 39-311: "chief food-plant apparently guava."

on guava at Sabana Grande (84-37).

**Phthia picta** Drury

Barber 39-312: from Culebra Id. (Busck).

on eggplant, Mona Id. (102-39).

? **Phthia rubropicta** WestwoodBarber 39-312: distinct from *P. lunata*, which is continental,  
but under which West Indian records have been given.**Spartocera batatas** F.

Barber 39-314: illustration.

page 171

**Spartocera fusca** Thunberg

Barber 39-313: many records.

**Sephina erythromelaena** WhiteBarber 39-316: re-determination of *S. indierae* Wolcott as identical with this continental species.**Chariesterus gracilicornis** StalBarber 39-316: all *C. moestus* records from P. R. are this species.

Fife 39-9: on cotton.

page 172

**Althos obscurator** F.Barber 39-318: generic transfer from *Margus*, specimens from Aibonito.**Catorhintha guttula** F.

Barber 39-318: from Vieques Id. (Busck) and Mona Id.

Fife 39-9: on cotton.

**Catorhintha borinquensis** Barber

Barber 39-319: illustration.

**Anasa scorbutica** F.

Barber 39-320: injurious to Curcubitaceae.

on squash at Morovis (I No. 7397).

**Zicca taeniola** Dallas

Barber 39-320:

page 173

**Sphictyrtus whitei** Guérin

Barber 39-321: illustration.

common on Mona Id. (97-39, 30-40) adults in swarms clinging to lower branches of trees in shade of cliff, no apparent preference as to kind of tree, and not feeding. At top of cliff, adults on tender leaves of *Coccolobis laurifolia*, possibly feeding (GNW):

**Leptocorixa filiformis** F. (not *Leptocoris*)

Fife 39-9: on cotton.

Barber 39-324: five P. R. records.

Barber 39-392: "*Zelus nugax* Stal, recorded by Wolcott from Porto Rico, should be referred to *Leptocorixa filiformis* Fabricius."

the records of *Zelus nugax* (IB-159) should thus come here, also: on Mona Id. (159-39):

**Hyalmenus longispinus** Stal

Barber 39-323: from Mona Id.

**Megalotomus rufipes** Westwood

Barber 39-323: many records.

Fife 39-9: on cotton.

**Harmostes affinis** Dallas

Barber 39-326: from Aguirre (Box).

**Harmostes serratus** F.

Barber 39-325: many records.

**Exogenus extensum** Distant (not *extensus*)

Barber 39-326: from San Juan.

page 174

**Corizus hyalinus** F.

Barber 39-327: from Mona Id. (Lutz) and Vieques Id. (Busck).

Fife 39-9: on cotton.

on weeds at Mayaguez (I No. 5943).

**Corizus sidae** F. (with "? prob. *vincentii* Westw." penciled in by HGB)

Barber 39-327: from Mona and Desecheo Ids. (Lutz) and Vieques and Culebra Ids. (Busck).

Fife 39-9: on cotton.

**Jadera rubrofusca** Barber

Barber 39-328: all P. R. records of *Jadera* refer to *rubrofusca*; illustration, from *Scirpus validus* at Ponce (Oakley) and from Culebra Id. (Wheeler).

nymphs on *Serjania polyphylla* at Barceloneta (I No. 7162).

page 175

## PENTATOMIDAE

**Megar**is is a genus of the Scutelleridae and should be on p. 182.

**Mormidea angustata** Stal

Barber 39-288: from Mona Id.

**Mormidea cubrosa** Dallas

Barber 39-287: with *M. sordidula* Stal in synonymy.  
Fife 39-9: on cotton.

**Solubea insularis** Stal

Barber 39-289: at Mayaguez (Danforth).

**Solubea pugnax** F.

Barber 39-288: at Coamo.

**Euschistus acuminatus** Walker

Barber 39-289: illustration.

**Euschistus fifibulus** P. B.

Barber 39-290: many records.  
on tobacco at Utuado (12-38).

page 176

**Euschistus crenator** F.

Barber 39-291: from Culebra Id.

**Proxys victor** F.

Barber 39-291: Gundlach's record of *P. punctulatus* may be a misidentification.

**Thyanta antiguensis** Westwood

Barber 39-293:  
on sugar-cane at Salinas (294-39).

**Thyanta casta** Stal

Barber 39-293: from Vieques Id., Aguirre, Coamo and Ensenada.

**Thyanta perditor** F.

Barber 39-292: from Mona Id.  
Fife 39-9: on cotton.

page 177

**Loxa pilipes** Horvath, in Ann. Mus. Nat. Hungary, 22: 318, pl. 5, fig. 5, 1925: TYPE from P. R.

Barber 39-294: with *Loxa flavicollis* in synonymy; from Coamo Springs, El Yunque and Lares.  
AMC: at Mayaguez x-37, det. H. G. Barber.

**Loxa planifrons** Barber & Bruner

Barber 39-294:

**Fecelia minor** Vollenhoven, *in* Verd. Akad. Amst. Nat. 2(2): 178, (1868): TYPE from P. R.  
Barber 39-294: at nine P. R. localities.  
apparently puncturing grapefruit, at Las Marias (I No. 5941).

**Fecelia** sp. nov.—det. H. G. Barber  
AMC: at Mayaguez viii-37, x-37.

**Runibia perspicua** F.  
AMC: on Vieques Id. xii-35 det. H. G. Barber.  
Barber 39-295: no P. R. record.

**Vulsiera violacea** F.  
Barber 39-295: only Oakley's specimen from Ponce.

**Nezara viridula** L.  
Wolcott 37-82: in pellet of toad excrement.  
Anon 38-86 & Anon 39-128: negative as vector in bunchy-top disease of papaya experiments.  
Barber 39-296: cosmopolitan.  
Fife 39-8: on cotton.  
on Mona Id. (96-39, 267-40); injurious to tobacco at Utuado (11-38).

page 178

**Acrosternum marginatum** P. B.  
Barber 39-296: TYPE from Hispaniola.  
Fife 39-8: on cotton.  
on Mona Id. (118-39).

♀ **Banasa herbacea** Stal  
Barber 39-297: at Santurce, Ensenada and from Vieques Id.

**Banasa humeralis** Barber 39-297: TYPE from San German, P. R., illustration.  
AMC: (as "sp. nov." det. H. G. Barber) at Luquillo vii-32 and Añasco xii-35.

**Piezodorus guildinii** Westwood (not *guildingi*)  
Barber 39-299: many records.  
Fife 39-8: on cotton.

**Piezodorus tinctus** Distant  
Barber 39-299: from Aibonito.

**Arvelius albopunctatus** DeGeer  
Barber 39-300: many records.  
on pepper at Vega Baja (I No. 7390); apparently feeding on immature eggplant fruits, at Mayaguez (I No. 5942); on Mona Id. (95-39).

**Brepholoxa rotundifrons** Barber 39-300: PARATYPE from Ensenada, P. R., illustration.

**Edessa cornuta** Burmeister

Barber 39-302: with *E. bifida* in synonymy, many P. R. records.  
on sugar-cane at Quebradillas (224-39).

page 179

**Edessa parvinula** Barber

Barber 39-302: illustration.

page 180

**Alcaeorrhynchus phymatophorus** P. B.

Barber 39-303: with *Mutyca grandis* Dallas in synonymy; at  
Cayey.

on palo verde, *Parkinsonia aculeata*, at Faro de Cabo Rojo  
(60-37 det. H. G. Barber).

**Pharypia pulchella** Drury

Barber 39-295: at Mayaguez.

**Andrallus spinidens** F.—det. H. G. Barber

in cane field at Guanica (70-37).

**Podisus borinquensis** Barber 39-305: TYPE from Ponce, P. R.,  
others from Rio Piedras, illustration.

These are the specimens referred to as "*Podisus sculptus*  
Champion—det. W. L. McAtee, on coffee leaves (726-17)"  
and "*Podisus* sp. nov.—det. H. G. Barber, on weeds at Ponce  
(I No. 4629)."

**Podisus mucronatus** Uhler

Barber 39-304: at Guanica (Dozier).

**Podisus sagitta** F.

Barber 39-304: many records.

Fife 39-8: on cotton.

**Piezosternum subulatum** Thunberg

Barber 39-307: many records.

nymph on vine at Mayaguez (I No. 7380).

page 181

## CYDNIDAE

**Allocoris minuta** Uhler

Barber 39-269: generic transfer (after McAtee & Malloch)  
from *Corimelaena* and *Eucoria*. At five P. R. localities.

**Aethus communis** Uhler

Barber 39-271: at Bayamon (Busck).

**Aethus indentatus** Uhler

Barber 39-272:

**Geocnethus reversus** Barber & Bruner

Barber 39-272: no new records.

**Amnestus diminuatus** Barber 39-274: TYPE from Adjuntas, P. R., on coffee. Illustration.

**Amnestus pusio** Stal

Barber 39-274: "often confused with *A. pusillus* Uhler." From Vieques Id.

at light at Isabela (180-31 det. H. G. Barber), at Guajataca (74-38, 13-40).

**Amnestus subferrugineus** Westwood

Barber 39-273: from Adjuntas and Cayey.

page 182

SCUTELLERIDAE

**Pachycoris fabricii** L.

Barber 39-282: "There is only one species in Porto Rico."

All the records under *P. torridus* Scop. are this species, also: resting on sugar-cane at Isabela (255-39); on ?, Mona Id. (99-39); adults and eggs on *Cordia nitida* at Maricao (388-40).

**Megarix puertoricensis** Barber 39-283: TYPE from Aibonito, P. R., on *Eugenia* ? (Oakley). Illustration.

**Tetyra antillarum** Kirkaldy

Barber 39-282: at Guanica (Smyth).  
at light at Guanica (1097-13).

**Diolcus boscii** F.

Barber 39-280: "not yet discovered in Porto Rico."

**Diolcus disjunctus** Barber 39-281: TYPE from Ponce, P. R., others from Mayaguez and Rio Piedras. Illustration.  
at Salinas (373-39).

**Diolcus irroratus** F.

Barber 39-280: many P. R. records, also from Culebra Id.  
Fife 39-9: on cotton.

**Symphylus caribbeanus** Kirkaldy

Barber 39-278: with Gundlach's record of *Mesotrypa sinuosa* Uhler MS in synonymy; at Ponce (Oakley).

**Sphyrocoris obliquus** Germar

Barber 39-278: Gundlach's record.

**Augocoris illustris** F.

Barber 39-278: with Gundlach's record of *A. sexpunctatus* F. in synonymy; at Mayaguez (Danforth).

**Geotomus spinolai** Signoret

Ramos Col., at light at Humacao iii-18-40.



page 184

## COLEOPTERA

## CICINDELIDAE

**Tetracha sobrina** Dejean, var. **infuscata** Mannerheim  
Wolcott 37-82: in pellet of toad excrement.

page 185

**Cicindela boöps** Dejean  
thousands around salt pools, Faro de Cabo Rojo (58-37).

page 186

**Cicindela trifasciata** F.  
on beach of salt lagoons at Ensenada (37-36); at window  
of new Station building (230-39); in sandy cane fields at  
Yabucoa (236-39).

## CABARIDAE

Darlington, Jr., P. J., "West Indian Carabidae II." *Psyche*,  
42(4): 167-215. Cambridge, 1935.

"West Indian Carabidae V, new forms from the Domini-  
can Republic and Puerto Rico." *Mem. Soc. Cubana de*  
*Historia Natural*, 13(2): 79-101. Habana, April 1939.

**Scarites mutchleri** Bänn  
Darlington 39-81: with *S. montanus* Mutchler in synonymy.

**Scarites danforthi** Darlington 39-80: TYPE from Maricao Forest,  
at 3,000 ft., P. R.

**Oxydrepanus coamensis** Mutchler  
Darlington 39-84: generic transfer from *Dyschirius*; collected  
on El Yunque.

**Clivinia limbipennis** Duval—det. P. J. Darlington.  
AMC: at Cabo Rojo xii-31.

page 187

**Aspidiglossa aerata** Putzeys—det. P. J. Darlington  
AMC: at Mayaguez v-36.

**Bembidion portoricense** Darlington 39-86: TYPE from El Yun-  
que, P. R.  
AMC: paratypes from El Yunque v-38.

**Bembidion viridicolle** Laferte = *B. chevrolati* C. & H.  
Ramos Col.: at Ensenada i-37—det. P. J. Darlington.

**Tachys corruscus** Leconte—det. P. J. Darlington  
Ramos Col.: at Mayaguez viii-32, Añasco ii-37.

**Tachys carib** ?  
Darlington 35-176: TYPE from Haiti, also in P. R.  
Ramos Col.: at Mayaguez iii-36.

page 188

- Galerita microcostata** Darlington  
(597-16 det. P. J. Darlington).
- Lebia marginicollis** Dejean—det. P. J. Darlington  
(252-12, 645-17 det. P. J. Darlington).
- Apenes marginalis** Dejean  
the "as sp." records are this, det. P. J. Darlington.
- Apenes pallipes** F.—det. P. J. Darlington  
Ramos Col.: at Mayaguez vi-31, ix-31.  
(I No. 6167).
- Apenes portoricensis** Darlington 39-100: TYPE from Guanica Lagoon, P. R.
- Perileptus dentifer** Darlington 35-177: TYPE from Haiti, also in Puerto Rico.  
AMC: in river gravel at Mayaguez iii-36.
- Pentagonica picipes** Darlington 35-212: TYPE from Jamaica, also in Puerto Rico.  
Ramos Col.: at Mayaguez xii-36, Luquillo vi-32.
- Brachinus brunneus** Castelnau  
at light at Guanica (377-13 det. A. J. Mutchler).
- Loxandrus celeris** Dejean—det. P. J. Darlington  
Ramos Col.: at Guanica Lagoon i-36.

page 190

- Phloeoxena portoricensis** Darlington 39-99: TYPE from El Yunque, others from Maricao, P. R.  
Ramos Col.: paratypes from El Yunque v-38.
- Selenophorus alternans** Dejean  
at light (I No. 6051), at Guanica (574-13 det. A. J. Mutchler).
- Selenophorus beauvoisi** Dejean—det. P. J. Darlington  
AMC: at Ensenada iii-36.
- Selenophorus chalybeus** Dejean  
at light at Guanica (691-13 det. A. J. Mutchler).
- Selenophorus ramosi** Darlington 39-97: TYPE from Guanica Lagoon, others from Ensenada, P. R.  
at light at Guanica (1095-13 det. P. J. Darlington).
- Selenophorus sinuatus** Gyllenhal  
at Caguas (SSC det. A. J. Mutchler); at Cayey, reported attacking tobacco leaves (343-23 det. P. J. Darlington).

page 191

- Colpodes estriatus** Darlington 39-96: TYPE from El Yunque, P. R.  
Ramos Col.: paratype from El Yunque v-38, elev. 3,000 ft.

## DYTISCIDAE

**Rhantus calidus** F.—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Laccophilus proximus** Say  
Garcia-Diaz 38-94: listed, det. A. J. Mutchler.

**Pachydrus globosus** Aubé  
Garcia-Diaz 38-94: listed.

**Pachydrus brevis** Sharp  
Garcia-Diaz 38-94: listed.

**Hydrocanthus iricolor** Say  
Garcia-Diaz 38-94: listed.

**Copelatus angustatus** Chevrolat  
Garcia-Diaz 38-94: listed.

**Eretes sticticus** L.—det. L. L. Buchanan  
in salt lagoon at Ensenada (36-36).

page 192

**Thermonectes basillaris** Harris—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Thermonectes circumscriptus** Latreille  
Garcia-Diaz 38-94: listed.

**Thermonectes margineguttatus** Aubé  
Garcia-Diaz 38-94: listed.

**Megadytes giganteus** Castelnau  
Wolcott 37-79: larvae of predaceous on tadpoles of *Bufo marinus* L.  
in pool at Pt. Las Marias (41-36).

## GYRINIDAE

**Dineutus metallicus** Aubé  
Garcia-Diaz 38-94: listed.

**Dineutes americanus** L.—det. L. L. Buchanan  
from reservoir at Malezas farm, Aguadilla (263-39).

**Dineutus longimanus** Olivier, var. **portoricensis** Ochs  
Garcia-Diaz 38-94: listed.

page 193

**Gyrinus rugifer** Regimbart  
Garcia-Diaz 38-94: listed.

## HYDROPHILIDAE

**Derallus rudis** Sharp—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Enochrus nebulosus** Say—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Enochrus ochraeus** Melsheimer—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Berosus tessellatus** Fleutiaux  
Garcia-Diaz 38-94: listed.

**Berosus guadeloupensis** Fleutiaux & Sallé—det. A. J. Mutchler  
Garcia-Diaz 38-94: listed.

**Stethoxus insularis** Castelnau  
(as *Hydrophilus*) Garcia-Diaz 38-94: listed.

**Stethoxus intermedius** J. Duval  
(as *Hydrophilus ater intermedius* J. Duval) Garcia-Diaz 38-95:  
listed.  
at light (I No. 7331 det. L. L. Buchanan as *S. ater*),  
(336-39).

**Nechydrophilus phallicus** Orohymont—det. A. J. Mutchler  
Garcia-Diaz 38-95: listed.  
(291-22 det. A. J. Mutchler).

page 194

**Tropisternus collaris** F.  
Garcia-Diaz 38-95: listed.

**Tropisternus lateralis** F.  
Garcia-Diaz 38-95: listed.

page 195

**Paracymnus subcupreus** ? Say—det. A. J. Mutchler  
Garcia-Diaz 38-95: listed.

**Ochthebus** sp.—det. A. J. Mutchler  
Garcia-Diaz 38-95: listed.

**Pelosoma** sp.—det. A. J. Mutchler  
Garcia-Diaz 38-95: listed.

**Phaenotypus palmarum** Schwarz—det. A. J. Mutchler  
Garcia-Diaz 38-95: listed.

**Dactylosternum abdominale** F.  
the specimen recorded as *D. flavicorne* Mulsant “common  
under bark of decaying bucare tree, *Erythrina glauca*, at  
Cayey (30-217)” has been re-determined by A. J. Mutchler  
as this species; also, in cacao pods at Mayaguez (I No. 6385);  
in decaying fig at Mayaguez (I No. 6258).

**Cercyon** sp.  
in cacao pods at Mayaguez (I No. 6375).

page 196

## STAPHYLINIDAE

**Leiodes** sp.—det. W. S. Fisher  
in decaying wood at Mayaguez (I No. 6373).

**Holotrochus cylindricus** Erichson  
in rotten wood at Añasco (I No. 6238), at Mayaguez (I  
No. 6361 det. as "sp.").

page 197

**Philonthus alumnus** Erichson  
in icaco pods at Mayaguez (I No. 6370 det. as "sp.");  
in guavas at Mayaguez (I No. 6381), at light at Palo Seco  
(I No. 6564).

page 198

**Coproporus pulchellus** Erichson—det. E. A. Chapin  
in guavas at Mayaguez (I No. 6383).

**Gyrophaena** sp.  
common on a fungus, at Mayaguez (I No. 6371); in cacao  
pods at Mayaguez (I No. 6378).

page 199

## PTILIIDAE

**Acrotrichis atomaria** DeGeer  
Leng & Mutchler.  
three species in cacao pods at Mayaguez (I No. 6377,  
6385).

## SCAPHIDIIDAE

**Scaphisoma** sp.—det. H. S. Barber  
in decaying wood at Añasco (I No. 6234).

## HISTERIDAE

**Plaesius javanus** Erichson  
Anon 38-101: a predator on *Cosmopolites sordidus* Germar  
introduced from Java.  
Anon 39-109: not recovered.

**Lioderma 4-dentatum** F.  
under bark of decaying bucare tree at Mayaguez (I No.  
7269).

**Hister** sp. "near *coenescens* Erichson"—det. H. S. Barber  
at Coamo (I No. 5932); in dung at Añasco (I No. 6264).

**Omalodes ruficlavis** Sharp  
in flight at Salinas (298-39).

page 200

LYCIDAE

The record of *Thonalmus dominicensis* Chevrolat is unquestionably in error, the specimens (re-determined LFM & GNW) being the following:

**Thonalmus chevrolati** Bourgeois

Wolcott & Martorell 37-578: did not eat egg-clusters of *Diatraea saccharalis* F. in captivity.

Wolcott & Martorell 37-535 to 536: definitely established in Puerto Rico.

adults in cane field at Guanica (17-36 det. GNW), at Yauco (5-37), at Guayanilla (27-37, 279-39, 323-39), at Aguadilla (137-40).

page 205

CORYNETIDAE

**Necrobia rufipes** DeGeer

AMC: on dried meat at Mayaguez, December 1939, det. E. A. Chapin (H. Ayguabibas).

LYMEXYLIDAE

**Atractocerus brasiliensis** Laporte & Serville (not in PTINIDAE, IB-239)

at light at Lares, collected by Felipe Mora (76-38 det. H. S. Barber).

page 206

OEDEMERIDAE

**Oxaxis litoris** Wolcott

resting on leaves of sea-grape at Dorado (I No. 6531 det. H. S. Barber), on Mona Id. (383-39), also resting on leaves of Honduras mahogany and castor bean, and at light, Mona Id. (201-40).

**Ananca vittata** F.

resting on leaves of sea-grape, and at night (August) common at light, Mona Id. (91-39, 202-40).

page 207

MORDELLIDAE

Ray, Eugene, "Synopsis of the Puerto Rican Beetles of the Genus *Mordellistena*, with Descriptions of New Species." Proc. U. S. Nat. Mus., 84(3020): 389-399, fig. 1, ref. 5. Washington, 1937.

**Mordellistena annuliventris** Quedenfeldt

Ray 37-390: "ventral surface bicolorous," at Aibonito (Oakley).

- Mordellistena angustiformis** Ray 37-390: TYPE from Yauco, P. R., others from Adjuntas.
- Mordellistena barberi** Ray 37-395: TYPE from Ponce, P. R. (Oakley) on moca, female on coffee at Juana Diaz.
- Mordellistena danforthi** Ray 37-392: TYPE from Villalba, P. R.
- Mordellistena ehippium** Ray 37-398: TYPE from Aibonito, P. R., other from Ponce on *Eugenia* (Oakley).
- Mordellistena ferruginea** F.  
Ray 37-390: "entire body surface flavous," eleven specimens.
- Mordellistena humeralis** Ray 37-393: TYPE from Villalba, P. R.
- Mordellistena leai** Ray 37-396: TYPE from Bayamon, P. R. (Lesne), other from Maricao.
- Mordellistena lineata** Ray 37-395: TYPE from Guanica, P. R.
- Mordellistena lucidovriga** Ray 37-398: TYPE from Maricao, P. R. (Morrison).
- Mordellistena marginicollis** Mäklin, F. W., "Neue Mordelliden." Acta Soc. Sci. Fennicae, 10( ): 561-595, 1875.
- Mordellistena signaticollis** Quedenfeldt  
Ray 37-390: "hind basitarsus with 2 oblique ridges."
- Mordellistena varietas** Ray 37-391: TYPE from Adjuntas, P. R., others from Villalba and Maricao.
- Mordellistena y-nigrum** Ray 37-397: TYPE from Juana Diaz, P. R., on *Inga laurina* (Oakley).

page 208

## RHIPIPHORIDAE

- Macrosiagon discicolle melanoptera** Chevrolat  
on leaves of sugar-cane at Isabela (2-38); on flowers of *Borreria verticillata* at Aguadilla (53-39), at Yabucoa (313-39), at Vega Baja and Rio Blanco (66-40).
- Macrosiagon flavipennis** Lea—det. G. E. Bryant (Brazilian specimens)  
on flowers of *Hyptis atrorubens* (369-39) on flowers of *Borreria verticillata* at Vega Baja (64-40), at Luquillo (178-40).

page 209

## MELOIDAE

- Tetraonyx quadrimaculatus** F.  
on flowers of lavender pea at Guajataca (272-39).

page 210

ELATERIDAE

**Chalcolepidius silbermanni** Chevrolat (not *Chalcolepidus*)  
at Aguadilla (40-38); reared from dead trunk of *Albizzia lebbeck* infested with Cerambycid larvae, at Ponce (65-39).

page 211

**Pyrophorus luminosus** Illiger

Jepson 36-6, 14 to 17: predacious on white grubs, collections and observations in Puerto Rico, and results of shipments to Mauritius.

Jepson, W. T., "A Summary of the Results of the Phytalus Investigation, 1933-36." pp. 19. Port-Louis, Mauritius, 1936: survival of the journey to Mauritius from Puerto Rico; more should be imported.

Anon 38-102: shipments to Mauritius.

Wolcott 37-44: negligible mortality in shipments totaling 3,500 larvae to Barbados.

Wolcott 37-81: in toad excrement.

at light at Rio Piedras and on sugar-cane at Aguadilla (163-40), the first noted in several years, since *Bufo marinus* became abundant.

page 212

**Conoderus bifoveatus** P. B. (not *Monocrepidus*)

on sugar-cane at Quebradillas (223-39), at Aguadilla (262-39); at Mayaguez (I No. 7296).

page 213

**Aeolus elegans** F.

hiding in gall-deformed leaves of ucar, Vieques Id. (99-40).

**Dicrepidius ramicornis** P. B. ?—det. W. S. Fisher

under castor bean leaf, Mona Id. (88-39).

page 214

BUPRESTIDAE

**Acmaeodera gundlachi** Fisher

resting on weeds, Mona Id. (94-39 det. W. S. Fisher).

page 215

**Polycesta porcata** F.—det. W. S. Fisher

resting on cane leaf at Juana Diaz (17-37); reared from larva in furniture made of mahogany imported from Santo Domingo (182-40).

**Polycesta thomae** Chevrolat

on Mona Id. (20-37 det. W. S. Fisher).

**Chrysobothris megacephala** Castelnau & Gory

reared from aceitillo, *Zanthoxylum flavum*, at Guanica Insular Forest (62-38).



**Chrysobothris tranquebarica** Gmelin

on dead *Inga vera* tree at Ciales (35-36); on dead *Bucida buceras* tree at Guayanilla (43-37); on stump at Mayaguez (I No. 7271).

**Chrysobothris wolcotti** Fisher

all immature stages in crape myrtle (69-37); in cane field at Ponce (68-37 det. W. S. Fisher).

page 216

**Micrasta oakleyi** Fisher

on castor bean leaf, Mona Id. (177-39 det. W. S. Fisher as "sp. nov., close to *oakleyi* Fisher").

## ELMIDAE

**Cylloepus danforthi** Musgrave

Garcia-Diaz 38-94: listed.

**Neelmis gracilis** Musgrave

Garcia-Diaz 38-94: listed.

**Phanocerus hubbardi** Schaeffer—det. P. N. Musgrave

Garcia-Diaz 38-94: listed.

page 217

## HELODIDAE

**Ptilodactyla** sp. "perhaps *emarginata* Chevrolat"

on decaying wood at Mayaguez (I No. 6382).

page 218

## DERMESTIDAE

**Globicornis fulvipes** Guerin

in dead butterflies (I No. 6865).

**Dermestes caninus** Germar—det. H. S. Barber

larvae and adults in shell of dead sea turtle, Mona Id. (262-40), and on goat hides.

## OSTOMIDAE

**Tenebroides mauritanicus** L.

at light, Mona Id. (122-39).

page 219

## NITIDULIDAE

**Conotelus fuscipennis** Erichson

in flowers of gardenia at Caguas (I No. 6496 det. as "sp.").

**Carpophilus dimidiatus** var. **mutilatus** Erichson

in stored mahogany seed at Cayey (22-37 det. E. A. Chapin).

**Carpophilus hemipterus** L.  
Wolcott 40-30: in maga pods.

**Haptoncus luteolus** Erichson  
in fruits of *Triphasia trifolia* at Palo Seco (I No. 6501);  
at light, Mona Id. (379-39 det. E. A. Chapin).

page 220

**Lobiopa insularis** Castelnau  
in rotten guava fruits (I No. 7050); under bark of tree at  
Bayamon (I No. 6426).

MONOTOMIDAE

**Europs apicalis** Reitter  
Wolcott 40-30: in maga pods.

page 221

CUCUJIDAE

**Silvanoprus scuticollis** Walker—det. Ferd. Nevermann  
at Mayaguez ix-28 (S. T. Danforth).

**Ahasverus (Cathartus) advena** Waltl  
(I No. 6578); under bark of dead tree, Mona Id. (180-  
39 det. W. S. Fisher as "sp.").

page 223

**Telephanus pallidulus** Chevrolat  
on grapefruit leaf at Bayamon (I No. 6002).

page 224

COLYDIDAE (NOT COLYDIDAE)

**Synchita grannulata** Say (not *granulata*)  
under bark of fence post on El Yunque (355-39).

**Bitoma undata** Guerin  
in decaying wood at Añasco (I No. 6240).

page 225

**Philothermus puberulus** Schaufuss—det. W. S. Fisher.  
on El Yunque (I No. 6566); on decaying wood at Añasco  
(I No. 6239).

LATHRIDIIDAE (NOT LATHRIDIIDAE)

**Eufalia unicostata** Belon—det. W. S. Fisher  
[Hoffman, W. A., "*Eufallia unicostata*, a Fungus Eating Beetle  
New to Puerto Rico." Jour. Ec. Ent. **33**(5): 810-11. Mena-  
sha, Wis., October 1940.]  
larvae (det. W. H. Anderson) reared on fungus growing  
on, and adults abundant on casein-wash walls, School of  
Tropical Medicine (W. A. Hoffman).

## PHALACRIDAE

**Phalacrus acutangulus** Chevrolat—det. A. J. Mutchler  
in old cotton bolls at Pt. Cangrejos (552-22); at light  
(340-39).

**Euxestus erithacus** Chevrolat  
at light (I No. 6527).

**Acylomus** sp.—det. W. S. Fisher  
at light, Mona Id. (379-39).

page 226

## COCCINELLIDAE

Bartlett, K. A., "A search in the Guianas and Trinidad for Predatory Beetles of the Bamboo Scales." Jour. Agr. Univ. P. R., 22(4): 493-5. San Juan, March 23, 1939.

**Coelophora inaequalis** F.—Introduced  
Anon 39-98: predaceous on aphids in Hawaii, released at Mayaguez, Cabo Rojo and Villalba.

**Hyperaspis apicalis** Mulsant  
(as "sp.") Anon 39-98: predaceous on *Sipha flava* at Arroyo.  
Martorell 40-24: attacking *Pseudococcus nipae*.

**Hyperaspis belloti**—Introduced  
146 adults collected by K. A. Bartlett in Trinidad,  
B. W. I., released at Rio Piedras, P. R. (8-39).

**Hyperaspis connectens** Thunberg  
Fife 39-10: predaceous on *Aphis gossypii*.

**Hyperaspis trilineata** Mulsant—Introduced  
Wolcott 37-44: introduction from Barbados, releases at Isabela,  
Fajardo, Arroyo, Aguirre and Guanica.

**Pentilia insidiosa** Mulsant (= *castanea* Mulsant)—Introduced  
Bartlett 39-494 and Anon 39-105: from Trinidad and British  
Guiana, reared in-laboratory and released.

**Delphastus** sp.—Introduced  
Bartlett 39-494 and Anon 39-103: from Trinidad, predaceous  
on bamboo scales.  
(as "related to *Delphastus* sp.") abundant on papaya  
infested with scale at Isabela (44-39 det. E. A. Chapin).

**Curinus** sp.—Introduced  
Bartlett 39-494 and Anon 39-103: from Trinidad, predaceous  
on bamboo scales.  
Anon 39-106: from Martinique, F. W. I.

**Platynotus lividigaster** Mulsant—Introduced  
Anon 39-99: from Australia via Hawaii, released at Lajas.

**Scymnus aeneipennis** Sicard—Introduced  
Dohanian 37-244: from Trinidad.

page 228

**Scymnus roseicollis** Mulsant

Fife 39-10: predaceous on *Aphis gossypii*.  
on castor bean plants, Mona Id. (174-39 det. E. A.  
Chapin); on maga leaves at Lares (422-40); on *Tabebuia*  
*pallida* at Cayey (353-40).

**Decadiomus pictus** Chapin

feeding on scales on coconut (I No. 6112 det. as "sp."  
E. A. Chapin).

page 229

**Cryptolaemus montrouzieri** Mulsant—Introduced

Wolcott 39-508: successful establishment in P. R.

Fife 39-10: predaceous on cotton mealybugs.

on guava bushes at Sabana Grande (97-37); on *Rauwolfia*  
*tetraphylla* infested with *Coccus viridis* at Aguadilla (6-38);  
feeding on cottony cushion scale at Isabela (54-39).

**Rodolia (Vedalia) cardinalis** Mulsant—Introduced

Wolcott 37-54, Wolcott 38-82, Wolcott 39-33; a supply main-  
tained in the Insectary at the Experiment Station for release  
where outbreaks of the cottony cushion scale occur.

Wolcott 39-508: successfully established in P. R.

on Mona Id. (126-39, 40-40, 254-40); natural spread to  
Mayaguez from Guajataca (132-40).

**Psorolyma maxillosa** Sicard

at Mayaguez (I No. 6097), at Lares (423-40).

page 230

**Scymnillus nunenmacheri** Sicard

Martorell 40-24: feeding on *Pseudococcus nipae*.

**Scymnillodes cyanescens violaceus** Sicard (not *violaceus*)

Bartlett 39-493: feeding on bamboo scale.

page 231

**Psyllobora nana** Mulsant.

Fife 39-10: predaceous on *Aphis gossypii*.

page 232

**Cycloneda sanguinea** L.

Wolcott & Martorell 37-578: did not eat egg-clusters of *Diatraea*  
*saccharalis* F. in captivity.

Wadley 37-107: a predator on *Sipha flava*.

Anon 39-89: a predator on *Sipha flava*.

Fife 39-10: a predator on *Aphis gossypii*.  
on weeds, Mona Id. (92-39).

**Daulis ferruginea** Olivier

abundant on leaves and flowers of *Inga laurina*, Peñon del Collao, Cayey (125-40).

**Cryptognatha nodiceps** Marshall—Introduced

Dohanian 37-244: attacking bamboo scales in Trinidad.

Anon 38-97: "well established" in P. R.

Bartlett 39-494: introduced from Trinidad.

Anon 39-104: feeds on coconut scales in P. R., not on bamboo scales.

**Cryptognatha simillina** Sicard—Introduced

Dohanian 37-244: attacking bamboo scales in Trinidad.

Anon 38-97: "well established" in P. R.

Bartlett 39-494: introduced from Trinidad.

Anon 39-104: feeds on coconut scales in P. R., not on bamboo scales.

**Azya trinitatis** Marshall—Introduced

Dohanian 37-244; attacking bamboo scales in Trinidad.

Anon 38-97: "well established" in P. R.

Bartlett 39-494: introduced from Trinidad.

Anon 39-104: feeds on coconut scales in P. R., not on bamboo scales.

page 233

**Egius platycephalus** Mulsant—Introduced

Anon 39-102: from Cuba, predaceous on bamboo scales.

**Chilocorus cacti** L.—Introduced

Anon 39-100 to 102: introduced from Texas and Cuba, reared on papaya scales in P. R., released on scale-infested bamboo. Illustration.

feeding on papaya scales at Arecibo and Isabela (95-40).

## ALLECULIDAE

**Hymenorus** sp. "probably new" det. E. A. Chapin

at light and on weeds, Mona Id. (123-39, 203-40).

page 234

## TENEBRIONIDAE

**Opatrinus pullus** Sahlberg (not *Hopatrinus*)

on Mona Id. (12-37 det. as "sp." E. A. Chapin, 192-39).

**Blapstinus punctatus** F.

on Mona Id. (195-39 det. as "sp." E. A. Chapin).

**Phaleria variabilis** Quedenfeldt

under seaweed on the beach at Pt. Cangrejos (390-22 det. A. J. Mutchler), at Santurce (I No. 7318), at Cataño (I No. 5966, 5967); at light, Mona Id. (195-39 det. as "prob." E. A. Chapin).

page 235

**Eutomus cornutus** Arrow—det. E. A. Chapin  
on fungus at Mayaguez (I No. 6376).

“genus near **Pentaphyllus**”—det. E. A. Chapin  
in polypore fungus on El Yunque (I No. 6519).

page 236

**Dioedus** sp.  
at Mayaguez (I No. 6365).

**Doliema pallida** Say  
on Mona Id. (221-39 det. E. A. Chapin, 39-40), under  
bark of *Elaphrium simaruba* at Guanica (332-40).

page 239

ANOBIIDAE

**Lasioderma serricorne** F.  
Gage 39-22: attacking tobacco in storage.  
in cigar (I No. 6733); in imitation leather hat-box (28-39).

page 240

**Catorama herbarium** Chevrolat  
in binding of books (I No. 7092, 7093).

page 242

BOSTRYCHIDAE

**Dinoderus minutus** F.  
Anon 36-18: “not a termite, as the Spanish term ‘polilla’ might  
be taken to indicate.”  
Anon 37-30 to 38: experiments in control on bamboo conducted  
by Donald F. Gibbons and Harold K. Plank. Hot creosote  
effective.  
Anon 39-29 to 36: summarizing the studies of H. K. Plank in  
control as a pest on bamboo.  
Anon 39-109 to 118: experiments in control by absorption of  
chemicals showed lowest infestation in bamboo cured in the  
clump (check).  
Plank, H. K., “*Peregrinator biannulipes* Montr., a Predator on  
the Bamboo Powder-Post Beetle in Puerto Rico.” Jour. Ec.  
Ent., 32(1): 151. Menasha, Wisconsin, February 1939.

page 243

**Apate francisca** F.  
Martorell & Wolcott 39-44: effective control of an extensive  
outbreak in young mahogany trees near Guayanilla.  
Martorell 39-251: host trees and control.  
larvae, pupae and adults in mahogany log at Mayaguez  
(38-37); female beetles attacking Dominican mahogany,  
flamboyant, ucar and casuarina seedlings, 3 to 4 years old,  
at Guayanilla (39-37); attacking cultivated grape vine at  
Ponce (63-38); attacking mangle poles used for drying  
tobacco, Tobacco Institute.

**Zylomeira torquata** F.

at light, Mona Id. (162-39, 375-39 det. W. S. Fisher).

page 244

## CISIDAE

**Ceracis** sp.—det. W. S. Fisher

on polypore fungus (I No. 6141, 6142).

**Lycetus caribeanus** Lesne—det. W. S. Fisher

Anon 39-118: in stored bamboo at Mayaguez.

in mahogany sapwood made up into furniture (31-39 det. W. S. Fisher).

**Cis** sp.

on fungus at Mayaguez (I No. 6364); in decaying wood at Añasco (I No. 6230).

page 245

## SCARABAEIDAE

Chapin, E. A., "A Revision of the West Indian Beetles of the Scarabaeid Subfamily Aphodiinae." Proc. U. S. Nat. Mus., 89(3092): 1-41. Washington, D. C., May 23, 1940.

**Canthon pilularius** L. Introduced

Bartlett 39-2 and Anon 39-107: introduced from Texas, reared in P. R., released at Arroyo, Salinas, Fajardo, Penuelas and Ponce.

**Phaenus triangularis** Say—Introduced

Bartlett 39-2: introduced from Texas.

**Copris incertus** var. **prociduus** Say—Introduced

Bartlett 39-2: introduced from Hawaii.

**Canthochilum histeroides** Harold

in the mountains north of Yauco (I No. 6231).

**Aphodius cuniculus** Chevrolat

Chapin 40-7: many specimens from P. R., Vieques Id.

**Aphodius lividus** Olivier

Chapin 40-6: from P. R. and Vieques Id.

**Psammodyius bidens** Horn

Chapin 40-10: "one specimen taken on the beach at Humacao, P. R., October 8, 1935, Blackwelder station 56."

**Saprosites blackwelderi** Chapin 40-11: TYPES from Mayaguez, P. R. (R. E. Blackwelder), another from Añasco (R. G. Oakley), both from rotting wood.

**Ataenius darlingtoni** Hinton, H. E., in Ann. Mag. Nat. Hist., ser. 10, 20( ): 179, fig. 6-9: TYPE from Cartagena Lagoon, P. R.

Chapin 40-30: from P. R.

**Ataenius edwardsi** Chapin 40-26: TYPE from Jamaica, others from P. R.

**Ataenius frater** Arrow  
Chapin 40-32: from P. R.

**Ataenius gracilis** Melsheimer  
Chapin 40-25: from P. R. and Vieques Id.

**Ataenius haroldi** Steinheil  
Chapin 40-15: seven specimens from P. R.

**Ataenius luteomargo** Chapin 40-36: TYPE from Dominica, B. W. I., others from P. R.

**Ataenius strigicauda** Bates  
Chapin 40-31: from P. R.

**Ataenius tenebrosus** Arrow  
Chapin 40-23: from P. R. and Vieques Id.

**Ataenius versicolor** Schmidt  
Chapin 40-36: one specimen from Pt. Cangrejos, P. R., April 6, 1920 (G. N. Wolcott).

**Ataenius vincentiae** Arrow  
Chapin 40-19: at Coamo, P. R. (S. T. Danforth).

page 246

All the records under *Ataenius marginatus* F.—det. E. A. Schwarz should be transferred, according to re-determinations by E. A. Chapin and A. J. Mutchler, to *Ataenius terminalis* Chevrolat.

page 247

**Phyllophaga adjuntas** Saylor, L. W., "Ten new West Indian scarab beetles of the genus *Phyllophaga*, with two new names." Jour. Washington Academy Science, **30**(7): 305-314, fig. 10. Washington, D. C., July 15, 1940; p. 312; TYPE from Isolina, P. R., others from Adjuntas.  
one male at light Camp Doña Juana, Villalba (413-40 det. E. A. Chapin from drawing of genitalia).

page 249

**Phyllophaga vandinei** Smyth

Jepson 39-3 to 30: distribution (p. 3): 3d instar grubs parasitized by *Elis xanthonotus*, 2nd instar by *Elis haemorrhoidalis*, 3d instar by *Campsomeris dorsata*, *C. trifasciata* and *C. tricineta*.

grubs attacking plantain roots at Mayaguez (I No. 6061); adults defoliating moca, *Andira inermis*, and eating leaves of sugar-cane down to the midrib, at San Sebastian (165-40, 424-40).



**Phyllophaga portoricensis** Smyth

Jepson 39-3 to 30: distribution, and parasitism by Scoliid wasps.  
 Wolcott 37-82: 195 adults in 58 pellets of excrement of the  
 giant Surinam toad, *Bufo marinus* L., at Rio Piedras, April,  
 1936.

Wolcott 39-508: control by *Bufo marinus* in P. R.

adults feeding on leaves of sea-grape in mid-April, no  
 rain (35-38); at light, El Yunque (50-36).

page 250

**Phyllophaga citri** Smyth

Jepson 39-3 (distribution) to 29: parasitism of 2nd instar  
 grubs by *Elis haemorrhoidalis*, of 3d instar by *Elis zanthono-*  
*tus*, and rarely by *Campsomeris trifasciata*.

adults feeding on citrus leaves at Maricao (I No. 6810).

**Phyllophaga crinitissima** More

Jepson 39-3: "rare."

one female at light, El Yunque (51-36 det. GNW).

page 251

**Phyllophaga guanicana** Smyth

Jepson 39-3: distribution.

**Phyllophaga monana** Moser, J., in Stettiner Ent. Zeit., 82( ): 181. Stettin, 1921: TYPE from Mona Id.

at light, Mona Id. (10-37, 187-39, 218-40 det. E. A.  
 Chapin).

**Phyllophaga yunqueana** Chapin

one male at light, El Yunque, (37-39 confirmed E. A.  
 Chapin).

**Phyllophaga wolcotti** Saylor 40-307: TYPE from El Yunque, P. R., others from mountains north of Yauco iv-20-36 (R. G. Oakley).

two males and two females at light, El Yunque (36-39  
 TYPE), April 6, 1939.

**Phytalus apicalis** Blanchard

Jepson 39-3 (distribution) and 27: 3d instar grubs parasitized  
 by *Elis haemorrhoidalis*.

at light, Bayamon (I No. 6043); adults in spider web, Faro  
 de Cabo Rojo (59-37 det. E. A. Chapin).

page 252

**Parachalepus barbatus** F.

Wolcott 37-81: abundance of adults in excrement of *Bufo mari-*  
*nus* L. at Rio Piedras.

at light (227-39).

page 253

**Dyscinetus picipes** Burmeister

Wolcott 37-83: scarcity of, in excrement of *Bufo marinus* L.

adults attacking yautia corms and roots at Cayey (59-38).

**Ligyris tumulosus** Burmeister

Jepson 39-28: 3d instar grubs parasitized by *Campsomeris dorsata*.

Wolcott 37-80: scarcity due to *Bufo marinus* L.  
on Mona Id. (83-39, 220-40).

page 254

**Strataegus quadrifoveatus** P. B.

(as *S. oblongulus* (Beauv.)) Anon 38-92: observations on continued by H. K. Plank.

burrowing into pineapple fruit at Palo Seco (I No. 7287).

page 256

**Strataegus barbigerus** Chapin

at El Verde Camp, Rio Grande, elev. 1,200 ft. (3-39);  
male and female from base of tree, *Metopium toxiferum*,  
on Mona Id. (82-39).

page 257

LUCANIDAE

**Paxillus (Passalus) crenatus** MacLeay

in rotten wood, Lares-Yauco road (308-21 det. A. J. Mutchler); at Mayaguez (617) R. H. Van Zwaluwenburg, det. E. A. Chapin.

page 258.

CERAMBYCIDAE

**Xystrocera globosa** Olivier—det. W. S. Fisher  
(I No. 6808).

**Stenodontes bituberculatus** P. B.

in old tree stump, Mona Id. (84-39).

**Derancistrus (Solenoptera) thomae** L.

(I No. 6526); adult on dead wood at Guayanilla (40-37);  
adult in flight at Quebradillas (284-39).

p. 259

**Smodicum impressicole** Lac.—det. W. S. Fisher  
Ramos Col.: at Mayaguez v-36.

**Methia necydalea** F.

at light, Mona Id. (132-39 det. W. S. Fisher, 258-40).

**Chlorida festiva** L.

larvae in casuarina fence posts at Naguabo (1-39); adults  
at light at Villalba (410-40).

**Eburia quadrimaculata** L.

at light at Guajataca (32-38), on Mona Id. (87-39).

page 260

**Elaphidion insulare** Newman

on Mona Id. (13-37 det. W. S. Fisher).

**Elaphidion irroratum** L.

reared from dead *Albizzia lebbeck* at Ponce (63-39); adult from Mona Id. (85-39).

**Elaphidion mutatum** Gahan—det. W. S. Fisher

larvae in live tree of aceitillo, *Zanthoxylum flavum*, Guanica Insular Forest (13-38, 62-38).

**Elaphidion spinicorne** Drury

at light, Mona Id. (86-39, 257-40); reared from *Albizzia lebbeck* at Ponce (64-39).

**Elaphidion tomentosum** Chevrolat

larvae in wood of crape myrtle (78-37).

page 261

**Heterachthes ebenus** Neuman—det. W. S. Fisher

Ramos Col.: at Mayaguez iv-37.

**Heterachthes 4-maculatus** F. (not *Heterachthe*)

(56-39).

**Merostenus attenuatus** Chevrolat

at light, Mona Id. (278-40 det. W. S. Fisher).

**Xystrocera globosa** Olivier—det. W. S. Fisher

Ramos Col.: at Arroyo xii-37.

page 262

**Cylindera flava** F.

at light, Mona Id. (145-39 det. W. S. Fisher), at Ponce (146-40); all stages infesting logs of *Bucida buceras* at Guayanilla (41-37).

**Acyphoderes arulenta** Kirby

resting on sugar-cane at Toa Baja and Coloso (37-38); from stump at Mayaguez (I No. 7267).

**Euryscelis suturalis** Olivier

at Bayamon (I No. 6042).

**Neoclytus araeniformis** Olivier

in dead wood at Mayaguez (I No. 7243); all stages in logs of *Bucida buceras* at Guayanilla (42-37).

page 263

**Leptostylus argentatus** J. Duval

reared from aceitillo, *Zanthoxylum flavum*, Guanica Insular Forest (68-38 det. W. S. Fisher).

page 264

**Leptostylus** sp. nov.—det. W. S. Fisher

Ramos Col.: at Mayaguez vii-32.

**Oreodera glauca** L.—det. W. S. Fisher

Ramos Col.: at Mayaguez ii-35, xii-36, at Adjuntas ii-35.

page 265

**Ataxia alboscute'llata** Fisher

Fife 39-10: larvae boring in cotton stalks at Sabana Grande.

page 269

CHRYSOMELIDAE

**Lamprosoma longifrons** Suffrian (not *Lamprosema*)

**Nodonota wolcotti** Bryant

on weeds, Mona Id. (290-40 det. as "prob." H. S. Barber).

**Metachroma antennalis** Weise

at light at Guajataca (52-39).

page 270

**Leucocera laevicollis** Weise

on *Malpighia puniceifolia* at Mayaguez (I No. 7343).

**Myochrous armatus** Baly

resting on sugar-cane at Salinas (371-39).

**Myochrous** sp. (not the above)—det. H. S. Barber

Fife 39-9: on cotton

on weeds at Ponce (I No. 5930).

page 271

**Diabrotica graminea** Baly

Fife 39-10: adults feed on cotton leaves.

page 273

**Luperodes antillarum** Blake, Doris H., "Ten New Species of West Indian Chrysomelidae (Coleoptera)." Proc. Ent. Soc.

Washington, 34(4): 67-78, pl. 1. Washington, D. C., April 1937: TYPE from Rio Piedras, P. R. (R. T. Cotton) on *Jussiaea suffruticosa*, May 8, 1917.

(400-17 TYPE), also includes from IB-273:

"**Luperus** sp. det. H. S. Barber

on *Caperonia* and *Jussiaea* at Loiza (No. 4198).

"**Luperodes** sp.

Danforth: at Yabucoa vi-30, Cartagena Lagoon iii-27."

**Ectmesopus vitticollis** Blake, Doris H., "A New Genus of Galerucinae (Coleoptera) from the West Indies." Proc. Ent. Soc.

Washington, 42(5): 95-104, pl. 1. Washington, D. C., May 28, 1940: TYPE from Ponce P. R. (R. G. Oakley) on *Peiransia*, illustration.

**Ectmesopus zonatus** Blake 40-100: TYPE from Maricao Insular Forest, P. R. (P. J. Darlington).

page 275

**Homophoeta albicollis** F.

on Santiago Id., November 1939 (W. A. Hoffman); resting on sugar-cane at Isabela (8-38), at Guanica (329-39).

page 278

**Hermacophaga cubana** Bryant—det. G. E. Bryant  
millions of adults clustered on leaves of tree, top of hill  
near Guayama (50-22).

**Hermacophaga cylindrica** Weise  
on weeds at Mayaguez (I No. 7394); on "mata bellaca"  
at Guanica (359-39); on ?, Mona Id. (47-40).

page 279

**Epitrix cucumeris** Harris  
Gage 39-22: as a pest on tobacco leaves.  
on potatoes at Cidra (I No. 6212).

page 280

**Epitrix parvula** F.  
Gage 39-22: as a pest on tobacco, riddling the leaves.  
on Irish potatoes at Cidra (I No. 6215).

page 281

**Chaetocnema apricaria** Suffrian  
on ? at Coamo (I No. 5927); on Santiago Id., November  
1939 (W. A. Hoffman).

**Systema basalis** J. Duval  
Gage 39-22: a pest on tobacco leaves.  
Fife 39-10: adults feed on cotton leaves.  
on Irish potatoes at Cidra (I No. 6215).

page 283

**Longitarsus varicornis** Suffrian  
adults abundant on *Psidium guajava* at Aguada (26-37  
det. H. S. Barber).

**Phyllotreta guatemalensis** Jacoby  
on *Cleome pentaphylla* at Mayaguez (I No. 7267).

page 284

**Aphthoma compressa** Suffrian  
on *Stigmaphyllon ligulatum* at Camuy (20-24 det. A. J.  
Mutchler): resting on sugar-cane at Aguadilla (44-38); on  
*Clusia rosea* and "coral," Mona Id. (256-40).

**Mesomphalia exclamationis** L. (= *Hilarocassis*)  
Fife 39-10: adults feed on cotton leaves.  
on *Ricinus communis* at Ponce (I No. 4498, 6584, 13-36);  
on ? at Mayaguez (H. L. Dozier), October 1935 and (L. C.  
Fife), December 1935; resting on sugar-cane at Guanica  
(28-37), at Aguadilla (151-39), at Manati (113-39).

page 285

**Chelymorpha polysticha** Boheman  
resting on sugar-cane at Loiza (58-38).

page 287

BRENTIDAE

**Belophorus maculatus** Olivier  
on sierra palm, El Yunque (52-36).

page 288

**Brentus volvulus** F.  
under bark of decaying *Erythrina* tree at Mayaguez (I No. 7253); under bark at Mayaguez (I No. 6380 det. as "sp.").

page 289

CURCULIONIDAE

**Attelabus coccolobae** Wolcott  
on sea-grape at Patillas (81-37); on *Coccolobis laurifolia* at Guanica (334-40); on *C. grandifolia* at Maricao (389-40).

page 290

**Attelabus sexmaculatus** Chevrolat  
on *Psidium guajava* at San Sebastian (7-38); on *Eucalyptus cytriadora* seedlings in nursery at Cayey (113-40), at Patillas (431-40).

**Cylas formicarius** F.  
Wolcott 37-58: drought and cracking of soil largely determines extent of infestation, not seed selection.

page 292

**Apion martinezi** Marshall  
Martorell & Wolcott 39-44: injury to aceitillo seed.  
very abundant in aceitillo seed from Camp Buena Vista, Maricao (14-38).

**Tachygonus** sp. near *gowdeyi* Marshall—det. L. L. Buchanan  
on guácima at Boquerón (I No. 6233).

**Artipus monae** new species

Elongate oblong. Piceous, everywhere densely clothed with dull silvery scales, often tarnished to a faded brown in larger individuals. Head with scattered, coarse punctures; the median groove from deeply notched beak extending only as far back as between the eyes (not appearing to almost cut the head in two, as often in *A. psittacinus* Gyllenhal from Haiti). Thorax sub-cylindrical, as wide as long, coarsely punctate, interspersed with coarse, appressed whitish hairs; the median groove often distinct near base. Elytra twice as long as wide, broadest half-way to apex, sides not parallel; *elytral declivity abrupt*, often nearly vertical from a lighter-colored raised oval area on disc; striae with deep coarse punctures; intervals convex with a single irregular zig-zaging row of coarse appressed short whitish hairs.  
Length 5. to 6.5 mm.

Described by G. N. Wolcott from 15 specimens collected by L. F. Martorell on Mona Island, August 8, 1939 (P. R. Acc. No. 130-39) most abundant on casuarina foliage, less abundant beneath eggplant leaves.

**Prepodes 15-punctatus** Olivier

a 21-spotted iridescent green weevil, feeding on corcho on corcho prieto, *Torrubia fragrans*, Yabucoa (495-40).

**Prepodes roseipes** Chevrolat

(as *Exophthalmodes*) Fife 39-10: adults eat cotton leaves.

at Mayaguez (I No. 6843, 6993); in fruit fly trap at Palo Seco (I No. 6990); resting on sugar-cane at Isabela (254-39); feeding on tender leaves of algarrobo, *Hymenaea courbaril*, at Vega Baja (171-40).

page 293

**Compsus maricao** Wolcott

adult feeding on leaf of *Cecropia peltata* at Villalba (171-40).

page 294

**Diaprepes abbreviatus** L.

Wolcott 35-44: a summary of the diapause paper.

Wolcott, G. N., "The Life History of *Diaprepes abbreviatus* L. at Rico Piedras, Puerto Rico." Jour. Agr. Univ. P. R., 20(4): 883-914, fig. 5, tab. 3, ref. 21. San Juan (October 1936), January 1937.

Wolcott 37-41: summary of the above.

Wolcott 37-53: adults killed by "Dutox" (barium fluosilicate) dusted on foliage.

Wolcott 37-81: comparative scarcity in pellets of excrement of *Bufo marinus* L.

Fife: 39-10: adults eat cotton leaves.

adults eating leaves of unidentified tree, Mona Id. (212-40); of *Cedrela odorata* at Rio Grande (368-40), at Villalba (404-40); of *Conocarpus erectus* at Boca de Cangrejos (374-40); of young ratoon cane at Isabela (35-39); of espino rubiál, *Zanthoxylum caribaeum*, at Isabela (311-39). Eggs between leaves of caimito at Camuy (30-36). Larvae attacking mahogany seedlings, Mountain Top Nursery, Patillas (12-39).

page 299

**Lachnopus coffeae** Marshall

adults feeding on grapefruit leaves (I No. 7212); in fruit fly traps (I No. 6820, 6855, 6980).

page 301

**Lachnopus curvipes** F.

Fife 39-10: adults eat cotton leaves.

adults eating flowers and young fruit of cultivated grape at Ponce (41-39); on eggplant at Morovis (I No. 7399); at light at Guajataca (166-40).

page 302

**Lachnopus seini** Wolcott

on *Rapanea ferruginea* at Aibonito (190-40).

page 303

**Lachnopus kofresi** new species

Integument entirely black: no scales; short, silvery hairs on tibiae and tarsi, also towards apex of elytra, with an elongated tuft of longer hairs on the lateral margin at the posterior declivity. Considerably more robust than *Lachnopus curvipes*, *coffea* or *bellus*, elytra broadest at middle; striae deep and regular, with deep regular punctures. Prothorax lightly and irregularly punctured, head almost impunctate. Length 26 to 38 mm., width 11 to 17 mm.

Described by G. N. Wolcott from 22 specimens collected by L. F. Martorell, August 8, 1939 (P. R. Acc. No. 129-39) from the underside of leaves of cultivated eggplant, Mona Island.

Named for an infamous pirate who made Mona Island his headquarters.

**Apodrusus argentatus** Wolcott

(as *Apodrosus*) Fife 39-10: adults eat cotton leaves.

on shoots of *Colubrina colubrina*, Mona Id. (283-40 det. as "near" L. L. Buchanan).

page 306

**Geraeus** sp.—det. L. L. Buchanan

adults abundant on flowers of *Helichrysum bracteatum* at Villalba (414-40), of *Borreria verticillata* at Matrullas Dam (310A-39); also includes "*Centrinus* sp.—det. L. L. Buchanan, at Villalba (I No. 5151) on leaves of ? tree (Oakley)."

**Anacentrinus** sp.—det. L. L. Buchanan

on wild parsnip flowers at Cayey (30-39).

page 307

**Rhaptinus (Baris) torquatus** Olivier

on *Solanum verbascifolium* at Aguas Buenas (I No. 7461); on *Solanum torvum* at Mayaguez (I No. 6095, 6944).

**Diorymerellus obliterated** Champion

(as "near") Anon 39-119: a pest of vanilla.  
on vanilla at Maricao (36-38).

**Chalcodermus** sp.

Fife 39-10: adults eating cotton leaves.

page 309

**Pantophthalmus puertoricanus** Buchanan, L. L., "A New Genus and four new Species of West Indian Cucurculionidae (Coleoptera)." Mem. Soc. Cubana Hist. Nat., 10(3): 145-152. Habana, 1936: p. 147, TYPE from P. R.



page 311

**Anchonus anguilicollis** Chevrolat

under bark of dead tree on El Yunque (344-39).

**Anchonus** sp.—det. L. L. Buchanan

from grapefruit at Bayamon (I No. 6433).

**Cossonus canaliculatus** F.

under bark and chips of wood of almácigo at Salinas (33-36 det. L. L. Buchanan); at Mayaguez (I No. 6372 as "sp.").

**Stereoderemus** sp.—det. L. Buchanan

in decaying wood at Mayaguez (I No. 6389).

page 312

**Metamasius hemipterus** L.Wolcott 37-82: five adults in one pellet of excrement of *Bufo marinus* L., collected in cane field at Vega Baja.

Wolcott 40-30: in maga pods.

adults in sugar-cane at Manati (I No. 6068); under pineapple plant at Mayaguez (I No. 6947).

page 313

**Cosmopolites sordidus** Germar

Wolcott 35-142: summarizing the work of F. Sein.

Wolcott 37-48: reporting experiments by Mr. Sein, no sign of infestation yet in plants from either pared or sterilized corms.

Wolcott 37-58: very light infestation after first year.

Wolcott 38-90: infestation had not increased by the second year to the point of seriously affecting yield.

Anon 38-101: the Histerid predator, *Plaesius javanus* Erichson, introduced from Fiji, released in P. R.Anon 39-109: not recovered in P. R. A native earwig, *Psalis americana*, found in tunnels and fed upon the larvae of the weevil in captivity.

from plantain corms at Mayaguez (I No. 6059, 6060).

**Calendra linearis** Herbst

in tamarind seed pods (I No. 6522, 6089), at Arecibo (I No. 6076).

page 317

## SCOLYTIDAE

**Stephanoderes brazilensis** Hopkins

from grapefruit at Bayamon (I No. 6418).

**Stephanoderes busckii** Hopkinsin pods of algarrobo, *Hymanaea courbaril* (I No. 5905), at Arecibo (I No. 5958); in tamarind pods (I No. 6515).**Stephanoderes** near *ferrugineus* Hopkins—det. M. W. Blackmanin pods of *Thespesia populnea* at Guayanilla (32-39).

page 318

**Hypothenemus** near *parvus* Hopkins  
in orange fruit, Mayaguez (I No. 5950).

**Coccotrypes rollinae** Hopkins—det. M. W. Blackman  
in seeds of *Neowashingtonia robusta* palm (4-33).

**Pseudothysanoes** (not *Pseudothysantes*) Blackman

**Xyleborus affinis** Eichoff  
(as "sp.") Wolcott 37-62: appearing in lesions on *Inga vera*  
and *Inga laurina* caused by water-soluble salts of thallium in  
hormiguilla bait.

page 320

### DIPTERA

Johannsen, O. A., "New Species of Nematocera from Puerto Rico."  
Jour. Agr. Univ. P. R., **22**(2): 219-225. San Juan, May  
1938.

page 321

### TIPULIDAE

Alexander, C. P., "New or little-known Species of West Indian  
Tipulidae (Diptera) II." Jour. Agr. Univ. P. R., **21**(2):  
179-190, pl. 1. San Juan (July) April 1937.

"New or little-known Species of West Indian Tipulidae (Dip-  
tera) IV." Jour. Agr. Univ. P. R., **23**(2): 91-130, pl. 2.  
San Juan (September 7) April 1939.

**Dolichocheza (Megistomastix) acutiloba** Alexander 37-179:  
TYPE from El Yunque, P. R. (Garcia-Diaz).  
Garcia-Diaz 38-95: listed.

**Dolichocheza (Megistomastix) obtusiloba** Alexander 37-180:  
TYPE from El Yunque, P. R. (Garcia-Diaz).  
Garcia-Diaz 38-95: listed.

**Limonia (Limonia) hoffmani** Alexander  
Alexander 39-108: at Villalba (W. A. Hoffman).

page 322

**Limonia (Neolimonia) diva** Schiner  
Garcia-Diaz 38-95: listed.

**Limonia (Dicranomyia) brevivena** Osten Sacken  
Garcia-Diaz 38-95: listed.

**Limonia (Dicranomyia) divisa** Alexander  
Alexander 39-113: at Villalba (W. A. Hoffman).

**Limonia (Dicranomyia) distans** Osten Sacken  
Garcia-Diaz 38-95: listed.

- Limonia (Rhipidia) domestica** Osten Sacken  
Garcia-Diaz 38-95: listed.  
Alexander 39-113: at Villalba (W. A. Hoffman).
- Limonia (Rhipidia) tetraleuca** Alexander 37-182: TYPE from  
El Yunque, P. R.  
Garcia-Diaz 38-95: listed.
- Limonia (Geranomyia) antillarum** Alexander  
Garcia-Diaz 38-95: listed.  
Alexander 39-113: at Villalba (W. A. Hoffman).
- Limonia (G.) myersiana** Alexander  
Alexander 39-113: at Villalba (W. A. Hoffman).
- Limonia (G.) subrecisa** Alexander—det. C. P. Alexander  
Garcia-Diaz 38-95: listed.
- Limonia (G.) tibialis** Loew  
Alexander 39-113: at Villalba (W. A. Hoffman).
- Limonia (G.) virescens** Loew  
Alexander 39-116: at Villalba (W. A. Hoffman).

page 323

- Helius (Helius) albitarsis** Osten Sacken  
Garcia-Diaz 38-95: listed.
- Polymera (Polymera) geniculata** Alexander  
Garcia-Diaz 38-95: listed.
- Shannonomyia hoffmani** Alexander, C. P., "New or little-known  
Species of West Indian Tipulidae (Diptera) I." Jour. Agr.  
Univ. P. R., 20(4): 877-882, fig. 4. San Juan (January  
1937) October 1936: TYPE from El Yunque, P. R.
- Shannonomyia leonardi** Alexander  
Garcia-Diaz 38-95: listed.
- Shannonomyia triangularis** Alexander  
Garcia-Diaz 38-95: listed.
- Hexatoma (Eriocera) trifasciata** Roeder  
Garcia-Diaz 38-95: listed.  
Alexander 39-126: from El Yunque (Garcia-Diaz) and Las  
Mesas (A. H. Madden).
- Gnophomyia (Gnophomyia) diazi** Alexander 37-184: TYPE  
from El Yunque, P. R.  
Garcia-Diaz 38-95: listed.
- Gonomyia (Lipophleps) bicornuta** Alexander  
Garcia-Diaz 38-95: listed.
- Gonomyia (L.) bifiligera** Alexander  
Alexander 39-128: at Villalba (W. A. Hoffman).

**Gonomyia (L.) monacantha** Alexander 37-184: TYPE from Vieques Id., others from Lares, Rio Blanco and Rio Yunez, P. R.

Garcia-Diaz 38-95: listed.

**Gonomyia (L.) orthomera** Alexander 37-185: TYPE from Tanama River, P. R., others from Cidra.

Garcia-Diaz 38-95: listed.

**Gonomyia (L.) pleuralis** Williston

Garcia-Diaz 38-95: listed.

page 324

**Gonomyia (L.) subterminalis** Alexander

Garcia-Diaz 38-95: listed.

**Teucholabis (Teucholabis) portoricana** Alexander 37-180; TYPE from Villalba, P. R.

Alexander 39-126: quoting from the above.

**Trentepholia (Paramongoma) niveitarsis** Alexander

Garcia-Diaz 38-95: listed.

**Erioptera (Mesocyphona) caloptera** Say

Garcia-Diaz 38-95: listed.

**Erioptera (Mesocyphona) portoricensis** Alexander

Garcia-Diaz 38-95: listed.

**Toxorhina (Toxorhina) fragilis** Loew

Garcia-Diaz 38-95: listed.

BLEPHAROCERIDAE

**Paltostoma argyrocineta** Curran

Johannsen 38-223: from El Yunque and Rio Sabana.

PSYCHODIDAE

**Maruina hirta** Johannsen 38-224: TYPE from Rio Guaynabo, others from Rio Yunez, P. R.

CHIRONOMIDAE

**Pentaneura marmorata** Johannsen 38-219: TYPE from Rio Cidra, P. R.

**Pentaneura monilis** L. var. **peleensis** Walley

Johannsen 38-220: at Laguna Tortuguero.

**Coelotanypus insulanus** Johannsen 38-220: TYPE from Rio Yunez, P. R.

**Coelotanypus concinnus** Coquillett

Johannsen 38-220: at Cartagena Lagoon.

**Cardiocladius obscurus** Johannsen

Johannsen 38-220: at Cartagena Lagoon.

**Cricotopus aberrans** Johannsen 38-220: TYPE from Rio Tanamá, P. R., others from Rio Yunez and Rio Caguitas.

page 325

**Cricotopus conformis** Curran  
Johannsen 38-221: at five P. R. localities.

**Cricotopus insolitus** Curran  
Johannsen 38-221: at four P. R. localities.

**Corynoneura (Thienemaniella) similis** Malloch  
Johannsen 38-221: at Rio Yunez and Rio Cidra.

**Pseudochironomus fulviventris** Johannsen  
Johannsen 38-221: from Rio Yunez and in Luquillo Mts.

**Chironomus (Stenochironomus) furcata** Johannsen 38-221:  
TYPE from Luquillo Mts., P. R.

**Chironomus bulbosa** Garry  
Johannsen 38-222: at Cartagena, Guanica and Tortuguero Lagoons and from Rio Yunez.

**Tanytarsus (Rheotanytarsus) meridionalis** Johannsen 38-222:  
TYPE from Rio Yunez, P. R., others from five P. R. localities.

CERATOPOGONIDAE

**Culicoides furens** Poey  
on Culebra Id., December 1937 (W. A. Hoffman).

**Ceratopogon (Brachypogon) impar** Johannsen 38-223: TYPE  
from El Yunque, P. R.

**Atrichopogon** sp.—det. Alan Stone  
on cactus blossoms at Barceloneta (I No. 6593).

page 326

CULICIDAE

Tulloch, G. S., "The Mosquitoes of Puerto Rico." Jour. Agr. Univ. P. R., **21**(2): 137-167, fig. 9, ref. 26. San Juan, April 1937.

"The Brackish Water Mosquitoes of Puerto Rico." Jour. Agr. Univ. P. R., **21**(4): 581-583. San Juan (November 12) October 1937.

"Ecological Notes on Mosquitoes Associated with Bromeliads." Jour. Agr. Univ. P. R., **22**(4): 499-501, tab. 1. San Juan (March 23, 1939) October 1938.

page 327

**Chaobrus festivus** Dyar & Knab—det. R. Matheson Garcia-Diaz 38-95: listed.

**Chaobrus brasiliensis** Theobald—det. G. S. Tulloch  
Tulloch 37-153: the first record for the West Indies.

**Corethrella appendiculata** Grabham

Tulloch 37-153: predaceous on *Culex* larvae.  
Tulloch 39-500: in bromeliads.

**Wyeomyia mitchellii** Theobald

Tulloch 37-141: in bromeliads in the mountains.  
Tulloch 39-500: "larvae --- are bright yellow and have slightly flattened bodies."

**Anopheles albimanus** Wiedemann

Tulloch 37-152: "most abundant."  
Tulloch 37-582: in brackish water.  
on Culebra Id., December 1937 (W. A. Hoffman).

**Anopheles grabhamii** Theobald

Tulloch 37-153: "second in abundance."  
Tulloch 37-582: in brackish water.

**Anopheles crucians** Wiedemann—det. G. S. Tulloch

Tulloch 37-153: a single record from Guanica Lagoon.  
Tulloch 37-582: in brackish water.

page 328

**Anopheles vestitipennis** Dyar & Knab

Tulloch 37-153: only adults.

**Megarhinus portoricensis** Roeder

Tulloch 37-151: in tree holes and bromeliads.  
Tulloch 39-500: in bromeliads at Maricao, elev. 2,000 ft.

**Uranotaenia loewii** Theobald

Tulloch 37-151: in water containing much vegetation.

**Uranotaenia sapphirina** Osten Sacken

Tulloch 37-151: rare.  
(as "sp." or "spp.") Tulloch 37-582: in brackish water.

**Psorophora jamaicensis** Theobald

Tulloch 37-143: in temporary surface pools.

**Psorophora pygmaea** Theobald—det. G. S. Tulloch

Tulloch 37-142: fairly common on the south coast of P. R.  
Tulloch 37-582: in brackish water.

**Mansonia indubitans** Dyar & Shannon—det. G. S. Tulloch

Tulloch 37-146: the first record for the West Indies.

**Mansonia titillans** Walker

Tulloch 37-146: at Mayaguez.

**Aedes (Stegomyia) aegypti** L.

Tulloch 37-145: around dwellings.  
on Culebra Id., December 1937 (W. A. Hoffman).

**Aedes condolecens** Dyar & Knab

Tulloch 37-145: at Mayaguez.

- Aedes mediovittatus** Coquillett  
Tulloch 37-144: in tree holes.
- Aedes nubilis** Theobald—det. G. S. Tulloch  
Tulloch 37-143: at Dorado.
- Aedes scapularis** Rondani—det. G. S. Tulloch  
Tulloch 37-146: at Mayaguez.
- Aedes sollicitans** Walker  
Tulloch 37-143: at Guanica Lagoon.  
Tulloch 37-500: "the salt-marsh mosquito," in salty or alkaline pools, even far from the ocean.
- Aedes taenorynchus** Wiedemann  
Tulloch 37-144: in the coastal plain.  
Tulloch 37-582: in brackish water.
- Aedes tortilis** Theobald—det. G. S. Tulloch  
Tulloch 37-143: prefers higher altitudes.
- page 330
- Culex bahamensis** Dyar & Knab  
Tulloch 37-148: "restricted to brackish water."  
Tulloch 37-582: in brackish water.
- Culex habitator** Dyar & Knab  
Tulloch 37-149: in either fresh or brackish water.  
Tulloch 37-582: in brackish water.
- Culex secutor** Theobald  
Tulloch 37-150: in cool pools.
- Culex nigripalpus** Theobald  
Tulloch 37-149: most abundant of all tropical *Culex*.  
Tulloch 37-582: in brackish water.
- Culex fatigans** Wiedemann  
(as *C. quinquefasciatus* Say) Tulloch 37-150: "most abundant in towns and cities."  
on Culebra Id., December 1937 (W. A. Hoffman); at Bayamon (I No. 6900, 6901).
- Culex pilosus** Dyar & Knab  
Tulloch 37-147: at Mayaguez.
- Culex carcinophilus** Dyar & Knab—det. G. S. Tulloch  
Tulloch 37-148: at Cartagena Lagoon.
- Culex americanus** Neveu-Lemaire—det. G. S. Tulloch  
Tulloch 37-148 and Tulloch 39-500: in bromeliads.
- Culex janitor** Theobald—det. G. S. Tulloch  
Tulloch 37-150: in crab holes.

page 331

**Culex atratus** Theobald

Tulloch 37-148: in permanent pools.

Tulloch 37-582: in brackish water.

**Culex inhibitor** Dyar & Knab

Tulloch 37-147: "most abundant of the *Culex* group."

Tulloch 37-582: in brackish water.

**Culex antillum-magnorum** Dyar

Garcia-Diaz 38-95: listed.

**Deinocerites cancer** Theobald

Tulloch 37-147: in crab holes.

page 332

MYCETOPHILIDAE

**Sciara** sp.

at Guajataca in February (22-39), and in October and November, det. as all females — can not be identified"  
Elizabeth G. Fisher.

page 333

CECIDOMYIDAE

**Cecidomyia coccolobae** Cook

making small cone-shaped galls in leaves of *Coccolobis uvifera*, Mona Id. (220-39).

BIBIONIDAE

**Dilophus spinipes** Say—det. Alan Stone

on guamá flowers at Cayey (127-40).

**Dilophus** sp. (not *spinipes*)—det. Alan Stone

on flowers of *Borreria verticillata* at Guajataca Dam (141-40).

page 334

STRATIOMYIDAE

**Hermetia albitarsis** F.

in fruit fly trap (I No. 6966).

**Hermetia illucens** L.

abundant in fruit fly traps (I No. 6924); larvae in decayed grapefruit at Bayamon (I No. 6211); at Guajataca (288-39).

**Neorondania** sp. nov.—det. C. T. Greene

in fruit fly trap (I No. 6925).

**Neorondania chalybea** Wiedemann

on house screens, Mona Id. (133-39 det. C. T. Greene, 269-40); larvae under dead bark of yuma palm, *Cocotrynaea argentea* (152-40 det. C. T. Greene).



page 336

## TABANIDAE

Dr. J. C. Bequaert, in preparing his paper on "The Tabanidae of the Antilles," *Revista de Entomologia*, 11(1-2): 253-369, fig. 33. Rio de Janeiro, June 1940, examined and re-determined many of the specimens in the Station collection.

**Chrysops variegata** DeGeer

on grapefruit (I No. 7134); in citrus grove (556-17 det. J. C. Bequaert); on horses in coconut grove by ocean at Añasco (1028-13 det. J. C. Bequaert).

**Leptiselaga crassipes** F.—det. J. C. Bequaert

vanVolkenberg 39-: at Lake Guanica.  
at San German (L. E. Gregory).

**Tabanus hookeri** Knab 15-48: TYPE from Mayaguez, P. R.

on the beach at Pt. Cangrejos (GNW—det. J. C. Bequaert).

**Tabanus nervosus** Curran (not *nervosus*)

(as *Tabanus psamophilus* Osten Sacker det. C. T. Greene)  
IP-214: on the beach, resting on dry seaweed, as which it is the same color, and in which the larvae live, feeding on sand fleas, at Pt. Cangrejos (114-15 re-determined J. C. Bequaert), at Vega Baja (493-16).

page 337

**Tabanus caribaeorum** Bequaert 40-323: TYPE from Grand Cayman, others from Mona Id. (L. F. Martorell). Illustration.

**Tabanus stigma** F.

from the beach at Cataño (unlabeled specimens—Leonard & Mills—det. J. C. Bequaert); on Mona Id. (204-39 det. Alan Stone).

**Tabanus truquii** Bellardi (= *T. lineola* from P. R.)

at San Juan

**Tabanus brunettii** Bequaert (= *Silvius punctipennis* Brunetti)

at Yauco (I No. 5570 det. as *Stenotabanus* sp. by Alan Stone).

**Stenotabanus** sp. nov. ?—det. Alan Stone

at Bayamon (I No. 6949), at Manati (I No. 6889).

page 338

## BOMBYLIIDAE

**Hyperalonia cerberus** F.

on Mona Id. (121-39).

**Spongolostylum** sp., near *pluto* Wiedemann

on Mona Id. (197-39 det. C. T. Greene).

**Heterostylum ferrugineus** F.

in cave on Mona Id. (161-39).

page 339

**Exoprosopa** sp. near *dodrans* Osten Sacken

on Mona Id. (196-39 det. C. T. Greene).

**Anthrax gorgon** F.

at the airport, Mona Id. (160-39, 221-40 det. C. T. Greene).

**Anthrax lucifer** F.

Jepson 36-21: abundant at Guanica.  
at Ponce (293-39).

page 340

ASILIDAE

**Atomosia incisularis** Macquart

at Bayamon (I No. 6871).

**Ommatius marginellus** F.

on Mona Id. (198-39 det. C. T. Greene).

page 341

**Allopongon danforthi** Curran, C. H., "New American Asilidae (Diptera)." Amer. Mus. Novitates **806**: 1-12. New York, 1935: p. 8, TYPE from P. R.

**Proctacanthus rufiventris** Macquart

in cane field at Aguadilla (41-38), at Loiza (289-39), at Salinas (290-39).

**Plesioma** sp. near *indecora* Loew

on Mona Id. (190-39 det. C. T. Greene).

page 342

DOLICHOPODIDAE

page 344

**Psilopus melampus** Loew—det. C. T. Greene

on weeds at Mayaguez (I No. 7423).

page 345

**Psilopus portoricensis** Macquart

on weeds at Mayaguez (I No. 7423).

page 346

PHORIDAE

**Megaselida** sp. "very close to *fungicola* Coq."—det. C. T. Greene  
on polypore fungus (I No. 6143).

**Megaselida scalaris** Loew

from rotten silk of sweet corn at Mayaguez (I No. 6014);  
from rotten fruit of *Annona glabra* at Palo Seco (I No. 6514); at Adjuntas (I No. 6786).

**Pseudaceton antiguense** Crawford

Smith 36-839: from nest of *Solenopsis geminata* in mountains east of Mayaguez.

**Syneura cocciphila** Coquillett

from *Crypticeryia rosae* R. & H., on casuarinas at Ponce (32-37).

page 347

## SYRPHIDAE

**Baccha clavata** F.

Fife 39-9: larvae predaceous on *Aphis gossypii*.

**Baccha conformis** Loew

on Mona Id. (189-39 det. C. T. Greene, 271-40).

**Baccha fasciatus** Roeder

resting on sugar-cane at Salinas (372-39); on Mona Id. (270-40).

page 348

**Baccha latiusculus** Loew

at Mayaguez (I No. 7298).

**Baccha parvicornis** Loew

(32-40, I No. 6952), in fruit fly trap (I No. 6936).

page 350

**Allograpta limbata** F.

on Mona Id. (272-40).

**Volucella horvathi** Szilady—det. C. T. Greene

flying in shade of trees, Mona Id. (134-39).

page 351

**Volucella tricincta** Bigot

in fruit fly trap at Mayaguez (I No. 6945).

**Eristalis vinetorum** F.

(I No. 6792), at Loiza (I No. 6795), at Palo Seco (I No. 6798); frequenting flowers of *Borreria verticillata* at Águadilla (252-39), at Yabucoa.

page 352

## CONOPIDAE

**Physocephala** sp.—det. D. G. Hall

frequenting flowers of *Borreria verticillata* at Yabucoa (239-39), at Palo Seco (54-40); a pair in coitu on citrus at Isabela (120-32); on cane leaf at Ceiba (303-39).

**Conops** sp. "near *xanthopareus* Williston"—det. C. T. Greene at Bayamon (I No. 6038).

page 353

TACHINIDAE

**Tricopoda pennipes** F. (not *Trichopoda*)

in fruit fly trap at Mayaguez (I No. 7277); frequenting flowers of *Borreria verticillata* at Yabucoa (314-39 det. D. G. Hall).

**Lydella stabulans** var. **grisescens** Rond.—Introduced

Anon 38-96: not recovered from *Diatraea saccharalis* larvae.

page 354

**Cryptomeigenia aurifacies** Walton

Jepson 36-5 and 12: "common in the wetter parts of the Island" but scarce when he came to look for it.

page 355

**Lixophaga diatraeae** Townsend

Anon 38-96: a high of 31.9% parasitism of larvae of *Diatraea saccharalis* F. at Hormigueros (K. A. Bartlett).

Anon 39-97: reared and re-distributed in the field.

**Theresia claripalpis** van der Wulp—Introduced

Dohanian 37-241: collected in Peru for release in P. R.

Anon 38-96: not recovered.

Anon 39-96: reared in laboratory in P. R.

**Eutrixoides jonesii** Walton

Jepson 36-6: "a rarer species."

**Leskiopalpus diadema** Wiedemann—Introduced

(as *Stomatodexia*) Dohanian 37-239: from Demerara.

Anon 38-96: not recovered.

**Metagonistylum minense** Townsend—"The Amazon Fly"—Introduced

Dohanian 37-238: material collected and reared in Demerara.

Anon 38-96: not recovered in P. R.

Anon 39-95: recovered at Santa Isabel.

Bartlett, K. A., "The Second Introduction of the Amazon Fly from British Guiana into Puerto Rico." Agr. Notes 86, pp. 4. Mayaguez, November 14, 1938. (Mimeographed.)

page 358

**Frontina bigeminata** Curran

from almendra fruits at Vega Alta (I No. 5952 as *Achaetoneura*).

page 360

**Archytas analis** F.

in cane field at Ceiba (302-39).

**Archytas piliventris** van der Wulp

at Mayaguez (I No. 5954).

page 361

## SARCOPHAGIDAE

page 362

**Sarcophaga lambens** Wiedemann (= *S. sternodontis* Townsend)  
Fife 39-6: parasitizing *Heliothis virescens* and *Alabama argil-  
lacea*.  
reared from dead tobacco hornworm caterpillars (384-39  
det. D. G. Hall).

**Sarcophaga currani** Hall—det. D. G. Hall  
in cave on Mona Id. (124-39).

page 364

**Sarothromyia femoralis** Schiner  
at light, Mona Id. (374-39 det. D. G. Hall).

page 365

## MUSCIDAE

**Cochliomyia macellaria** F.  
reported as so abundant and troublesome on Mona Island  
as to prevent drying of fish on the beach: no specimens.

**Morellia scapulata** Bigot  
on grapefruit at Barceloneta (I No. 6791).

page 366

**Musca domestica** L.  
Anon 38-100 and Bartlett 39-6: host of *Spalangia philippi-  
nensis* Fullaway in breeding work.  
Anon 39-100: parasitized by *Dirhinus giffardii* Silvestri in labo-  
ratory.  
Anon 39-107: parasitized by *Muscidifurax raptor* Gir. & Saun-  
ders.  
on Mona Id. (203-39 det. D. G. Hall, 208-39, 44-40).

page 367

**Haematobia irritans** L.  
Anon 39-107: host of *Spalangia philippinensis* from Hawaii.  
Bartlett, K. A., "The Introduction into Puerto Rico of Bene-  
ficial Insects to aid in the Control of the Horn Fly of Cattle."  
Agr. Notes 88, pp. 6. Mayaguez, March 31, 1939. (Mimeo-  
graphed.)

page 368

## ANTHOMYIIDAE

**Atherigona excisa** Thomson  
from cashew fruit at Bayamon (I No. 7241 as "sp.").

page 369

## BORBORIDAE

page 370

**Leptocera discalis** Malloch  
at Adjuntas (I No. 4061, 6789).

page 371

SAPROMYZIDAE

**Carpolonchaea pendula** Bezzi

at Mayaguez (I No. 5944); on Mona Id. (184-39 det. D. G. Hall).

page 372

**Minettia aibonito** Curran

at Guayama (I No. 6793).

**Minettia slossonae** Coquillett

at Adjuntas (I No. 4037, 6787), at Juncos (I No. 6796).

page 373

ORTALIDAE

**Xanthacrona bipustulata** van der Wulp

at Mayaguez (I No. 7106).

**Macrostenomyia guerini** Bigot

in fruit fly trap at Mayaguez (I No. 6965).

**Stenopa** sp.—near *Neoacantheneura* sp.

in fruit fly trap at Mayaguez (I No. 6964).

page 374

**Euxesta eluta** Loew

in silk of sweet corn at Mayaguez (I No. 6013).

**Euxesta stigmatias** Loew

App, B. A., "*Euxesta stigmatias* Loew, an Otitid Fly infesting ear corn in Puerto Rico." Jour. Agr. Univ. P. R., 22(2): 181-188, pl. 1. San Juan, May 1938.

Anon 39-65: "most prevalent - - - in sweet corn."

reared from rotten corn (I No. 6485, 6581, 7156, 7157, 7169).

**Euxesta thomae** Loew

in fruit fly traps (I No. 6968, 6988).

page 375

**Chaetopsis fulvifrons** Macquart

reared from guava fruit at Naguabo (I No. 6718 as "sp.").

TRYPETIDAE

**Toxotrypana curvicauda** Gerstaecker

reared from papaya (I No. 5960, 5961), at Bayamon (34-39), at Guayama (I No. 6475).

page 376

**Anastrepha** sp. nov. "F"—det. Alan Stone

in fruit fly traps at Mayaguez (I No. 6963, 7045).

**Anastrepha mombinpraeoptans** Sein (= *A. acidusa* Walker)

(as *A. acidusa* Walk.) Anon 36-32: laboratory maintained at Mayaguez, to study.

(as "sp.") Anon 37-101: studied by L. C. McAllister, Jr., and J. W. Balock.

(as "sp. probably *A. mombinpraeoptans* Sein") Anon 38-79: larvae in mango fruits killed by desiccation.

Anon 38-96: parasites reared by K. A. Bartlett.

reared from pomarrosa fruits (I No. 7301), at Las Mesas (I No. 5995); hybrids from pomarrosa fruits (I No. 7292); from *Spondias ciruela* fruits at Arecibo (I No. 6670); from jobo fruits at Arecibo (I No. 6200, 7336), at Caguas (I No. 6293, 6588, 6294), at Cayey (I No. 6334), at Patillas (I No. 7332); from mango fruit at Bayamon (I No. 6524, 6478), at Guaynabo (I No. 6498), at Rio Piedras (I No. 6489), at Coamo (I No. 6497), at Guayama (I No. 6479), at Aibonito (I No. 6622), at Mayaguez (I No. 5994); from guava fruits at Naguabo (I No. 6717), at Bayamon (I No. 6645); from cashew fruits at Dorado (I No. 6574, 6583); from grapefruit at Manati (I No. 6685), at Garrochales (I No. 7313, 7314), at Arecibo (I No. 7292).

page 378

**Anastrepha unipuncta** Sein (= *A. suspensa* Loew)

(as "sp.") Anon 37-101: studied by L. C. McAllister, Jr. and J. W. Balock.

(as *A. suspensa* Loew) Anon 36-32: laboratory maintained at Mayaguez, to study.

(as *A. suspensa* Loew) Bartlett 39-3: host of *Spalangia philippinensis* Fullaway in breeding work.

reared from black heart cherry fruits, infected in the laboratory (I No. 7288, 7289); from grapefruit at Rio Piedras (I No. 6935, 7222, 6889, 6878, 6885), at Bayamon (I No. 6004, 6005, 6934, 6879, 7176, 7226, 7227, 7434), at Vega Alta (I No. 7213, 7223, 7235, 7431, 7446), at Vega Baja (I No. 6932, 7261), at Manati (I No. 6682, 6933, 7223), at Arecibo (29 interception records), at Barceloneta (I No. 7231), at Las Marias (I No. 5949, 6465), at Adjuntas (I No. 6447), at Juana Diaz (I No. 5974, 5983, 6407, 6461), at Aguada (I No. 6457), at Añasco (I No. 6387, 6268), at Mayaguez (I No. 5951, 6452, 6455, 6464, 6851, 6713, 6714, 6729, 6772); from orange at Lares (I No. 5973, 6458), at Guayanilla (I No. 5479), at Ponce (I No. 5978); from sour orange fruits at Mayaguez (I No. 6799, 6451, 6463), at Maricao (I No. 6453, 6460), at Las Marias (I No. 6454), at San Sebastian (I No. 6456, 6465), at Adjuntas (I No. 5879, 5901, 5930, 5982, 6462), at Yauco (I No. 5980), at Ponce (I No. 5981, 6467), at Juana Diaz (I No. 5975, 5984, 6009, 6001, 6003, 6053, 6232, 6262, 6459); from *Spondias dulcis* fruits (I No. 6632); fifteen interception rearings from fruits of guava, *Psidium guajava*, at Bayamon, at Palo Seco (I No. 6638), at Rio Piedras (I No. 6643), at Caguas (I No. 6292, 6659, 6660), at Vega Alta (I No. 6663, 6664, 6665, 6251,

6252), at Vega Baja (I No. 6519, 6641, 6667), at Arecibo (I No. 6181, 6200, 6283, 6666), at Aguadilla (I No. 6443), at Sabana Grande (I No. 5962, 5963), at Naguabo (I No. 6717); from fruits of almendra, *Terminalia catappa*, at Bayamon (I No. 6608), at Corozal (I No. 6607), at Dorado (I No. 6619, 6621, 7023), at Manati (I No. 6609), at Arecibo (I No. 6070, 6217, 6354, 6716, 6669, 6675, 7025); from fruits of pomarrosa, *Eugenia jambos*, at Bayamon (I No. 6525), at Caguas (I No. 6530), at Cayey (I No. 6562), at Las Marias (I No. 5005); from fruits and icaco, *Chrysobalanus icaco*, at Bayamon (I No. 6624); from fruits of malay apple, *Jambos malaccensis*, at Trujillo Alto (I No. 6595).

**Tetraeuaresta obscuriventris** Loew  
on weeds, Mona Id. (302-40 det. C. T. Greene).

page 382

EPHYDRIDAE

**Ephydra gracilis** Packard—det. D. G. Hall  
Wolcott & Martorell 37-536: in salt lagoons at Guanica and Faro de Cabo Rojo.  
including the AMC records as "sp. det. J. M. Aldrich, at Ensenada xi-26," and as "sp. nov. det. C. H. Curran, at Ensenada xi-26, Faro de Cabo Rojo i-31"; also, from salt lagoons at Ensenada (16-36), at Faro de Cabo Rojo (57-37).

page 384

CHLOROPIDAE

"near *Meromyza*"—det. C. T. Greene  
dark, elongated, diamond-shaped, scale-like larvae on leaves of sugar-cane, at Guanica (67-37), and at many other localities, especially on the south coast.

page 388

DROSOPHILIDAE

**Drosophila melanica** Sturdevant?—det. C. T. Greene  
at Adjuntas (I No. 4057, 6788).

**Drosophila repleta** Williston (not Wollaston)  
reared from grapefruit picked from tree at Barceloneta (I No. 7214).

**Drosophila** sp.  
from ovary of flower of tibéy, *Isotoma longiflora*, at Vega Baja (I No. 7266).

page 389

**Leucophenga varia** Walker—det. C. T. Greene  
resting on sugar-cane at Coloso (332-39).



## AGROMYZIDAE

**Agromyza aeneiventris** Fallen ?—det. C. T. Greene  
on tender leaves of *Coccolobis laurifolia*, Mona Id. (43-40).

**Agromyza caerulea** Malloch  
Bailey, W. K., and Plank, H. K., "An Agromyzid Fly Infesting Sweet-potato Seed in Puerto Rico." *Jour. Ec. Ent.*, **33**(4): 704-5. Menasha, Wisconsin, August 1940.

page 391

**Cryptochaetum iceryae** Williston—Introduced  
adults from shipment of parasitized cottony cushion scale from Whittier, California, released on Mona Id. (200-40).

page 392

## HIPPOBOSCIDAE

Dr. J. C. Bequaert has checked the following records and indicated generic transfers and synonymy.

**Ornithoctona erythrocephala** Leach  
Coquillett: on sparrow hawk at Adjuntas and from Culebra Id. Johnson, C. W., in *Psyche* **29**( ): 84. Cambridge, 1922: on *Falco sparverius*.  
on *Gymnasio nudipes* (H. E. Anthony); on *Buteo borealis* at Mayaguez.

**Olfersia aenescens** Thompson (= *O. diomedae* Coquillett—det. J. M. Aldrich = *O. erythroptis* Bigot)

**Olfersia fossulata** Macquart  
on booby, *Sula leucogaster*, Desecheo Id. (S. T. Danforth).

**Olfersia spinifera** Leach—det. Alan Stone  
on frigate bird, *Fregata magnificens*, Mona Id. (152-39), at Mayaguez (J. R. Ramos).

**Lynchia albipennis** Say (= *Olfersia albipennis* Say)

**Pseudolynchia canariensis** Macquart (= *Lynchia maura* Bigot)

## STREBLIDAE

Dr. J. C. Bequaert notes the following records.

**Paradyschira dubia** Rudow  
(as *P. fusca* Spesier—det. J. C. Bequaert) Anthony, H. E., "Mammals of Porto Rico, Living and Extinct." *Scientific Survey of Porto Rico and the Virgin Islands*, **9**(1): 1-238, pl. 54. New York Academy of Sciences, New York, 1925: p. 18, on *Noctilio leporinus mastivus*, in cave, Piedra de la Cueva, Loiza Aldea.

**Pterellipsis aranea** Coquillett (not *araeneae*)  
Anthony 25-39: on *Brachyphylla cavernarum*, det. J. C. Bequaert.  
at Bayamon (Aug. Busck) det. J. C. Bequaert.

**Trichobius dugesii** Townsend

Jobling, J. W., in *Parasitology*, 30( ): 383 (1938): from  
*Artibeus jamaicensis*.

at Bayamon (Aug. Busck) det. J. C. Bequaert.

**Trichobius pseudotruncatus** Jobling (= *T. kesselae* Jobling)—

det. J. W. Jobling  
from *Artibeus jamaicensis*.

**Trichobius truncatus** Kessel—det. J. W. Jobling

from *Artibeus jamaicensis*.

page 393

**SIPHONAPTERA**

page 394

**ECHIDNOPHAGIDAE**

**Tunga penetrans** L.

on man, Mona Id. (77-39).

page 395

**PULICIDAE**

**Ctenocephalus canis** Curtis

on dog, Mona Id. (76-39).

page 396

**LEPIDOPTERA**

page 397

**NYMPHALIDAE**

**Danaus menippe** Hübner—det. C. Heinrich

reared from *Asclepias curassavica* at Corozal (I No. 7426).

**Heliconius charitonius** L.

on Mona Id. (168-39, 28-40), in gorge at Guajataca (67-  
38), in Peñon del Collao, Cayey (129-40).

**Colaenis julia** F.

in gorge at Guajataca (66-38).

page 398

**Dione vanillae** L.

on Mona Id. (26-40, 224-40).

**Synchlœ tulita** Gundlach

in gorge at Guajataca (269-39).

page 399

**Junonia genoveva** Cramer

on Mona Id. (27-40); adults frequenting flowers of *Bor-  
reria verticillata* at Yabucoa (243-39).

**Anartia jatrophae** L.

adults very abundant in cane field at Salinas (249-39).

**Eunica monima** Cramer (not *Eunia*)  
on Mona Id. (226-40).

**Didonis biblis** F.

adults at Faro de Cabo Rojo (54-37), at Salinas (304-39); larvae on leaves of pringamosa, *Tragia volubilis*, at Quebradillas, reared by Cesário Perez.

page 400

**Victorina steneles** L.

at Peñon del Collao, Cayey (128-40).

**Hypolimnas misippus** L.

adults of both sexes abundant at Colonia Jauca, Salinas, October 1939 (321-39).

**Historis orion** F.

(73-37); adults feeding on exuding sap of dying *Inga vera* tree at Ciales (32-36).

page 401

SATYRIDAE

**Calisto nubila** Lathy

in mountains north of Yauco (277-39).

LYCAENIDAE

**Lycaena filenus** (= *L. hanno*) det. Wm. T. M. Forbes

larvae on buds, flowers and seeds of *Macroptilium lathyroides*, reared by Cesário Perez.

page 402

**Lycaena theonus** Lucas

Wolcott 35-144: summarizing rearing of larvae on buds and flowers of lima beans and *Crotalaria incana*.

**Hemiargus** sp. "near *zachaeina* B. & D."—det. C. Heinrich

on weeds, Mona Id. (244-40).

page 403

PIERIDAE

**Pieris monuste** L.

larvae very abundant on *Cleome gynandra*, from Guanica to Guayanilla (29-37), on Mona Id. (25-40) attacking onions when normal host was weeded out.

**Phoebis agarithe** Boisduval

larvae on *Pithecolobium dulcis*, reared by Cesário Perez.

page 404

**Phoebis statira neleis** Boisduval—det. F. E. Watson

larvae on tender leaves of quenepa, *Melicoca bijuga* L. (12-36), in July 1936, June 1937 and September 1939.

page 405

**Eurema portoricensis** Dewitz

Watson 38-2: "the outer margin of the primary rounded, and both primary and secondary with a narrow black border."

**Eurema sanjuanensis** Watson, F. E., "A New *Eurema* from Puerto Rico." Amer. Mus. Novitates 971, pp. 2. New York, April 25, 1938: TYPE from San Juan, P. R.

page 406

PAPILIONIDAE

**Papilio pelaus** F.

reared from larvae on grapefruit at Palo Seco (I No. 5968, 6012, "a new local race" det. Wm. Schaus).

HESPERIIDAE

**Goniurus proteus** L.

adults abundant at flowers of *Moringa moringa* and *Pisonia albida*, Mona Id. (227-40).

page 407

**Acolastus amyntas** F.

Anon 38-93: larvae feed on leaves of *Derris elliptica* (det. J. F. Gates Clarke).

page 408

**Proteides idas** Cramer

(as *P. pedro* det. Wm. Schaus) Anon 38-93: larvae feeding on leaves of *Derris elliptica* (H. K. Plank).

**Hesperia syrictus** F.

on Mona Id. (163-39, 228-40).

page 409

**Choranthus hübneri** Plotz

male and female reared from larvae feeding on leaves of areca palm by F. Sein (70-38 det. as *Atrytone* by J. F. Gates Clarke).

**Catia otho** Abbott & Smith

at Mayaguez (I No. 5939, 5940 det. as "sp., to the *otho-resuria* group"); on Mona Id. (112-39, 229-40).

page 410

**Lerodea tripunctata** Herrich-Schaeffer

on Mona Id. (212-39).

**Prenes ares** Felder

on Mona Id. (212-39).

**Prenes nero** F.

(as *P. sylvicola* H. S.) at Mayaguez (I No. 5938).

page 412

**Perichares corydon** F.

Anon 39-118: larvae feed on leaves of bamboo at Mayaguez.

page 413

## EUCHROMIIDAE

**Eunomia rubripunctata** Butler—det. J. F. Gates Clarke  
at light, Mona Id. (243-40).**Cosmosoma auge** L.  
at light (15-39).**Horama panthalon** F.  
flying among weeds at Guayanilla (82-40).**Horama pretus** Cramer  
at light (I No. 6908); frequenting flowers of *Heliotropum indicum*, Vieques Id. (104-40); at Manati (339-39).**Empyreuma pugione** L.  
(I No. 6207, 6220); larvae on oleander (384-40).**Correbidia terminalis** Walker  
at light on El Yunque (40-39 det. J. F. Gates Clarke).

page 415

## ARCTIIDAE

**Progona pallida** Möschler  
Garcia-Diaz 38-96: listed.**Ammalo insulata** Walker  
in cane field at Quebradillas (24-39); at lighthouse, Mona Id. (237-40).**Calidota strigosa** Walker  
adult hiding under loose bark on fence post, Mona Id. (24-40), other at light (230-40).**Ecpantheria icasia** Cramer  
Anon 38-93: larvae eating vanilla leaves (det. J. F. Gates Clarke).  
egg-mass on *Cedrela odorata*, Villalba (346-40), and adults at light at Villalba (412-40).

page 417

## PERICOPIDAE

**Composia sybaris** Cramer  
adults abundant on Mona Id. (223-40).

page 418

## NOCTUIDAE

[Schaus, Wm., "Insects of Porto Rico and the Virgin Islands—  
Moths of the Family Noctuidae." Scientific Survey of Porto

Rico and the Virgin Islands, 12(2): 177-290. New York Academy of Sciences, New York, June 7, 1940.]

**Lycangesia** sp. nov.—det. Wm. Schaus  
at light at Bayamon (I No. 6761).

**Heliothis obsoleta** F.

Anon 39-65: "the most serious handicap in the production of sweet corn."

Fife 39-6: not observed attacking cotton in P. R.  
adult resting on sugar-cane, Ceiba (301-39); larvae eating pigeon peas (I No. 7355).

**Heliothis virescens** F.

Fife 39-6; larvae numerous on *Abutilon hirtum* at Guanica, Lajas and Boquerón, November 1935.

page 419

**Feltia annexa** Treitschke

Gage 39-22: a pest of tobacco.

larvae attacking cucumber plants (72-37), weeds on Mona Id. (213-39).

**Feltia subterranea** F.

Fife 39-6: attacking young seedling cotton at Boquerón, August and September 1937.

completely destroying three plantings of cotton at Boquerón (61-37).

page 420

**Xanthopastis timais** Cramer

larvae exceptionally abundant on spider amaryllis on the beach between Arecibo and Hatillo (335-39).

**Cirphis latiuscula** Herrich-Schaeffer

at Bayamon (I No. 6754).

page 422

**Catabena esula** Druce

common at light, Mona Id. (240-40 det. G. F. Gates Clarke).

page 423

**Laphygma frugiperda** Smith & Abbot

Anon 38-101: attacked by wasps (W. K. Bailey).

Anon 39-63 and 65: a pest of sweet corn.

Fife 39-6: rare of cotton.

larvae very abundant on young sugar-cane at Juana Diaz (7-37), at Guanica (37-37) and their remains present in excrement of *Bufo marinus* L.; on corn at Mayaguez (I No. 5953); on alfalfa at Isabela (49-38); attacking peppers (I No. 6683), at Isabela (I No. 6286); burrowing into gladiolus bulb (69-40).

page 425

**Prodenia dolichos** F.

Fife 39-6: rare on cotton.

**Prodenia pulchella** Herrick-Schaeffer

Fife 39-6: rare on cotton.

**Prodenia ornithogalli** Guenée

Anon 38-59: "serious damaged garden peas on Las Mesas."

page 426

**Xylomiges sunia** Guenée(as *Laphygma*) Fife 39-6: rare on cotton.

page 427

**Atethmia repanda** F. (= *Bagisara inusta* Guené det. F. E. Watson)at light at Bayamon (I No. 6760 det. as = *subusta* Hübn. = *inusta* Guenée).**Cydosa nobilitella** Cramer

at light (I No. 6769).

page 430

**Paectes devincta** Walker

at light at Bayamon (I No. 6025).

**Stictoptera vitrea** Guenée

at light at Bayamon (I No. 6024).

**Charcoma nilotica** Rogenhof

at light at Bayamon (I No. 6748).

page 431

**Mocis repanda** F.

adult at light (245-39); larvae abundant on young sugar-cane at Guanica (334-39)—not previously noted since 1932.

page 433

**Phytometra oo** Cramer

Gage 39-22: "on shade-grown tobacco."

**Pseudohemiceras krugii** Möschlerlarvae boring in twigs of *Tabebuia heterophylla* at Guanica (337-40), of *T. pallida* at Maricao (385-40), of *T. lucida* and *heterophylla* on Mona Id. (316-40).

page 436

**Melipotis acontioides** Guenée.

Wolcott 35-143: an outbreak in Santurce and Hato Rey, August 1933.

adults resting on sugar-cane at Salinas (251-39); larvae defoliating flamboyant at Guanica (35-37); larvae reared to adult from palo verde, *Parkinsonia aculeata*, at Faro de Cabo Rojo (53-37).

**Melipotis januaris** Guenée  
at light at Bayamon (I No. 6021, 6022).

page 437

**Thermesia gemmatilis** Hübner  
Wolcott, G. N. & Martorell, L. F., "Epidemics of Fungus Disease Control Insect Pests in Puerto Rico." Jour. Ec. Ent., 33(1): 201-2. Menasha, Wisconsin, February 1940: outbreak at Isabela controlled by *Spicaria rileyi*.  
at light at Bayamon (I No. 6023 det. as *Anticarsia*); defoliating cowpeas at Isabela (275-39).

page 438

**Capnodes turtur** Felder & Rogenhof  
at light at Bayamon (I No. 6019 as *Massala*).

page 439

**Sylectra erycata** Cramer (not *Syllectra ericata*)  
at light (222-39 det. J. F. Gates Clarke).

page 440

**Anomis erosa** Hübner  
Fife 39-6: on *Sida cordifolia*.

**Anomis illita** Guenée  
Fife 39-6: on *Malachra capitata*.

**Alabama argillacea** Hübner  
Fife 39-5: the most important Noctuid attacking cotton in P. R.  
Wolcott 40-29: the caterpillars do not feed on maga foliage.  
on cotton 6 to 8 in. high, at Boquerón (63-37), on high cotton at Tallaboa (309-39) in October, at Patillas in November (347-39).

page 442

**Trissophaes serpentifera** Walker—det. J. F. Gates Clarke  
one adult at light at Guajataca (160-40), another at Camp Doña Juana, Villalba, April 30, 1940 (LFM & D. deLeon).

page 443

**Mastigophorus dimissalis** Möschler  
at light at Bayamon (I No. 6753).

**Epitomiptera orneodalis** Guenée  
Anon 39-118: larvae feeding on bamboo at Mayaguez.

page 444

SPHINGIDAE

page 446

**Phlegethontius s. jamaicensis** Butler  
Gage 39-22: "on nearly mature plants" of tobacco.  
at light, Mona Id. (238-40).



**Pseudosphinx tetrio** L.

adults at light and larvae on *Plumiera alba*, Mona Id. (239-40).

page 449

**Cautethia noctuiformis** Walker

at light, Mona Id. (214-39).

**Aellopos fadus** Cramer

(I No. 6302, 6303).

**Perigonia lusca** F., var. **interrupta** Walker

at light at Bayamon (I No. 6018); larvae on *Duggena hirsuta* at Martin Peña, reared by Cesário Perez.

**Celerio l. lineata** F.

at light, Mona Id. (225-40).

page 450

## GEOMETRIDAE

[Schaus, Wm., "Insects of Porto Rico and the Virgin Islands—Moths of the Families Geometridae and Pyralidae." Scientific Survey of Porto Rico and the Virgin Islands, 22(3): 291-417. New York Academy of Sciences, New York, July 15, 1940.]

**Scopula** sp. nov.—det. W. Schaus

at light at Bayamon (I No. 6739).

page 454

**Pleuroprucha molitaria** Möschler

at light at Bayamon (I No. 6751).

page 456

## EPIPLEMIDAE

**Letchena myreusalis** Walker—det. W. Schaus

at light at Bayamon (I No. 6752).

page 457

## PYRALIDAE

**Desmia** sp. nov.—Det. W. Schaus

at light at Bayamon (I No. 6758).

**Maruca testulalis** Geyer

Wolcott 37-56: not found in lima beans at Isabela, February to April 1936; abundant in snap beans the preceding autumn. Anon 37-43: a limiting factor in dry bean production (L. B. Scott).

Wolcott 38-84: original host was the wild lima bean *Vicia faba* L., now most abundant in lima beans in autumn.

Anon 38-60: "approximately 85% of the entire borer population."

Latta, R., "Methyl Bromide Fumigation for Destruction of Pod Borer Larvae." Jour. Ec. Ent., **33**(1): 176-179. Menasha, Wisconsin, February 1940: experiments conducted at San Juan, P. R. Complete mortality of *Maruca* larvae at 0.5 pounds per 1,000 cu. ft., above 70° F. for 2 hours at atmospheric pressure, without injury to host.  
abundant on lima beans at Isabela (40-36); in wild lima bean, *Vicia faba* L. (27-36).

page 458

**Synclera frondaria** Guenée—det. W. Schaus & C. Heinrich  
larvae eating shoots of *Tartago ematica* (I No. 7080, 7088).

**Marasmia similis** van Hedemann  
injury of larvae to young cane leaves quite abundant at Aguadilla and Camuy (28-36).

page 459

**Pilocrocis lauralis** Walker  
at light at Bayamon (I No. 6026), on Mona Id. (215-39 det. C. Heinrich).

**Mesocondyla concordalis** Hübner  
[Martorell, L. F., "Notes on the Biology of *Mesocondyla concordalis* Hübner, and its Parasites." Caribbean Forester, **2**(1): 18-19, fig. 1. New Orleans, La., October 1940.]  
larvae on leaves of calabaza at Ponce (341-40); on leaves of roble at Maunabo (6-40), of *Tabebuia heterophylla* and *T. lucida* (det. L. R. Holdridge), on Mona Id. (279-40).

page 460

**Dichogamma amabilis** Möschler  
at light, Mona Id. (216-39, 241-40 det. C. Heinrich).

**Dichogamma redtenbacheri** Lederer  
at light, Mona Id. (234-40).

**Phostria simialis** Guenée—det. W. Schaus  
at light at Bayamon (I No. 6027).

**Phostria originalis** Lederer—det. W. Schaus  
Martorell 39-25: a pest on moca.  
larvae on moca, *Andira inermis*, at Aibonito and Barranquitas (47-36), at Cayey (91-40, 113-40).

page 461

**Lamprosema indicata** F.  
Anon 37-74: larvae feed on *Derris elliptica* (H. K. Plank).  
Anon 38-92: control by hand-picking.  
Anon 39-108: parasitized by *Chrysocharis* sp. and *Apanteles* sp.

**Sylepta gordialis** Guenée  
larvae on leaves of 4 o'clock (I No. 6939, 6973).

page 462

**Margaronia phlegia** Cramer (not *flegia*)larvae on *Thevetia thevetia* at La Fortaleza, San Juan (2-37).**Margaronia aurocostalis** Guenée

at light, Mona Id. (167-39, 232-40).

**Margaronia hyalinata** L.Anon 38-59: "seriously damaged calabaza plantings on Las Mesas, and muskmellon and cucumber plantings."  
on pumpkin at Mayaguez (I No. 7364).

page 463

**Agathodes designalis** Guenéelarvae boring in terminal shoots and eating leaves of *Erythrina glauca* at Cayey (89-40).**Syllepsis martialis** Poey

at light at Bayamon (I No. 6029).

page 464

**Terastia meticulosalis** GuenéeAnon 39-121: killing twigs of *Erythrina berteriana*.larvae boring in twigs of capá blanco, *Petitia domingensis* at Maunabo (46-38), of *Erythrina berteriana* at Mayaguez (I No. 7012).**Crocidophora zinghalis** Walker—det. H. G. Dyar

(810-14).

**Psara periusalis** WalkerGage 39-22: "often attacks young tobacco leaves."  
on *Amaranthus* at Manati (I No. 7139).

page 465

**Psara bipunctalis** F.on *Amaranthus* at Manati (I No. 7141).

page 467

**Pyrausta cerata** F.larvae abundant on *Citharexylon fruticosum* at Yabucoa, Maunabo, Cayey, Bayamon Isabela, Aguadilla, Cabo Rojo and Guanica (51-37), at Maunabo, Patillas, Arroyo, Salinas and Cayey (5-40), at Cayey (110-40), at Guanica (78-40), at Quebradillas and Isabela (73-40) and at San Sebastian (72-40).

page 468

**Paraponyx rugosalis** Möschler(as *Nymphula*) Garcia-Diaz 38-96: listed.

page 469

**Cataclyta sumptuosalis** Möschler(as *Argyractis*) Garcia-Diaz 38-96: listed.

GLAPHYRIINAE

**Dicymolomia pegasalis** Walker—det. C. Heinrich  
on roble (I No. 6771).

ENDOTRICHINAE

**Perforadix sacchari** Sein  
larvae boring in tender roots of sugar-cane at Adjuntas  
(276-39); adult at light at Bayamon (I No. 6763).

EPIPASCHIINAE

**Pococera atramentalis** Lederer  
reared from flamboyant buds (I No. 6974 det. as “?”), of  
almendra (I No. 6973).

page 470

PYRALINAE

**Herculia psammioxantha** Dyar—det. C. Heinrich  
larvae feeding on baled alfalfa hay, making it unsightly  
with webs, at Isabela (74-38).  
According to Mr. Heinrich, in synonymy with Möschler's  
*Parasopia dissimilalis*, but not with *Pyralis manihotalis*  
Guenée.

page 471

SCHOENOBIIINAE

**Scirpophaga longicornis** Möschler  
at light, Mona Id. (211-39).

page 472

CRAMBINAE

**Diatraea saccharalis** F. (not *saccharlis*)  
Dohanian 37-237 to 241: parasites of, introduced from British  
Guiana and Peru.  
Anon 38-96: introduced parasites not recovered, but a native  
parasite of the larva, *Lixophaga diatraeae* TT, with a high  
of 31.9% parasitism at Hormigueros, and *Bassus stigmaterus*  
Cresson with a high of 4.8% at Hormigueros in 1936.  
Anon 39-97: parasites of, introduced.  
Wolcott 38-98 to 101: initiation of observations on natural  
control by *Trichogramma*.  
Wolcott 39-38 to 40: experimental releases of laboratory—  
reared *Trichogramma*.  
Wolcott, G. N., “*Prophanurus alecto* Crawford in Puerto Rico.”  
Jour. Ec. Ent., 32(1): 152-3. Menasha, Wisconsin, Feb-  
ruary 1939: sporadic appearance of, as parasite in eggs of  
*Diatraea*.  
pupae in stems of rice at Fajardo (I No. 6049); adult at  
light, Mona Id. (235-40).

page 475

## GALLERINAE

**Corcyra cephalonica** Stainton

Fife 39-7: in stored cotton seed.

## PHYCITINAE

**Hypsipyla grandella** Zeller (not *Hypsiphyla*)for "a shoot-borer in cedro hembra, *Turpinia paniculata*" read, "a shoot-borer in West Indian Cedar or 'cedro,' *Cedrela odorata*." The Cedar Shoot Borer, the Mahogany Moth.becoming abundant in spring on *Cedrela odorata*, Doña Juana Camp, Villalba (349-40); in mahogany at Patillas (428-40).**Myelois ceratoniae** Zeller (not *ceratonae*)

adults det. H. W. Capper from larvae in tamarind pods (I No. 7467), at Arecibo (I No. 6166).

**Myelois decolor** Zeller

reared from algarrobo pods at Arecibo (I No. 6074, 6088).

page 476

**Myelois notatilis** Walker (= "*transitella* Walker" of authors)  
det. C. Heinrich

larvae completely destroying mamey seed at Mayaguez (I No. 6067).

**Ephestia** presumably *cautella* Walker—det. C. Heinrich

Fife 39-6: attacking injured cotton seed.

reared from icaco fruits at Bayamon (I No. 6611), from almendra fruits at Dorado (I No. 6576).

**Etiella zinckenella** TreitschkeWolcott 35-144: more abundant in *Crotalaria incana* growing on sandy beaches than in heavy clay soil.Wolcott 37-46 and 47: spraying with pyrethrum apparently inhibits oviposition on *Crotalaria incana*.

Wolcott 37-55 and 56: spraying with pyrethrum on lima beans apparently increased infestation.

Anon 37-43: a limiting factor in dry bean production (L. B. Scott).

Anon 37-74: larvae feeding on leaves of *Tephrosia toxicaria* (H. K. Plank).Anon 38-71: heaviest infestation in pods of *Tephrosia* in summer (H. K. Plank).Anon 39-108: parasitized by *Heterospilus etiellae* Rohwer at Isabela, and by *Argyrophylax* sp. nov.Wolcott 38-84 to 88: "most common in lima beans and pigeon pea pods in spring and summer, but shows little seasonal variation in its original host, *Crotalaria incana* L." Partial control with cubé dust.in pods of *Martinsia laurifolia* at Dorado (I No. 7206).

page 477

**Fundella cistipennis** Dyar

Anon 37-43: a limiting factor in dry bean production (L. B. Scott).

Wolcott 37-56: abundant in lima beans in February (1936) at Isabela, none after beginning of April.

Wolcott 38-85: "its original wild hosts are the beach bean, *Canavali maritima* (Aubl.) Thou. and "hedionda," *Ditre-mexa* (*Cassia*) *occidentalis* (L.) Britton & Rose." Partial control by cubé dust.

page 478

The data under the two species of *Elasmopalpus* should be reversed, and, with additions, should read as follows:

**Elasmopalpus lignosellus** Zeller

Möschler. Gundlach.

Dozier 26-117: notes. EEWI-194: a pest of sugar-cane.

Anon 37-43: attacking dry bean variety plantings at Las Mesas.

Anon 38-57: killed 90% of lima bean plants at Las Mesas, also peas and cowpeas.

larvae boring in stalks and stems of cowpeas (66-12 det. W. Schaus); larvae causing dead-hearts in ratoon shoots of young cane, trash burned, at Toa Baja (31-37).

**Elasmopalpus rubedinellus** Zeller

Möschler. Gundlach.

adults abundant, flying over land just plowed at Maunabo (541-12 det. W. Schaus).

page 479

HYBLAEIDAE

**Hyblaea puera** Cramer

Martorell 39-25: an extensive outbreak in nurseries of capá blanco, *Petitia domingensis*, at Cayey. Control by spraying with arsenate of lead.

page 480

PTEROPHORIDAE

**Adaina praeusta** Möschler

at light (I No. 6891).

page 481

TORTRICIDAE

**Platynota rostrana** Walker (not *Plationota*)

Anon 39-120: larvae on vanilla.

reared from icaco fruits (I No. 6579).

**Episimus** sp. nov.—det. Wm. T. M. Forbes

a leaf-folder or leaf-roller on maria, *Callophyllum antil-lanum*, at Vega Baja (168-40).

page 482

**Laspeyresia** sp.—det. C. Heinrich

reared from almendra fruits at Arecibo (I No. 6355).

**Crociosema plebeiana** Zellerlarvae in seed heads of *Sida cordifolia* at Vega Alta (I No. 6416, 6417, 6420); adults at light at Bayamon (I No. 6767), at Manati (I No. 6285).**Balbis excitana** Möschler

Garcia-Diaz 38-96: listed.

page 483

## PHALONIIDAE

**Phalonia** sp. nov.—det. Wm. T. M. Forbes

Garcia-Diaz 38-96: listed

## COSSIDAE

**Psychonoctua personalis** Grotelarvae very abundant in *Laguncularia racemosa* at Boca de Cangrejos (28-38) and of greater size than in coffee; adults at light, Mona Id. (165-39).

page 484

## YPONMEUTIDAE

page 485

**Plutella maculipennis** Curtis

adults always present at light at Guajataca, regardless of season or weather (GNW).

page 486

## COSMOPTERYGIDAE

**Pyroderces rileyi** Walsingham

Fife 39-7: in partly decayed cotton bolls.

**Batrachedra** sp. nov.—det. Wm. T. M. Forbes

feeding in underside of young pineapple fruits at Corozal (161-40).

page 487

## GELECHIIDAE

? **Gnorimoschema** sp.—det. C. Heinrichfrom pods of *Hecastophyllum ligulatum* at Dorado (I No. 6221).**Gnorimoschema gudmannella** Walsingham

abundant on buds and in flowers of cultivated pepper and "aji," April 1940 (F. Sein).

page 489

**Dichomeris rusticus** Walsingham—det. A. Busck

at light at Bayamon (I No. 6737).

**Brachyacma palpigera** Walsingham

Anon 37-74: adults det. A. Busck from larvae reared by H. K. Plank, feeding on *Tephrosia candida* and *T. toxicaria*.  
 Anon 38-71: abundant in pods during summer.  
 in pigeon pea pods (I No. 6893).

**Anacamptis** sp.—det. A. Busck

from hibiscus bolls at Vega Alta (I No. 6415).

page 490

**Phthorimaea operculella** Zeller

a serious outbreak on tobacco at Cayey in January (9-38).

page 492

**Stegasta capitella** F.

at light at Bayamon (I No. 6764).

**Pectinophora gossypiella** Saunders

Wolcott 35-143: disappearance of cotton as a commercial crop did not cause a disappearance of the pink bollworm, as magà pods served as alternate host.

Noble & Hunt 37-842: parasites of, reared for release in P. R.

Anon 38-101: two species of parasites released.

Pastor Rodriguez, J., "Nuestra Industria Algodonera se ve Amenazzda por un Insecto Peligrosos." *El Imparcial Dominical*, pp. 29-30, fig. 1. San Juan, May 23, 1937.

Fife, L. C., "Status of the Pink Bollworm in Puerto Rico during 1935-36." *Jour. Agr. Univ. P. R.*, 21(2): 233-235. San Juan, (July) April 1937.

Fife, L. C., "Alternate Host Plants of the Pink Bollworm, *Pectinophora gossypiella* (Saund.) in Puerto Rico." *Jour. Agr. Univ. P. R.*, 22(4): 483-492, ref. 18. San Juan, (March 23, 1939) October 1938.

Fife 39-4: a summary; parasites of, introduced into P. R.

Cushman 40-362: host of *Calliephialtes ferrugineus* sp. nov. from Boquerón, P. R. (K. A. Bartlett).

Wolcott 40-29: in seed-pods of magà.

in out-of-season cotton at Isabela (83-37, 13-39); in cotton, Vieques Id. (100-40), on Mona Id. (73-39).

page 498

OECOPHORIDAE

**Ethmia notatella** Walker

abundant at light, Mona Id. (213-39, 231-40).

**Ethmia nivosella** Walker

at light at Bayamon (I No. 6745).

page 499

GRACILARIIDAE

**Acrocercops dives** Walsingham

larvae mining in leaves of *Inga vera* at Lares (46-36 det. A. Busck):



page 500

**Leucoptera coffeella** Guerin

Wolcott 35-144: *Chrysocharis lividus* Ashmead and four other new parasites reared by F. Sein.

Wolcott 37-48: ten parasites reared by F. Sein.

Wolcott 37-58 to 61: a summary of Mr. Sein's studies on parasitism of.

Wolcott 38-91: summary of Mr. Sein's work to date, the discovery of *Mirax insularis* Muesebeck in Guadeloupe, F. W. I., and that infestations are due to low humidity caused by rapid evaporation of moisture in localities not protected from the wind by soil contour.

Sein, F., "A Study of the Coffee Leaf-Miner, *Leucoptera coffeella* Guerin" and "Humidity a Factor in Leaf-Miner Infestations." in Ann. Rpt., Agr. Expt. Station, 1937-38, pp. 40-41. San Juan, 1939.

page 502

## PSYCHIDAE

**Oiketicus kirbyi** Guilding

larvæ on leafless trees, Guanica Insular Forest (4-37); on casuarina at Arecibo (76-37); on almendra at Caguas (34-38); on roble at Aibonito (45-38); on capá blanco at San Sebastian (71-40); on morál at Cayey (120-40); on casuarina, Mona Id. (128-39).

**Achanodes antipathetica** Forbes

(as "sp.") Garcia-Diaz 38-96: listed.

page 503

## TINEIDAE

**Tinea mimutella** F.—det. A. Busck

reared by A. S. Mills from pupa on grapefruit at Bayamon (I No. 6770) "a most interesting, striking species, which has never been re-discovered since Fabricius' description. No specimen in British Museum, here, or in Cornell, before this." A. Busck.

**Tineola uterella** Walsingham

on walls of cabins, Mona Id. (233-40).

**Homostinea tischeriella** Walsingham

Garcia-Diaz 38-96: listed.

**Mea includella** Forbes

Garcia-Diaz 38-96: listed.

**Protodarcia** sp.

Garcia-Diaz 38-96: listed.

page 505

MEGALOPYGIDAE

**Megalopyge krugii** Dewitz

adult resting almendra at Vega Alta (I No. 5948); larvae on almendra, cocoons on concrete posts, at Arecibo (57-38); larvae on *Andira inermis* at Cayey (92-40), on *Inga vera* at Cayey (112-40); cocoons on trunk of guácima tree at Ponce (340-40).

NEPTICULIDAE

**Nepticula gossypii** Forbes & Leonard

Fife 39-7: "only at Boquerón."

page 508

HYMENOPTERA

Box, H. E., "The Introduction of Braconid Parasites of *Diatraea saccharalis* Fabr. into certain of the West Indian Islands." Bul. Ent. Research, 18(4): 365-370, pl. 1, fig. 2. London, May 1928.

Dozier, H. L., "Descriptions of Miscellaneous Chalcidoid Parasites from Puerto Rico (Hymenoptera)." Jour. Agr. Univ. P. R., 21(2): 121-135. San Juan, April 1937.

page 509

TENTHREDINOIDEA

TENTHREDINIDAE

**Sterictiphora zaddachi** Dewitz = *Schizocera krugii* Cresson

Martorell 40-32: on moralón, *Coccolobis grandifolia*.

[Martorell, L. F., "Biological Notes on the Sea-Grape Sawfly, *Schizocera krugii* Cresson, in Puerto Rico." Caribbean Forester, 2(3): 141-4, pl. 1. New Orleans, La., April 1941.]

"*Xylosericocera* is a MS name" (I No. 6205); on moralón near Lares (25-37); on cucubano, *Coccolobis laurifolia*, Maricao Insular Forest (-40); on sea grape at Camuy (46-37), at Guajataca (77-37, 42-39, 286-39), at San German (47-37), along the coast from Patillas to Maunabo (82-37), at Bayamon (I No. 6205), at Jayuda (I No. 5911), at Fajardo (1-40), at Salinas (4-40).

ICHNEUMONOIDEA

ALYSIDAE

**Goniarcha** sp. nov.—det. C. F. W. Muesebeck

in fruit fly traps at Mayaguez (I No. 6841, 6842, 7255, 7276).

**Alysia analis** Cresson

in cane field at Toa Baja (71-38).

## BRACONIDAE

**Opius (Utetes) anastrephae** Viereck

Anon 38-96: reared by K. A. Bartlett at Mayaguez from both species of *Anastrepha*: "an important part in biological control; parasitism as high as 49.9% has been recorded."

Anon 39-99: "prevalent" in jobo fruit infested with *Anastrepha mombinpraeoptans* Sein.

reared from fruit fly larvae in jobo at Añasco (I No. 6405), at Arecibo (I No. 7340), at Caguas (I No. 6294), at Maunabo (I No. 7342).

page 510

**Opius** sp. nov.—det. C. F. W. Muesebeck

from *Crocidosema plebeiana* Zeller at Dorado (I No. 6430).

**Apanteles americanus** Lepeltier

reared from sphinx caterpillar on papaya at Bayamon (I No. 5921), at Vega Alta (I No. 7184).

**Apanteles disputabilis** Ashmead—det. C. F. W. Muesebeck

adults abundant on flowers of *Malachra alceifolia* at Guayanilla (150-40).

**Apanteles marginiventris** Cresson

from cocoons on cane leaves (the host presumably *Laphygma frugiperda* caterpillars) at Salinas and Ponce (48-40 det. C. F. W. Muesebeck).

page 511

**Apanteles** sp. nov.—det. C. F. W. Muesebeck

Anon 39-108: reared from *Lamprosema indicata* F. at Isabela.

**Microbracon cushmani** Muesebeck—det. C. F. W. Muesebeck

reared from *Mesocondyla concordalis* at Maunabo (50-40).

**Microbracon hebetor** Say

Fife 39-7: a parasite of *Ephestia cautella*

**Microbracon kirkpatricki** Wilk.—Introduced

Noble & Hunt 37-843: 40,000 released in P. R.

Anon 38-101: a parasite of the pink bollworm.

Fife 39-4: released at Camuy, October and November 1935.

**Microbracon** sp. nov.—det. C. F. W. Muesebeck

Anon 38-96: reared from *Anastrepha mombinpraeoptans* Sein at Mayaguez (K. A. Bartlett).

reared from *Acrocercops dives* Walsingham, a leaf-miner in *Inga vera*, at Lares (46-36); reared from *Crocidosema plebeiana* Zeller (I No. 6430).

**Macrocentrus ancylivorus** Rohwer—Introduced

Anon 39-108: not recovered at Isabela from lima bean pod-borers.

**Macrocentrus** sp.—det. C. F. W. Muesebeck  
from *Anacamptis* sp. on hibiscus at Vega Alta (I No. 6431).

**Chelonus annulipes** Wesm.—Introduced  
Anon 39-97: released as a parasite of *Diatraea saccharalis* F.

**Chelonus blackburni** Cam.—Introduced  
Noble & Hunt 37-843: 14,000 released in P. R.  
Anon 38-101: a parasite of the pink bollworm.  
Fife 39-4: released at Isabela, Quebradillas, Camuy, Hatillo and Boquerón.

**Exeristes roborator** F.—Introduced  
Noble & Hunt 37-843: 3,000 released in P. R.  
Anon 38-101: a parasite of the pink bollworm.  
Fife 39-4: released at Camuy, Isabela and Boquerón.

page 512

**Phanerotoma planifrons** Nees—Introduced  
Anon 39-108: a parasite of the lima bean pod-borer, received from France, released in P. R.

**Trigonophasmus** sp. nov.—det. C. F. W. Muesebeck  
on Mona Id. (285-40).

**Ipbobracon grenadensis** Ashmead—Introduced  
Box 28-365: introduced as a parasite of *Diatraea saccharalis* F. from British Guiana and Venezuela.

**Ipbobracon rimac** Wolcott—Introduced  
Dohanian 37-241: a parasite of *Diatraea saccharalis* F. in Peru.  
Anon 38-96: released but not recovered in P. R.

page 513

**Stantonia lamprosemae** Muesebeck, C. F. W., "Two Reared North American Species of the Genus *Stantonia* Ashmead (Hymenoptera: Braconidae)." Proc. Wash. Ent. Soc., 40(3): 89-91, fig. 1. Washington, March 1938: TYPE from Cuba, but a female was collected at Mayaguez, P. R., by H. L. Dozier on October 18, 1935.

**Bassus stigmaterus** Cresson—Introduced, but probably endemic (as *Microdus diatraeae* Turner) Box 28-365: established in P. R. by introduction from British Guiana.

Dohanian 37-239: introduced from British Guiana.  
the record (IB-513) of "*Bassus (Microdus) sacchari* Myers—det. C. F. W. Muesebeck, reared from larvae of *Diatraea saccharalis* F. on sugar-cane, October 1935 at Hormigueros (K. A. Bartlett)." is this species.

Anon 38-97: 4.8% of parasitism at Hormigueros in January 1936 (K. A. Bartlett).

Anon 39-97: reared at Añasco, released at Fajardo.  
adult in field of young plant cane at Isabela (56-38 det. GNW).

**Aphidius testaceipes** Cresson

Wadley 37-106 to 107: a parasite of *Aphis maidis* and *Hystero-  
neura setariae*.

(as *Lysiphlebus*) Fife 39-9: a parasite of *Aphis gossypii*.

**Mirax insularis** Muesebeck, C. F. W., "A New West Indian Species of *Mirax* Haliday parasitic on the Coffee Leaf-Miner (Hymenoptera: Braconidae)." Proc. Ent. Soc. Washington, 39(6): 139-140, fig. 1. Washington, June 1937: TYPE from Guadeloupe, French West Indies.—Introduced.

Sein 39-40: approximately 2,000 adults released in P. R., recoveries several generations later at Lares and Quebradillas, additional releases made in June 1938.

page 515

## ICHNEUMONIDAE

**Calliephialtes ferrugineus** Cushman, R. A., "New Genera and Species of Ichneumon Flies, with Taxonomic Notes." Proc. U. S. Nat. Mus., 88(3083): 355-372. Washington, 1940: p. 362, TYPE from Boquerón, P. R., reared from *Pectinophora gossypiella* Saunders (K. A. Bartlett).

page 516

**Ephialtes rufoniger** Cresson—det. R. A. Cushman at Arecibo (I No. 6774).**Tromatobia lateralis** Cresson (= *T. cressoni* Dewitz)

Cushman 40-363: "reared from spider egg-cocoon from Lares, P. R., September 8, 1921."

parasitizing spider egg-mass on cane leaf at Guanica (72-38).

page 517

**Eiphosoma annulata** Cresson

in cane fields at Salias (292-39), at Guayanilla (151-40); on flowers of *Borreria verticillata* at Aguadilla (260-39).

page 518

**Stiboscopus thoracicus** Ashmead

Wolcott 37-144: reported as a less common parasite of the coffee leaf-miner.

reared from *Apanteles* cocoons on tobacco hornworm (200-39 det. R. A. Cushman).

## CYNIPOIDEA

## FIGITIDAE

**Eucoila (Hexamerocera) atriceps** Ashmead & E. (H.) sp.

(as "sp.") Anon 38-96 & Anon 39-99: reared from *Anastrepha mombinpraeoptans* Sein and *A. suspensa* Loew at Mayaguez (K. A. Bartlett).

from fruit fly larvae in jobo fruits at San Sebastian (I No. 5991), at Caguas (I No. 6295); from larvae of *Euxesta stigmatias* Loew in rotten corn (I No. 7158).

## CHALCIDOIDEA

## AGAONIDAE

*Colyostichus longicaudatus* Mayr—det. A. B. Gahan  
from figs at Arecibo (I No. 7450).

*Idarnes carmae* Walker—det. A. B. Gahan  
abundant on *Ficus laevigata* and *F. stahlii* at Arecibo (I No. 6138, 6212, 7450).

*Secundeisenia mexicana* Ashmead—det. A. B. Gahan  
on *Ficus stahlii* at Garrochales (I No. 7306); on *Ficus laevigata* at Arecibo (I No. 7450).

*Blastophaga insularis* Ashmead—det. A. B. Gahan  
on *Ficus stahlii* at Arecibo (I No. 6138, 6212).

## MYMARIDAE

*Mymar antillanum* Dozier 37-130: TYPE from Boquerón, P. R., others from Las Vegas, Mayaguez and Guanica.

*Gónatocerus portoricensis* Dozier 37-131: TYPE from P. R., swept from vegetation.

*Gónatocerus antillensis* Dozier 37-132: TYPE from Mayaguez, P. R.

*Erythmelus longicornis* Dozier 37-133: TYPE from Mayaguez, P. R.

*Erythmelus miridiphagus* Dozier 37-133: TYPE from Hormigueros, P. R.

*Erythmelus nanus* Dozier 37-134: TYPE from Mayaguez, P. R.

page 519

## TRICHOGRAMMIDAE

*Xenufens ruskini* Girault—det. A. B. Gahan  
from eggs of *Prenes nero* at Canovanas (31-36).

*Oligosita magnifica* Dozier 37-135: TYPE from Cartagena Lagoon, P. R., others from Boquerón and Bayamon.

*Trichogramma minutum* Riley

Wolcott & Martorell 37-577 to 579: egg-clusters of *Diatraea saccharalis* F., both fresh and parasitized by *T. m.*, eaten by *Monomorium c. ebeninum* Forel.

Wolcott 38-98 to 101: initiation of observations on natural control by, of *Diatraea saccharalis* F.

Wolcott 39-38 to 40: experiments on release of laboratory-reared parasites in cane fields.

page 520

## TETRASTICHIDAE

page 521

**Tetrastichus haitiensis** Gahan

Wolcott 35-144: abundance in spring.

Wolcott 37-53: "Deviation from a one year life-cycle is of tremendous importance to *Diaprepes abbreviatus* L. in enabling its eggs to escape attacks by this common parasitic wasp, which is most abundant during the late spring, but is very scarce during the autumn and winter."Wolcott 37-90: changing the oviposition time of *Diaprepes abbreviatus* L.**Tetrastichus tatei** Dozier 37-129: from *Gynaikothrips uzeli* on *Ficus nitida* at Mayaguez.**Tetrastichus marylandensis** GiraultWadley 37-106: a parasite of *Aphis maidis*.

page 522

**Tetrastichus** sp. nov.—det. A. B. Gahan

Wolcott 35-144, Wolcott 37-59 and Wolcott 37-48: reared by F. Sein from leaf-miner infested coffee leaves.

in fruit of *Casearia decandra* at Vega Alta (I No. 6512).

## ENTEDONTIDAE

**Derastenus** sp. near **fullawayi** Crawford

(as "sp.") Wolcott 35-144, Wolcott 37-48 and Wolcott 37-59; reared by F. Sein from coffee leaves infested with leaf-miner.

**Closterocerus** sp. near **cinctipennis** Ashmead

(as "sp.") Wolcott 35-144, Wolcott 37-48 and Wolcott 37-59: a less common parasite reared by F. Sein from coffee leaves infested with leaf-miner.

**Closterocerus leucopus** Ashmead

Wolcott 37-48 and Wolcott 37-59: Mr. Sein finds this the most abundant parasite of the coffee leaf-miner.

page 523

**Chrysocharis lividus** Ashmead

Wolcott 35-144, Wolcott 37-48 and Wolcott 37-59: found by Mr. Sein to be the second most abundant parasite of the coffee leaf-miner.

**Chrysocharis** sp. det. A. B. Gahan.Anon 39-108: reared from *Lamprosema indicata* F. at Isabela.**Horismenus cupreus** Ashmead

Wolcott 35-144, Wolcott 37-48 and Wolcott 37-59; third in order of abundance of parasites of coffee leaf-miner, as indicated by rearings conducted by Mr. Sein.

**Horismenus** sp.—det. C. F. W. Muesebeck  
from *Apanteles americanus* Lep. at Vega Alta (I No.  
7284).

page 524

EULOPHIDAE

**Dasyscapus parvipennis** Gahan—Introduced  
Dohanian, S. M., "Life History of the Thrips Parasite, *Dasyscapus parvipennis* Gahan, and the Technic for Breeding it." Jour. Ec. Ent., 30(1): 78-80, ref. 6. Menasha, Wisconsin, February 1937.  
Anon 38-99: Twelve generations reared in the laboratory and 26,000 released in P. R. but no permanent establishment noted.  
Anon 39-108: not recovered.

SPALANGIDAE

**Spalangia drosophilae** Ashmead—det. A. B. Gahan  
Bartlett 39-6: reared from horn fly puparium at Guanica Lake, September 22, 1936.  
**Spalangia haematobiae** Ashmead—det. H. L. Dozier  
Bartlett 39-6: recorded by Dozier  
**Spalangia muscidarum** Richmond—det. A. B. Gahan  
Bartlett 39-6: "parasitized as high as 30% of the puparia" of the horn fly in some collections.  
**Spalangia philippensis** Fullaway—Introduced  
Anon 38-100, Anon 39-99 and Bartlett 39-6: introduced as a horn fly parasite, recovered at Juana Diaz four months later from *Anastrepha acidusa*.

PTEROMALIDAE

**Pachyneuron allograptae** Ashmead  
Fife 39-9: "the control of *Aphis gossypii* effected by *Baccha clavata* was to a large extent annulled by the action of a secondary pupal parasite."  
from syrphid fly puparia, Mona Id. (214-40, 300-40 det. A. B. Gahan).  
**Pachyneuron siphonophorae** Ashmead  
Wadley 37-106 to 107: a parasite of *Aphis maidis* and *Hystero-neura setariae*.  
**Pachycrepoideus dubius** Ashmead—det. C. F. W. Muesebeck  
Bartlett 39-6: "reared in small numbers" from horn fly and/or house fly puparia.  
**Muscidifurax raptor** Girault & Sandhouse—det. C. F. W. Muesebeck  
Anon 39-107 and Bartlett 39-6: reared from horn fly and/or house fly puparia.



**Neocatolaccus** sp. nov.—det. A. B. Gahan  
in puparium of *Baccha capitata* at San Sebastian (49-40).

page 525

ELACHERTIDAE

**Zagrammosoma seini** Wolcott  
(as "sp.") Wolcott 37-48 and Wolcott 37-59: a less common  
parasite of the coffee leaf-miner, as shown by the rearings  
made by Mr. Sein.

page 526

**Cirrospiloideus** sp. nov.  
Wolcott 37-48 and Wolcott 37-59: a less common parasite of  
the coffee leaf-miner.

**Elachertus** sp. nov.  
Wolcott 35-144: reared from coffee leaves infested with coffee  
leaf-miner.

ELASMIDAE

**Elasmus platydrae** Ferrière—Introduced  
Noble & Hunt 37-843: 57,000 of this parasite of the pink boll-  
worm released in P. R.

page 527

APHELINIDAE

**Encarsia nigricephala** Dozier 37-129: TYPE, three females from  
whitefly, *Bemisia* sp., on *Euphorbia hypericifolia* at Maya-  
guez, P. R.

page 528

**Prospaltella berlesei** Howard—Introduced  
Anon 38-98: from Louisiana, released for control of scales on  
papaya.

page 529

delete

EUCALYMNATUS

ENCYRTIDAE

**Aphycus** sp. nov.—det. A. B. Gahan  
(I No. 6290, 6585).

**Metaphycus monticolens** Dozier 37-124: TYPE from Maricao,  
P. R., another from Mayaguez.

**Leptomastidea antillicola** Dozier 37-121: TYPE, a single male  
from *Pseudococcus virgatus* on *Inga vera* at San Sebastian,  
P. R.

page 530

**Anagyris similis** Dozier 37-122: TYPE swept from grass at Santa  
Isabel, P. R., others from San German and Guanica.

**Anagyrus graminicolens** Dozier 37-123: TYPE swept from grass at Mani beach (Mayaguez), P. R.

**Anagyrus coccidivorus** Dozier—Introduced  
Anon 38-98, Anon 38-107 and Bartlett 39-67 to 71: described from Haiti, introduced as a parasite of the pineapple mealybug from Hawaii, released in P. R. but not recovered.

**Hambletonia pseudococcina** Compere—Introduced  
Anon 38-98, Anon 39-107 and Bartlett 39-67 to 71: from Brasil and Venezuela, introduced as a parasite of the pineapple mealybug from Hawaii, released in P. R. and recovered at Lajas.

**Oöencyrtus** sp. nov.—det. A. B. Gahan  
Bartlett 39-497: a hyperparasite on *Gonatopus* sp.

**Oöencyrtus** sp. nov.—det. A. B. Gahan  
from eggs of *Prenes* sp. at Guanica (16-38, 17-38), at Guajataca (65-38).

**Aphidencyrtus aphidivorus** Mayr  
Wadley 37-107: a parasite of *Hysteroneura setariae*.

page 531

**Homalopoda cristata** Howard  
Dozier 37-123: at Guayama and Mayaguez.

**Pseudohomalopoda prima** Girault  
Dozier 37-124: reared from scales on lemon at Mayaguez.

**Cheiloneurus pulvinariae** Dozier  
(as "sp.") Anon 39-100: reared from *Asterolecanium bambusae* by K. A. Bartlett.

**Hunterellus hookeri** Howard  
Dozier 37-125: from *Rhipicephalus sanguineus*, the brown dog tick, at Mayaguez.

page 532

CALLIMOMIDAE, and transfer the following record to page 518, under  
AGAONIDAE

**Colyostichus** (not *Colostichus*) *biannulatus* Mayr—det. C. F. W. Muesebeck  
infesting fruits of *Piper* at Cidra (I No. 1631 Leonard 33-131).

page 534

EURYTOMIDAE

**Bephrata cubensis** Ashmead  
reared from fruit of *Annona reticulata* at Yauco (6-37).

page 535

## EUCCHARIDAE

- Kalapa furcata** F.—det. A. B. Gahan  
resting on guava leaf at San Sebastian (51-38).

## CHALCIDIDAE

- Brachymeria incerta** Cresson  
Fife 39-6: parasitizing *Alabama argillacea*.  
in cane field at Salinas (256-39); reared from chrysalis of  
*Pieris monuste* at Guanica (30-37); from pupa of *Psara*  
*bipunctalis* at Guanica (267-39); from pupa of *Mesocondyla*  
*concordalis* at Maunabo (51-40); at Cayey (226-39); on  
Mona Id. (268-40.)

page 536

- Brachymeria robustella** Wolcott  
resting on grapefruit at Pueblo Viejo (I No. 6773).
- Spilochalcis flavopicta** Cresson—det. A. B. Gahan  
Fife 39-7: a parasite of *Pyroderces rileyi*.  
on Mona Id. (178-39 "very near or possibly only a  
variant").
- Spilochalcis femorata** F.  
at Vega Baja (I No. 7300), at Guanica (326-39).
- Spilochalcis homaledrae** Wolcott  
on blossoms of *Pisonia albida*, Mona Id. (308-40 det. A. B.  
Gahan).

page 537

- Spilochalcis cocois** Wolcott  
in fruit fly trap (I No. 6921, 6925, 6895 as "near *cocois*  
Wolcott"), at Bayamon (I No. 6872).  
The record "on corn at Isabela (107-31)" should be under  
*S. femorata* F., re-determined GNW.
- Smiera eubule** Cresson  
at Salinas (259-39); reared from chrysalis of *Phoebis*  
(*Callidryas* or *Aphrissa*) *statira neleis* Boisduval on *Meli-*  
*cocca bijuga* (322-39).
- Trigonura** sp. nov.—det. A. B. Gahan  
many adults on logs of *Inga vera* at la Yndiera (Lares-  
Yauco road) apparently attempting to parasitize Ceram-  
bycid eggs or larvae, *Neoclytus araeniformis* Olivier, under  
bark (320-21).

## PROCTOTRUPOIDEA

## DIAPRIIDAE

- Ashmeadopria** sp. nov.—det. C. F. W. Muesebeck  
Bartlett 39-6: "a parasitism of 10%" of hornfly puparia.  
Anon 38-96 and Anon 39-90: reared from *Anastrepha mombin-*  
*praeoptans* Sein.

page 538

SCELIONIDAE

**Prophanurus alecto** Crawford

Wolcott, G. N., "*Prophanurus alecto* Crawford in Puerto Rico." Jour. Ec. Ent., **31**(1): 152-153. Menasha, Wisconsin, February 1939.

reared from eggs of *Diatraea saccharalis* F. at Quebradillas, Isabela and Coloso (64-38 det. C. F. W. Muesebeck), at Guanica (75-38).

**Telenomus** sp. near **convergens** Ashmead

Wolcott 37-48 and Wolcott 37-59: a less common parasite of the coffee leaf-miner, as indicated by the rearings by Mr. Sein.

page 539

FORMICOIDEA

Smith, M. R., "The Ants of Puerto Rico." Jour. Agr. Univ. P. R., **20**(4): 819-875, fig. 19, ref. 16. San Juan (January 1937) October 1936: keys and notes on all ants found in P. R.; only new species or subspecies, and new records are noted below.

PONERINAE

**Platythyrea punctata** F. Smith

in termite nest at Ciales (613-22).

**Ponera opaciceps** var. **jamaicensis** Aguayo

Smith 36-826: at Ensenada and in the mountains north of Yauco.

page 540

**Ponera trigona** var. **opacior** Forel

Smith 36-826: in the mountains east of Mayaguez.

**Odontomachus haematodes** L.

in nest of termite, *Nasutitermes costalis*, at Ciales (467-21); in rotten stump, Mona Id. (131-39 det. M. R. Smith as "var.").

page 541

MYRMICINAE

**Pseudomyrma flavidula delicatula** Forel

at Bayamon (99-24 det. M. R. Smith), at Manati (I No. 5989).

**Monomorium carbonarium ebeninum** Forel

Wolcott, G. N. & Martorell, L. F., "The Ant, *Monomorium carbonarium ebeninum* Forel, in a new Rôle, as Predator on the Egg-Clusters of *Diatraea saccharalis* F., in Puerto Rican Cane Fields." Jour. Agr. Univ. P. R., **21**(4): 577-579. San Juan (November 12) October 1937: attacking about one-sixth of 9,000 egg-clusters examined.

Wolcott 38-95: occupying hormiguilla tunnels in guamá tree at Mayaguez, deserted by hormiguilla after fight with hormiga brava over thallium poison bait:

feeding on eggs of *Diatraea saccharalis* (22-36 det. M. R. Smith).

page 542

**Monomorium floricola** Jerdon

nesting in stump, Mona Id. (181-39 det. M. R. Smith).

page 543

**Solenopsis geminata** F.

Wolcott 37-42: defeated by hormiguilla in raids on poison meat bait on mango tree at Rio Piedras.

Wolcott 38-95: so weakened colony of hormiguilla in raids on thallium meat bait in guamá tree at Mayaguez that galleries were later occupied by *Monomorium c. ebeninum* Forel.

Fife 39-4: predacious on pink bollworm.

attending *Saissetia oleae* on capá prieto at Salinas (9-40); on grapefruit at Dorado (I No. 6409); attending scales on teak at Patillas (426-40); on Mona Id. (210-39), attending cottony cushion scale on casuarinas (312-40 det. M. R. Smith).

page 546

**Crematogaster steinheili** Forel (not *Cremastogaster*)

on lignum-vitae tree, attending *Crypticerya rosae*, at Guánica (48-37 confirmed M. R. Smith).

**Pheidole subarmata** Mayr var. **borinquensis** Wheeler (not *borinquensis*)

**Pheidole fallax jelskii antillensis** Forel

Anon 38-103: "harbors the intermediate or cystic stage of the tapeworms of the *Raillietina* group in the chicken (det. M. R. Smith)."

**Macromischa isabellae** Wheeler subsp. nov. *mutica* Smith 36-847: TYPE from Maricao Insular Forest, P. R.

**Rogeria curvipubens** Emery

Smith 36-851: at Ensenada.

**Tetramorium lucayanum** Wheeler

Smith 36-852: at Mayaguez.

page 549

**Wasmannia auropunctata** Roger

on grapefruit tree (I No. 7328); on Mona Id. (183-39 det. M. R. Smith).

**Sturmigenys eggersi** Emery

Smith, 36-855: at Juana Diaz and Maricao Insular Forest.

**Epitritus emmae** Emery

Smith 36-858: at Arecibo and Ensenada.

page 551

DOLICHODERINAE

**Tapinoma melanocephalum** F.

Wolcott 38-96: only temporarily interested in fresh meat thallium mixture.

page 552

**Dorymyrmex pyramicus niger** Pergande

nesting in stump, Mona Id. (182-39 det. M. R. Smith) and attending cottony cushion scale on casuarinas (312-40 det. M. R. Smith).

FORMICINAE (NOT CAMPONOTIDAE)

**Prenolepis (Nylanderia) microps** M. R. Smith 36-868: TYPE from 14 Km. east of Mayaguez, P. R.

**Prenolepis longicornis** Latreille

Wolcott 39-96: individuals killed by fresh meat thallium bait, but the colony persists.

in house at Arecibo (I No. 7236); on Mona Id. (209-39).

page 554

**Myrmelachista ramulorum** Wheeler

Wolcott 37-41 to 44: experiments in control by meat or fish mixed with thallium nitrate or thallium acetate.

Wolcott 37-61: fish oil repellent; continued experiments show no improvement in poison bait itself is needed, but in method of application, as water-soluble thallium compounds are very toxic to coffee shade trees.

Wolcott 38-93: collapsible metal foil tubes in which to apply poison bait only moderately successful.

Wolcott 39-41 to 43: unexplained failure of attractiveness of thallium bait.

**Myrmelachista ramulorum** subsp. nov. **fortior** Wheeler, Wm. M., "Neotropical Ants collected by Dr. Elizabeth Skwarra, and Others." Bull. Bussey Comp. Zoology, Harvard, 77(5): 157-240, fig. 6. Cambridge, 1934: p. 189, TYPE from Mona Id., others from P. R.

Smith 36-873: quoting Wheeler.

page 555

**Camponotus ustus** Forel

under bark of *Sideroxylon foetidissimum* at Ciales (418-40).

page 556

SPHECOIDEA

BEMBECIDAE

**Bicyrtes spinosa** F.—det. G. A. Sandhouse on Mona Id. (143-39).

page 557

**Stictia signata** L.  
on Mona Id. (127-39).

page 558

## SPHECIDAE (LARRIDAE)

**Sceliphron caementarium** Drury

Anon 38-102: on corn.

building nests of mud, provisioned with spiders, at Bayamon (I No. 6006), on underside of nearly horizontal coconut palm at Manati (155-40), in concavities of big rock at Aibonito (189-40); resting on guava bush at Villalba (98-37).

**Notogonidea ignipennis** Smith

at Bayamon (I No. 6033, 6036, 6039); in cane fields at Coloso (26-39); on fresas, Peñon del Collao, Cayey (121-40); on flowers of *Borreria verticillata* at Aguadilla (26-38); abundant on flowers of *Heliotropum indicum*, Vieques Id. (106-40).

**Notogonidea trifasciata** Smithin fruit fly trap (I No. 6819 as "*Leptolarra*").

page 559

**Larra americana** Saussure—Introduced

Wolcott 37-63: first attempt at introduction into P. R.

Wolcott 38-96 to 98: difficulties encountered in introduction.

Wolcott, G. N., "The Introduction into Puerto Rico of *Larra americana* Saussure, a specific Parasite of the "Changa," or Puerto Rican Mole-Cricket, *Scapteriscus vicinus* Scudder." Jour. Agr. Univ. U. R., **22**(2): 193-218, fig. 4, ref. 16. San Juan, (May) April 1938.

Wolcott, G. N. (translated by F. Sein), "Importando avispas del Brasil para acabar con las changas puertorriqueñas." El Mundo, p. 7, fig. 3. San Juan, October 30, 1938.

Wolcott, G. N., "Presence of Host Keeps Parasites alive in Captivity." Science, **87**(2259): 352. New York, April 15, 1938.

Wolcott 39-43: successful bulk shipments when accompanied by live parasitized hosts.

Gage 39-21: "In May 1938 it was demonstrated that these parasites can be brought alive to Puerto Rico."

Wolcott 39-508 and 509: successful establishment at Rio Piedras and at Isabela, P. R.

[Wolcott, G. N., "The Establishment in Puerto Rico of *Larra americana* Saussure." Jour. Ec. Ent., **34**(1): 53-6, ref. 8. Menasha, Wis., April 23, 1941.]

on flowers of *Hyptis atrorubens* at Paramaribo, Dutch Guiana (10-36); on flowers of *Borreria verticillata* at Caripito, Venezuela (L. F. Martorell—det. G. A. Sandhouse "all males"); on flowers of *Borreria verticillata* at Malezas

Farm, Isabela, seven months after the last release, in January (4-39), abundant in February (22-39), not so abundant in April (46-39), nor in July (49-39), none until November (307-39), in December (369-39), in January, March and April (14-40), sixty females collected at Punta Borinquen U. S. Army Air Base No. 1, nearly one-half mile east (against the wind) of point of original release at Malezas Farm, on bare ground with numerous changa tunnels, May 8, 1940, released one hour later at Isabela Sub-Station (167-40), dispersion one mile east to San Antonio and one-half mile west to cliff overlooking ocean, by end of June (195-40); on flowers of *Hyptis atrorubens*, Laguna San José, near Rio Piedras (5-39) in January, in November (337-39), in December 368-39); on flowers of *Borreria verticillata*, between Vega Baja and Camp Padilla, Laguna Tortuguero, nine months after release, in March (135-40) and in April, May and June.

**Tachytes insularis** Cresson

Dewitz. Gundlach, "rara."

"From a study of the specimens of this genus from Porto Rico, it appears that a single species is involved, and according to the material in the collection, the name should be *insularis* Cr., rather than *argentipes* Sm. However, the types would have to be seen to verify this." G. A. Sandhouse.

(as *T. argentipes* Smith—det. S. A. Rohwer) IB-559: many records.

at Barceloneta (I No. 6779); resting on guava bushes Sabana Grande (86-37); frequenting flowers of *Borreria verticillata* at Aguadilla (27-38); on flowers of *Heliotropium indicum*, Vieques Id. (105-40); at the airport, Mona Id. (141-39, 275-40).

**Prionyx thomae** F.

at the airport, Mona Id. (138-39) and abundant on the plateau (259-40); in cane field at Naguabo (2-40), at Santa Isabel (20-39 det. G. A. Sandhouse); dead adult in salt lagoon at Guanica (85-37), frequenting flowers of everlasting at Fajardo (60-38).

**Tachysphex** sp.—det. G. A. Sandhouse  
(I No. 6780).

**Ammobia ichneumonea** L. var. **auriflua** Perty

in cane field at Arecibo (23-39); in Maricao Insular Forest, elev. 2,600 ft. (265-39), elev. 3,000 ft. (357-39).

**Chlorion (Ammobia) singularis** F. Smith

= *Chlorion (Ammobia) dubitatum* (Cress). "From a study of specimens from various localities, it is evident that these are conspecific, but the synonymy has not been published." G. A. Sandhouse.



(as *Chlorion dubitatum*) Van. Z. (P. R. 93).

(as *Ammobia dubitata*) AMC: at many localities.

(803-14 re-determined G. A. Sandhouse); with *Conocephalus fasciatum* DeG. in her burrow (675-12 re-determined G. A. Sandhouse); at Bayamon (I No. 6035); frequenting flowers of *Borreria verticillata* at Yabucoa (61-39 det. G. A. Sandhouse, 357-39); at Guanica (I No. 1656 Leonard 33-131), at Salinas (I No. 4648); on Mona Id. 274-40); on flowers of *Hyptis atrorubens* (350-39).

## VESPOIDEA

### BETHYLIDAE

**Goniozus playtynotae** Ashmead—det. C. F. W. Muesebeck  
reared from larvae of *Agathodes designalis* Guenée, at Cayey (93-40).

**Perisierola** sp. nov. "near *nigrifemur* Ashmead"—det. C. F. W. Muesebeck  
Anon 38-101: a parasite of the pink bollworm.  
Fife 39-4: a native parasite of the pink bollworm.

page 560

**Gonatopus** sp. nov.—det. C. F. W. Muesebeck  
Bartlett, K. A., "A Dryinid Parasite attacking *Baldulus maidis* in Puerto Rico. Jour. Agr. Univ. P. R., 22(4): 497. San Juan, (March 23, 1939) October 1938.

page 561

### SCOLIIDAE

**Elis haemorrhoidalis** F.  
Jepson 36-5 and 20 to 22: "parasitic on *Phytalus apicalis* Blanchard"; observations on, in P.R.  
females in cane field at Aguadilla (25-38); feeding on excrement from green scale on *Rauwolfia tetraphylla* at Aguadilla (3-38); frequenting flowers of *Bucida buceras*, Vieques Id. (102-40); frequenting flowers of *Borreria verticillata* at Aguadilla (25-38, 253-39, 15-40) at Yabucoa 59-39, 240-39); on flowers of *Colubrina colubrina* and *Pisonia albida*, Mona Id. (216-40).

page 562

**Elis ephippium** F.  
(as *Elis xanthonotus* Rohwer) Jepson 36-5, 18 to 25; 26: "reared on second stage grubs of the larger *Lachmosterna*"; observations on, collections and shipment to Mauritius; summary.  
females frequenting flowers of *Hyptis atrorubens* (4-38, 364-39) confirming observations of E. G. Smyth, but, contrary to his observations, also on flowers of *Borreria verti-*

*cillata* (= *Mitracarpus portoricensis*) at Manati (338-39), at Yabucoa (60-39, 28-40), at Aibonito (191-40).

**Myzine nitida** Smith

(as "sp.") in fruit fly trap at Mayaguez (I No. 6863).

**Tiphia argentipes** Cresson

Jepson 36-5: not found.

**Tiphia** sp.

very small males, apparently differing from *T. hispaniolae* Wolcott, TYPE from Haiti, only in size: at light (67-40), on guava at San Sebastian (69-38), at Coloso (325-39); very small female on the beach at Mayaguez (43-39).

page 563

**Campsomeris atrata** F.

female in cane field, Central Fortuna, Ponce (2-39); dead on the beach, Mona Id. (111-39), and frequenting flowers of *Moringa moringa*, *Pisonia albida* and *Colubrina colubrina*, Mona Id. (205-40) much more abundant than on the island of Puerto Rico.

**Campsomeris dorsata** F.

Jepson 36-5, 19 to 25, 28: "Long known as a common parasite of *Ligyruis tumulosus* Burm. in Puerto Rico"; observations on, collections and shipments to Mauritius; summary.

Jepson, W. F., "A Summary of the Results of the *Phytalus* Investigation 1933-36." pp. 19. Port-Louis, Mauritius, 1936: eighteen females survived the trip from P. R. to Mauritius, 53 days en route, were released in Mauritius, but with no recovery to date.

Wolcott 37-80: quoting Mrs. Dexter: 5.1% of the food of *Bufo marinus* L.

Anon 39-75: visiting sweet potato flowers.

females on flowers of *Borreria verticillata* at Vega Baja (61-40), of *Kallstroemia maxima* at Yauco (36-37), of malva, *Malachra alceifolia*, at Guayanilla (80-40), of aveyu-elo and *Moringa moringa*, Mona Id. (217-40); males, on Mona Id. (139-39), on flowers of *Borreria verticillata* at Yabucoa (58-39).

**Campsomeris trifasciata** F.

Jepson 36-5, 18 to 25, 28: "normally a parasite of *L. portoricensis*," observations on, summary.

(I No. 7137), both sexes abundant on flowers of *Waltheria americana* at Aguadilla (16-40), of *Hyptis atrorubens* (365-39), of *Melanthera confusa* at Manati (136-40), of *Borreria verticillata* at Yabucoa (57-39, 244-39), at Manati (114-39).

**Campsomeris tricineta** F.

Jepson 36-5, 20, 29: mention, collected at Cidra, summary.

page 565

## PSAMMOCHARIDAE

**Pepsis rubra** Drury

(I No. 6907), at Bayamon (I No. 6032); at Pt. Cangrejos (396-22 det. N. Banks) frequenting flowers of *Borreria verticillata*, at Aguadilla (52-38); at Mayaguez (I No. 7381), at Naguabo (231-39).

page 566

**Pepsis ruficornis** F.

at Coloso (25-39) at sea-level; in Maricao Insular Forest, elev. 2,600 ft. (264-39).

**Notiochares cubensis** Cresson (= *Pompiloides propinquus* Fox)  
det. N. Banks

carrying legless spider at Coloso (73-38); frequenting flowers of *Heliotropum indicum*, Viequez Id. (107-40).

**Cryptocheilus flammipennis** Smith

at Bayamon (I No. 6037).

page 567

## VESPIDAE

**Polistes crinitus** Felton

Anon 38-101: attacking *Laphygma frugiperda* caterpillars on corn (W. K. Bailey).

at Guaynabo (I No. 7138 as "var. *americanus* F." det. G. A. Sandhouse); in fruit fly traps at Bayamon (I No. 7073); enormous numbers on El Yunque rock (45-39) with no other wasp present; on Mona Id. (135-39, 247-40); on tender foliage of *Coccolobis laurifolia*, Mona Id. (41-40); frequenting flowers of *Heliotropum indicum*, Vieques Id. (108-40); at Aibonito (188-40).

presumably the record of "*Polistes canadensis* L., Wetmore 16-77; eaten by Kingbird." should come here.

**Polistes major** P. B.

Bequaert, J. C., "Two New Color Forms of *Polistes major* Palisot de Beauvois from California and Arizona." Ent. News, 47(1): 7-13. Philadelphia, 1936: the first record from P. R., collected by F. Sein at Lares; presumably blown in by the hurricane of 1928.

Anon 38-101: attacking caterpillars of *Laphygma frugiperda* on corn (W. K. Bailey).

at Lares (100-31 det. J. C. Bequaert); in fruit fly trap at Vega Alta (I No. 7259); frequenting flowers of *Borreria verticillata* at Palo Seco (361-39, 55-40), at Aguadilla (47-39); resting on sugar-cane at Aguadilla (281-39); nesting on sea-grape and casuarina trees, Mona Id. (137-39 det. G. A. Sandhouse).

page 568

**Mischocyttarus cubensis** Saussure

Anon 38-102: attacking caterpillars of *Laphygma frugiperda* on corn (W. K. Bailey).

on Mona Id. (136-39); attached to citrus leaves by an entomogenous fungus (385-39 F. Mora) at Lares.

## EUMENIDAE

**Zethus rufinodus** Latreille

at Bayamon (I No. 6034); on flowers at Lares (154-40); on flowers of *Hyptis atrorubens* (6-39); on flowers of *Lantana camara*, Mona Id. (140-39); on tender foliage of *Coccolobis laurifolia*, Mona Id. (42-40); nesting in rotten fenceposts of almacigo and other woods, Laguna Tortuguero (494-40).

**Eumenes ornatus** Saussure

(as "var. *abdominalis* Drury") at Loiza (I No. 6906); in fruit fly trap at Palo Seco (I No. 6922 as "var. *ornatus* Saussure").

**Pachodyneurus (Monobiella) atratus** F.

in mud-wasp nest, of *Sceliphron caementarium* Drury ?, on rock cliff near Utuado (30-38); frequenting flowers of *Borreria verticillata* at Yabucoa (317-39), at Cayey and Isabela (18-40), of *Hyptis atrorubens* (349-39).

**Pachodyneurus nasidens** Latreille

frequenting flowers of *Hyptis atrorubens* (60-40), of *Borreria verticillata* at Yabucoa (238-39 det. G. A. Sandhouse).

**Pachodyneurus tibialis** Saussure

frequenting flowers of *Lantana camara*, Mona Id. (144-39 det. G. A. Sandhouse), of *Colubrina colubrina* (273-40).

page 569

**Ancistrocerus dejectus** Cresson

in fruit fly trap at Mayaguez (I No. 6860 as "sp.").

## APOIDEA

## HALICTIDAE

**Agapostemon portoricensis** Cockerell (not a variety of *radiatus*)

at Bayamon (I No. 6041), at Dorado (I No. 6904); in flight, Salinas-Cayey road (228-39 det. G. A. Sandhouse); on flowers of *Lantana camara*, Mona Id. (149-39 det. G. A. Sandhouse).

**Augochlora buscki** Cockerell—det. G. A. Sandhouse

at Bayamon (I No. 6040), at Dorado (I No. 6905).

page 570

## ANTHOPHORIDAE

**Centris haemorrhoidalis** F.

nesting in clay bank at Guajataca (279-39); frequenting flowers of *Borreria verticillata* at Aguadilla (138-40, of *Moringa moringa* and *Pisonia albida*, Mona Id. (210-40).

**Centris lanipes** F.

on Mona Id. (150-39 det. G. A. Sandhouse), on flowers of *Moringa moringa* (208-40).

**Centris versicolor** F.

on the beach at Mayaguez (I No. 7417 as "*C. decolorata* Lep."), on the beach at Humacao (115-39, females 233-39, males 232-39 det. G. A. Sandhouse); frequenting flowers of *Lantana camara*, Mona Id. (117-39 det. G. A. Sandhouse), of *Moringa moringa*, Mona Id. (209-40).

page 571

**Exomalopsis globosa** F.

frequenting flowers of *Hyptis atrorubens* (367-39) and of *Borreria verticillata* (139-40) at Guajataca Dam.

**Anthophora krugii** Cresson

nesting in clay bank of roadside at Guajataca (278-39); in walls of cave, Mona Id. (81-39); frequenting flowers of *Moringa moringa* and *Colubrina colubrina*, Mona Id. (211-40).

## EUCERIDAE

**Mellisodes trifasciata** Cresson

Anon 39-75: visiting sweet potato flowers.

at Palo Seco (I No. 6776); frequenting flowers of anamú, *Petiveria alliacea*, at Guayanilla (24-37).

## MEGACHILIDAE

**Hypochrotaenia (Pasites) pilipes** Cresson

on flowers of pepper at Guaynabo (I No. 6775).

**Coelioxys abdominalis** Guerin

in cane field at Guajataca (27-39).

page 572

**Megachile lanata** F. (= *M. martindalei* Fox)

Anon 39-75: visiting sweet potato flowers.  
at Barceloneta (I No. 6778).

**Megachile vitrasi** Pérez

at Loiza (I No. 6777); frequenting flowers of *Borreria verticillata* at Yabucoa (237-39); resting on cane leaf at Guanica (225-39); on Mona Id. (142-39 det. G. A. Sandhouse) on flowers of *Moringa moringa* and *Pisonia albida* (246-40).

XYLOCOPIDAE

**Xylocopa brasilianorum** L.

frequenting sunflowers at Vega Alta (I No. 7217); abundant on Mona Id. (120-39).

page 573

APIDAE

**Apis mellifera** L.

Wolcott 37-49: Mr. Sein's experiments indicating that neither bees nor other insects are necessary for the setting of the coffee crop.

nest in rocks near Guanica lighthouse (3-37), in hollow mamey tree, Sabana Llana (GNW); adults almost the only large Hymenopteron present on *Hyptis atrorubens* near Mountain Top Nursery, Patillas (11-39); adults on flowers of guamá, Cayey (123-40), of malva, *Malachra alceifolia*, at Guayanilla (83-40).