

## NOTES ON SOME GUAM CHALCIDOIDEA

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The material reported on in this paper includes specimens collected by me in Guam in 1936 and by D. T. Fullaway in 1911 (Haw. Ent. Soc., Proc. 2:285-288, 1913). Most of it was sent to A. B. Gahan at the United States National Museum for study, but, as Mr. Gahan lacked the time to prepare a report on the collections, representatives of 10 new species were turned over to Mr. Fullaway for description (p. 201) and I added Gahan's identifications to this paper. Many species in the list remain undetermined because of paucity of material.

I wish to thank Mr. Gahan for his aid and cooperation in identifying the specimens.

## FAMILY AGAONIDAE

1. *Blastophaga innumerabilis* Fullaway, Haw. Ent. Soc., Proc. 2: 286, 1913.

The species was reared abundantly by Fullaway from the fruit of native *Ficus* trees in 1911, and by Swezey in 1936 from fruit of a narrow-leaved *Ficus* at Yigo, Oct. 21 and Nov 8.

2. *Blastophaga* species ?

Another species of *Blastophaga* was reared from a different species of *Ficus*. The specimens were referred to Dr. Grandi in Italy for determination, and have not yet been reported on.

## FAMILY TORYMIDAE

3. *Odontofroggattia* species.

Barrigada, June 14, ex fruits of small-leaved *Ficus*, Swezey. One slide mount, retained at National Museum.

## 4. New genus.

Near Mt. Chachao, Sept. 22, 10 specimens ex fruits of a large-leaved *Ficus*, Swezey.

## 5. Genus?

Thirty-nine specimens, ex fruits of small-leaved *Ficus*: Barrigada, June 14; near Mt. Chachao, June 16; Yigo, Oct. 21 and Nov. 8, Swezey.

## 6. Genus?

Yigo, Oct. 21, a single specimen ex fruit of small-leaved *Ficus*, Swezey.

## FAMILY CHALCIDIDAE

7. *Brachymeria hammari* (Crawford).

*Chalcis hammari* Crawford, Ins. Inscit. Mens. 3: 89, 1915.

*Chalcis* sp., Fullaway, Haw. Ent. Soc., Proc. 2: 285, 1913.

Dededo, May 11, ex pupa on leaf of *Guettarda speciosa*, Swezey; Tarague, May 17, Swezey; Mt. Alifan, May 21, Usinger; Agat, May 31, ex cocoon of coconut moth, *Agonoxena pyrogramma* Meyrick, Swezey; Ypan, June 8, ex pupa of European corn borer, *Pyrausta nubilalis* (Hübner) Swezey; Piti, June 29, ex pupa of *Timandra aventiaria* Guenée on *Pithecolobium*, Swezey; Piti, Sept. 12, swept from *Pithecolobium*, Swezey; Agat, Sept. 20, ex pupa of rice leafroller, *Susumia exigua* (Butler), Swezey. Nine specimens, five of which are retained in U. S. National Museum. Mostly reared specimens. Eleven specimens in Bishop Museum collected by Fullaway in 1911 and recorded as *Chalcis* sp.

This is a parasite on lepidopterous pupae.

## FAMILY EURYTOMIDAE

8. *Eurytoma* species.

Upi Trail, May 5, one specimen swept from ferns, Swezey.

## FAMILY EUCHARIDAE

9. *Chalcura upeensis* Fullaway, Haw. Ent. Soc., Proc. 2: 285, 1913.

An ant parasite, described by Fullaway from a single male specimen. Two specimens, Upi Trail, May 5, in the same district where it was collected by Fullaway in 1911. Two specimens, one retained in U. S. National Museum.

10. *Schizaspidia*, new species.

A single specimen, Barrigada, June 12. Retained in U. S. National Museum.

## FAMILY PTEROMALIDAE

11. *Merisus* (?) species.

Piti, May 1, a single male ex dipterous leafminer in *Morinda*, Swezey.

12. *Isoplata* species Fullaway, Haw. Ent. Soc., Proc. 2: 286, 1913.

Three specimens in Bishop Museum, collected by Fullaway in 1911.

## FAMILY MISCOGASTERIDAE

13. *Tomocera californica* Howard, U. S. Dept. Agric., Div. Ent., Ann. Rept. (1880), 368, 1881.

Umatac, May 14; Orote, May 24; Santa Rosa Peak, May 19; Sumay, June 6 and 21, ex hemispherical scale; Mt. Alifan, June 19; Sinajana,, June 15; Piti,

Oct. 27 and 29, Nov. 15, nearly all by sweeping, Swezey and Usinger. Fourteen specimens, five retained in U. S. National Museum. There are four specimens in Bishop Museum, collected by Fullaway in 1911. A scale parasite.

#### FAMILY SPALANGIIDAE

14. *Spalangia philippinensis* Fullaway, Haw. Ent. Soc., Proc. 3: 292, fig. 1, 1917.

Piti, May 23, swept from bean vines, Swezey; Machanao, Aug. 6, swept from *Piper guahamense*, Swezey; Piti, Sept. 21, ex puparium of *Ophyra chalcogaster* Wiedemann in cow dung, Swezey; Piti, Nov. 15, swept from bamboo, Swezey.

This dipterous parasite was introduced into Hawaii from the Philippines in 1914. It was introduced from Hawaii to Guam in 1928. By 1930 it became so well established that house fly and stable fly puparia collected about the Experiment Station grounds showed a parasitism of 75 to 80 percent. Four specimens, one retained in U. S. National Museum.

15. *Spalangia cameroni* Perkins, Fauna Hawaiiensis 2(6): 656, 1910.

Recorded by Fullaway from his 1911 collecting.

16. *Chaetospora elegans* Westwood, Thesaur. Entom. Oxon., 137, pl. 25, fig. 10, 1874.

*Spalangia metallica* Fullaway, Haw. Ent. Soc., Proc. 2: 286, 1913.

Described by Fullaway from a single specimen collected in 1911. Later it was found to be synonymous with *C. elegans*. We did not collect it in 1936.

#### FAMILY CLEONYMIDAE

17. *Ptinobius* species.

Piti, Oct. 9, a single specimen ex larva of *Agrilus occipitalis* (Eschscholtz) in orange branch, Swezey. One specimen, retained in U. S. National Museum.

#### FAMILY EUPELMIDAE

18. *Anastatus picticornis* (Cameron).

*Solindenia picticornis* Cameron, Ent. Soc. London, Trans., 189, 1898.

Piti, May 1, in house, Usinger; Piti, July 5, 9, and 19, in house and on mango leaves, Swezey; Piti, Sept. 24, Swezey. Eight specimens, four retained in U. S. National Museum.

A parasite of roach egg capsules. Described from the Hawaiian Islands.

19. *Anastatus* species.

A single male, Dededo, May 11, Usinger.

**20. Eupelminus** (?) species.

Ritidian Point, April 16, Bryan; Upi Trail, May 5, Bryan; Barrigada, June 12, Swezey; Yona, Nov. 18, swept from coconut leaves, Swezey. Five specimens, three retained in U. S. National Museum.

**21. Eupelminus** species.

Santa Rosa Peak, May 19, on *Pandanus*, Swezey; Piti, Aug. 13, swept from *Glochidion*, Swezey. Two specimens, one retained in U. S. National Museum.

**22. Eupelmus** species.

A single specimen, Machanao, June 5, Usinger; Tumon, Nov. 13, swept from mango, Swezey. Two specimens, one retained in U. S. National Museum.

**23. Eupelmus** species.

Six specimens in Bishop Museum, collected by Fullaway in 1911.

**24. Eusandalum** species.

A single specimen from *Passiflora foetida* vine, Barrigada, June 14, Usinger.

## FAMILY ENCYRTIDAE

**25. Encyrtus barbatus** Timberlake, Haw. Ent. Soc., Proc. 4: 209, 1919.

Ritidian Point, June 2, Usinger; Barrigada, July 6, swept from *Intsia bijuga*, Swezey. Two specimens.

**26. Blepyrus insularis** (Cameron).

*Encyrtus insularis* Cameron, Manchester Lit. and Philos. Soc., Mem. 10 (3): 483, 1886.

*Blepyrus insularis* (Cameron), Timberlake, Haw. Ent. Soc., Proc. 5: 429, 1924.

Piti, May 2, on *Cestrum pallidum*, Usinger; Agana, May 25, Usinger; Paa-san, June 15, Usinger; Sumay Road, July 15, Swezey. This is a parasite of the mealybug *Ferrisia virgata* (Cockerell). Eight specimens, two retained in U. S. National Museum. About a dozen specimens at Bishop Museum were collected by Fullaway in 1911.

**27. Pseudococcobius terryi** (Fullaway).

*Aphycus terryi* Fullaway, Haw. Ent. Soc., Proc. 2: 281, 1913.

*Pseudococcobius terryi* (Fullaway), Timberlake, Haw. Ent. Soc., Proc. 5: 431, 1924.

Piti, July 27, reared from the mealybug *Pseudococcus boninsis* (Kuwana) on sugar cane, Swezey. Two slide mounts, one retained in U. S. National Museum; two specimens on a point.

28. **Adelencyrtus chionaspidis** (Howard).  
*Encyrtus chionaspidis* Howard, U. S. Nat. Mus., Proc. 18: 637, 1896.  
 Piti, May 23, two specimens swept from grass, Swezey.
29. **Echthrogonatopus exitiosus** Perkins, Haw. Sugar Plant. Assoc. Expt. Sta., Ent. Bull. 1(8): 256, 1906.  
 Agana, May 4, one swept from mango leaves, near a taro patch, Swezey; Inarajan, May 7, reared from dryinid cocoon from a delphacid leafhopper on *Sporobolus* grass, Usinger; Piti, May 12, reared from dryinid cocoon on taro leaf, Swezey; Piti, May 23, swept from lawn grass, Swezey; Merizo, Oct. 2, four reared from dryinid cocoon on taro, Swezey; Libugon Farm, Nov. 10, eight reared from dryinid cocoons on taro leaves, Swezey. Two slide mounts, one retained at U. S. National Museum; 13 specimens on points, four retained at U. S. National Museum. A parasite of Dryinidae. The host of the dryinid whose cocoons were on taro leaves was the taro leafhopper *Megamelus proserpina* Kirkaldy.
30. **Ooencyrtus pacificus** Waterston, Bull. Ent. Research 6: 307, fig. 1, 1915.  
 Ritidian Point, June 30, ex eggs of the bug *Brachyplatys pacificus* Dallas, Swezey; Barrigada, June 12, Usinger. Two slide mounts; one retained at U. S. National Museum.  
 Described from Fiji on same host. Determined by D. T. Fullaway.
31. **Encyrtid**, genus and species?  
 Piti, Nov. 5, one specimen swept from lawn grass, Swezey.
32. **Pentelicus** species.  
 Listed by Fullaway in 1913.

## FAMILY ELASMIDAE

33. **Elasmus philippinensis** Ashmead, U. S. Nat. Mus., Proc. 28: 138, 1904.  
 Recorded by Fullaway in his 1911 collection in Guam. A specimen collected at Piti, July 24, is possibly merely a variety of *philippinensis*.
34. **Elasmus** species.  
 Dededo, May 19, ex lepidopterous leafminer in *Terminalia catappa*, Swezey; two specimens.

## FAMILY APHELINIDAE

35. **Aphytis chrysomphali** (Mercet).  
*Aphelinus chrysomphali* Mercet, Real. Soc. Espan. Hist. Nat., Bol. 12: 135, 1912.  
*Aphytis chrysomphali* (Mercet), Timberlake, Haw. Ent. Soc., Proc. 6: 315, 1926.

Merizo, June 11, ex *Aspidiotus destructor* Signoret on banana leaf, Swezey. Two slide mounts, one retained in U. S. National Museum.

36. **Proaphelinoides elongatiformis** Girault, Descr. Stell. Nov., 4, 1917.

Piti, Oct. 27, swept from bamboo leaves infested with *Asterolecanium miliaris longum* (Green), Swezey. One slide mount, retained in U. S. National Museum.

37. **Aneristus ceroplastae** Howard, Canad. Ent. 27: 351, 1895.

Piti, Aug. 18, one specimen swept from *Glochidion*, Swezey.

38. **Aphelinus?** new species.

Inarajan, May 14, ex *Aphis gossypii* Glover on taro, Swezey; Piti, May 28, ex *Aphis gossypii* Glover, Usinger. One slide mount, retained in U. S. National Museum.

Apparently near *flavipes* Kurdjumov (Rev. Russe d'Ent. 13: 270, 1913).

39. **Coccophagus orientalis** Howard, U. S. Nat. Mus., Proc. 18: 633, 1896.

Listed by Fullaway in 1913.

#### FAMILY EULOPHIDAE

40. **Cirrospiloideus guamensis** Fullaway, Haw. Ent. Soc., Proc. 2: 287, 1913.

Inarajan, May 7, ex bean leafminer, Swezey; Orote Peninsula, May 24, ex leafminer in undetermined plant, Swezey; Umatac, May 28, ex leafminer in large-leaved *Ficus*, Swezey; Orote Peninsula, July 19, ex leafminer in *Caesalpinia bonducella*, Swezey; Inarajan, July 25, ex leafminer in undetermined vine; Machanao, June 30, ex leafminer in *Glochidion marianum*, Swezey. Thirteen specimens, five retained in U. S. National Museum. Reared by Fullaway in 1911 from lepidopterous leafminers in *Terminalia catappa* and *Heritiera littoralis*. We reared it from several leafminers.

41. **Cirrospiloideus japonica** (Ashmead).

*Sympiesomorpha japonica* Ashmead, New York Ent. Soc., Jour. 12: 163, 1904.

Inarajan, May 7, ex bean leafminer, Swezey; Piti, May 23, ex bean leafminer, Swezey. Three specimens, two retained in U. S. National Museum.

42. **Hemiptarsenus semialbiclavus** (Girault).

*Hemiptarsenoideus semialbiclava* Girault, Queensland Mus., Mem. 5: 220, 1917.

Orote Peninsula, May 24, ex corn leafminer, Swezey; Piti, Aug. 9, 17, ex leafminer, *Agromyza spicata* in corn, Swezey; Asan, Aug. 22, ex leafminer in *hamlat*, Swezey; Piti, Nov. 7, ex bean leafminer, Swezey. Thirty-nine specimens, 18 retained in U. S. National Museum.

43. *Asympiesiella india* Girault, Canad. Ent. 48: 341, 1916.  
Barrigada, July 22, ex leafminer in *Intsia bijuga*, Swezey; Dededo, Aug. 11, ex leafroller on undetermined tree, Swezey. Two specimens, one retained in U. S. National Museum.
44. *Euplectrus* (?) *xanthocephalus* Girault, Queensland Mus., Mem. 2: 273, 1913.  
Upi Trail, May 5, swept from ferns, Swezey; Machanao, June 4, reared from a caterpillar (*Prodenia*?) on spiny amaranth, Swezey. Six specimens, three retained in U. S. National Museum.
45. *Euplectrus* sp. near *leucostomus* Rohwer, Ann. Mag. Nat. Hist., IX, 7: 134, 1921.  
Machanao, June 30, reared from an unidentified caterpillar on *Eugenia*, Swezey. Three specimens, one retained in U. S. National Museum.
46. *Tetrastichus hagenowii* (Ratzeburg).  
*Entedon hagenowii* Ratzeburg, Ichneumon. der Forstins. 3: 211, 1852.  
Merizo, Oct. 2, one specimen, Swezey. Bishop Museum has 13 specimens, collected by Fullaway in 1911.
47. *Melittobia hawaiiensis* Perkins, Haw. Ent. Soc., Proc. 1: 124, 1907.  
Piti, May 20, Swezey; Piti, Sept. 27, reared from pupae found Sept. 24 in a cocoon of *Pison argentatum*. On another occasion there were six cocoons of *Pison argentatum* in cells of a mud nest, and each cocoon had exit holes where *Melittobia* had issued, which shows the prevalence of this wasp parasite. Three slide mounts, two retained in U. S. National Museum; one specimen mounted on a point.
48. *Melittobiopsis ereunetiphila* Timberlake, Haw. Ent. Soc., Proc. 6(2): 319, 1926.  
Piti, May 2, Swezey; Agana, May 4, swept from mango, Swezey. Two specimens, one retained in U. S. National Museum.
49. ?*Sympiesis* species.  
Piti, Nov. 7, ex bean leafminer, Swezey. Two specimens, one retained in U. S. National Museum.
50. *Euderus* species.  
Upi Trail, May 5, swept from ferns, Swezey; Sumay Road, July 15, Swezey. Two specimens, one retained in U. S. National Museum.
51. *Elachertus* species.  
Piti, May 9, one specimen at light, Swezey.

52. *Elachertus* species.

Barrigada, June 12, a single specimen ex fruit of small-leaved *Ficus*, Swezey.

53. *Ootetrastichus* species.

Piti, May 23, one specimen swept from bean vines, Swezey.

54. *Elachertini*,? genus near *Entedonomorpha* Girault.

Ritidian Point, April 15, swept from ferns, Bryan. Two specimens, one retained in U. S. National Museum.

55. *Closterocerus* species.

Listed by Fullaway in 1913.

## FAMILY TRICHOGRAMMATIDAE

56. *Trichogramma minutum* Riley, Missouri Third Ann. Rept., 158, 1871.

Barrigada, June 14, ex eggs of *Cosmolyce boeticus* on *Crotalaria*, Swezey; Piti, Sept. 15, ex eggs of *Herse convolvuli* (Linnaeus), Swezey; Piti, Oct. 10, ex tortricid eggs, Swezey; Piti, Oct. 10, ex egg of *Catopsilia crocale* (Cramer) on *Cassia grandis*, Swezey. Five slide mounts, two retained in U. S. National Museum.

57. *Trichogramma nanum* (Zehntner).

*Chaetosticha nana* Zehntner, Arch. voor de Java-Suikerindustrie 4: 400, pl. 5, figs. 9-11, 1896. (The figure is labeled *Trichogramma nana*.)

Barrigada, June 14, ex eggs of *Cosmolyce boeticus* on *Crotalaria*, Swezey; Piti, Oct. 10, 11, 28, ex eggs of *Catopsilia crocale* (Cramer) on leaves of *Cassia grandis*, Swezey. Two slide mounts, one retained in U. S. National Museum.

58. *Trichogramma* species.

Piti, Nov. 5, one specimen swept from lawn grass, Swezey.

59. *Oligosita* species, apparently close to *O. cratitia* Waterston.

*Chaetosticha cratitia* Waterston, Bull. Ent. Research 13: 184, 1922.

Agana Swamp, May 15, ex eggs of *Stenocranus agamopsyche* Kirkaldy in marsh reed (*Trichoon roxburghii*), Swezey. One slide mount, retained in U. S. National Museum.

60. *Oligosita* species.

Upi Trail, May 5, ex orthopterous egg in dead bark of *Hibiscus tiliaceus* Swezey. One slide mount, retained in U. S. National Museum.



FAMILY MYMARIDAE

61. **Mymar tyndalli** Girault, Queensland Mus., Mem. 1: 168, 1912.  
Piti, Nov. 5, one specimen swept from lawn grass, Swezey.
62. **Alaptus caecili** Girault, Ent. Soc. Am., Ann. 1: 189, 1908.  
Sumay Road, Oct. 17, ex eggs of *Caecilius analis* on sugar cane, Swezey.
63. **Paranagrus optabilis** Perkins, Haw. Sugar Plant. Assoc. Expt. Sta.,  
Ent. Bull. 1(6): 199, 1905.  
Piti, April 30, ex eggs of *Perkinsiella thompsoni* Muir in sugar cane leaves,  
Swezey. Three slide mounts, one retained in U. S. National Museum.
64. **Anagrus flaveolus** Waterhouse, Bull. Ent. Research 4: 87, 1913.  
Dededo, Nov. 13, ex eggs of *Peregrinus maidis* (Ashmead) in corn leaves,  
Swezey. One slide mount, retained in U. S. National Museum.