

SOME MISCELLANEOUS DIPTERA OF GUAM

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This list of miscellaneous Diptera includes records of the collections made in Guam by R. L. Usinger and O. H. Swezey in 1936, and by D. T. Fullaway in 1911. Most of these species are readily determinable, because they are also found in Hawaii. Species which do not occur in Hawaii are marked with asterisks.

Work on the Guam Diptera in the hands of J. R. Malloch was not finished in time for this publication.

FAMILY OMPHRALIDAE

1. *Omphrale nigra* (de Geer).

Nemotelus niger de Geer, Mem. Hist. Ins. 6: 188, pl. 11, figs. 5, 6, 1776.

Scenopinus nigra, Meigen, Syst. Beschreib. 4: 116, 1824.

Omphrale nigra, Kertész, Cat. Diptera 5: 174, 1909.

One specimen collected on surface of water in water barrel, Piti, Aug. 20, Swezey; three specimens in Bishop Museum, Fullaway, 1911.

FAMILY SYRPHIDAE

2. *Lathyrrophthalmus arvorum* (Fabricius).

Syrphus arvorum Fabricius, Mant. Ins., 335, 1787.

Eristalis punctulatus Grimshaw, Fauna Hawaiiensis 3: 82, 1902.

Eristalis arvorum, Brunetti, Fauna Brit. India, Diptera 3: 181, pl. 4, figs. 6, 7, 1923.

Lathyrrophthalmus arvorum, Bryan, Haw. Ent. Soc., Proc. 8: 413, 1934.

One specimen at light, Piti, Oct. 2, Swezey. Four specimens in Bishop Museum, Fullaway.

3. *Ischiodon scutellaris* (Fabricius).

Scaeva scutellaris Fabricius, Systema Antliat., 252, 1805.

Xanthogramma grandicornis (Macquart), Grimshaw, Fauna Hawaiiensis 3: 19, 1901.

Ischiodon scutellaris, Bezzi, Diptera of the Fiji Islands, 72, 1928.

Mt. Alifan, June 27, Swezey; Piti, Aug. 24, Sept. 15, Swezey; common, the larvae feeding on *Aphis maidis* on corn. Three specimens in Bishop Museum, Fullaway.

FAMILY TACHINIDAE

4. **Lydella stabulans* var. *griseescens* (Robineau-Desvoidy).

Ceromasia lepida Meigen, Nakayama, Chosen Govt. Agr. Expt. Sta., Ann. 4: 95, 1929.

Ceromasia lepida, Vandenberg, Guam Agr. Expt. Sta., Rept., 1931-32, 21, 1933.

Lydella griseescens Robineau-Desvoidy, Clark, U. S. Dept. Agric. Tech. Bull. 455: 19, 1934.

Lydella stabulans var. *griseescens* (Robineau-Desvoidy), Baker in letter.

This tachinid fly was introduced from Japan into Guam in 1931 by S. R. Vandenberg, as a parasite on the European corn borer, *Pyrausta nubilalis*. It was first known as *Ceromasia lepida* Meigen, but later the name *Lydella stabulans* variety *griseescens* (Robineau-Desvoidy) came into use in the United States, where the fly had been introduced and become established in the region around the west end of Lake Erie. In 1936, we found that this tachinid was satisfactorily controlling the European corn borer in Guam. Usually only a small proportion of the corn stalks was injured, and the injury was not sufficient to prevent a well-formed ear. Usually about 50 percent of the caterpillars found were parasitized, sometimes 80 percent or more. There were one to three tachinid maggots per caterpillar, but more often only one maggot per host was found. This fly was found in all regions where the corn borer was found.

FAMILY SARCOPHAGIDAE

5. *Sarcophaga dux* Thomson, Freg. Eugenies Resa, Diptera, 534, 1868; Grimshaw, Fauna Hawaiiensis 3: 27, 1901; Bezzi, Diptera of Fiji Islands, 190, 1928.

Sarcophaga subtuberosa Parker, U. S. Nat. Mus., Proc. 54: 89, 1917.

Originally described from Honolulu; known also in Fiji and Samoa. Described as *S. subtuberosa* by Parker from specimens in the U. S. National Museum, collected in Guam by Fullaway in 1911. Bezzi considers *subtuberosa* as a synonym of *dux*.

Five specimens in Bishop Museum, collected by Fullaway, were determined by C. S. Banks as *S. frontalis* Thomson which may be a synonym of *dux*. It is described on the page following that on which *dux* is described. Undoubtedly the Fullaway specimens in Bishop Museum are the same species as those at the National Museum.

FAMILY CALLIPHORIDAE

6. *Chrysomyia megacephala* (Fabricius).

Musca megacephala Fabricius, Ent. Syst. 4: 317, 1792.

Chrysomyia megacephala, Patton, Bull. Ent. Research 13: 110, 1922; Bezzi, Diptera of Fiji Islands, 187, 1928.

Talofoto, April 11, Bryan; Tarague, April 19, Bryan; Merizo, April 24, Bryan; Orote Peninsula, May 4, Bryan; Merizo, June 11, Usinger; Piti, Aug. 18, Swezey; Libugon, Nov. 10, attracted to dead slugs, Swezey.

This fly is distributed from India to China, Philippines, Java, Borneo, New Hebrides, Australia, Fiji and Hawaii. Collected in Guam by Fullaway.

7. *Chrysomyia rufifacies* (Macquart).

Lucilia rufifacies Macquart, Diptera Exotiques, Suppl. 2(3): 303, 1843.

Chrysomyia rufifacies, Bezzi, Diptera of Fiji Islands, 187, 1928.

This Australian species is also known in New Zealand, Fiji, and Hawaii. We found it in Guam: Piti, July 26, at light, Swezey; Libugon, Nov. 10, attracted to dead slugs, Swezey.

FAMILY MUSCIDAE

8. *Stomoxys calcitrans* (Linnaeus).

Conops calcitrans Linnaeus, Syst. Nat. 2: 1004, 1761.

Stomoxys calcitrans, Macquart, Diptera Exotiques, Suppl. 2(3): 271, 1843.

Yona, April 27, Bryan; Piti, July 2, on bullock, Swezey; Orote Point, July 19, Swezey; Piti, July 24, ex carabao dung, Swezey; in Bishop Museum, five specimens, Fullaway, 1911. A cosmopolitan species.

9. *Musca domestica* Linnaeus, Syst. Nat. 10th ed., 596, 1758.

This cosmopolitan fly was extremely abundant everywhere in Guam. The maggots fed abundantly in cow dung and carabao dung, the latter of which was plentiful for the purpose. Many specimens were collected. Five specimens in Bishop Museum, Fullaway.

FAMILY ANTHOMYIIDAE

10. *Ophyra chalcogaster* (Wiedemann).

Anthomyia chalcogaster Wiedemann, Auss. Zweifl. 2: 427, 1830.

Ophyra chalcogaster, Malloch, Ins. Samoa 6(3): 170, 1929.

Ritidian Point, April 15, Bryan; Umatac, May 26, Swezey; Piti, June 3, July 24, Aug. 11, Sept. 21, Nov. 29, Swezey; Barrigada, June 14, Swezey; Sasa, June 26, Usinger; one specimen in Bishop Museum, Fullaway.

Described from Java. Occurs also in China, Samoa, Society Islands, and Hawaii. Abundant in Guam, breeding in carabao dung and cow dung.

11. *Atherigona excisa* var. *trilineata* (Stein).

Atherigona excisa Thomson, Freg. Eugenies Resa, Diptera, 560, 1868.

Atherigona trilineata Stein, Termes. Füzetek 23: 157, 1900.

Atherigona excisa var. *trilineata*, Malloch, B. P. Bishop Mus., Bull. 98: 201, 1932.

Piti, May 22, ex rotten breadfruit, Swezey; Barrigada, July 22, ex rotten breadfruit, Swezey; Barrigada, Aug. 28, puparium found in tunnel of European corn borer, Swezey; Piti, Oct. 6, ex rotten bean pods, Swezey; three specimens in Bishop Museum, Fullaway.

This small anthomyid, under several synonyms, is widely distributed in the Pacific area.

12. **Pygophora lobata* (Stein).

Coenosia (*Pygophora*) *lobata* Stein, Termes. Füzetek 23: 147, 1900.

One specimen in Bishop Museum, Fullaway. Determined by Malloch as *Pygophora lobata* (Stein).

FAMILY LAUXANIIDAE

13. **Trigonometopus setosus* Knab, Ins. Inscit. Mens. 2: 132, 1914.

Described from three specimens in U. S. National Museum, Fullaway

FAMILY MILICHIIDAE

14. **Milichia orientalis* Malloch, Ins. Inscit. Mens. 1: 109, 1913.

Described from seven specimens in U. S. National Museum, Fullaway.

15. *Milichiella lacteipennis* (Loew).

Lobioptera lacteipennis Loew, Berlin. Ent. Zeitschr. 9: 185, 1865.

Ophthalmomyia lacteipennis, Williston, Ent. Soc. London, Trans., 427, 1896.

Milichiella lacteipennis, Bryan, Haw. Ent. Soc., Proc. 5: 292, 1923 (teste Knab); Bezzi, Diptera of Fiji Islands, 162, 1928.

Described from Cuba. Widely distributed in America and the Old World, and occurs in Australia, Fiji, Samoa, and Hawaii. Three specimens in Bishop Museum, Fullaway.

FAMILY MICROPEZIDAE

16. **Calobata galbula* (Osten-Sacken).

Calobata (*Taeniptera*) *galbula* Osten-Sacken, Berlin. Ent. Zeitschr. 26: 202, 1882.

Calobata galbula, Bryan, Haw. Ent. Soc., Proc. 8: 33, 1932.

Agana, June 2, Aug. 5, in Governor's office, Swezey; Piti, Oct. 16, ex rotten sugar cane, Swezey; Piti, Nov. 7, Swezey; three specimens in Bishop Museum, Fullaway. Described from the Philippines.

FAMILY OTITIDAE

17. *Notogramma stigma* (Fabricius).

Musca stigma Fabricius, Ent. Syst., Suppl., 563, 1798.

Notogramma stigma, Loew, Smithsonian Misc. Coll. 11, art. 3: 148, 1873.

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

An American species which occurs in Hawaii; now recorded from Guam for the first time.

18. **Scholastes aitapensis* Malloch, Linn. Soc. N. S. Wales, Proc. 64: 128, pl. 5, fig. 24, 1939; B. P. Bishop Mus., Bull. 172: 207, 1942.

Two specimens in Bishop Museum, labeled *S. bimaculatus* Hendel, Fullaway.

19. **Scholastes hirtiventris* Malloch, B. P. Bishop Mus., Bull. 172: 208, 1942.

Three specimens in Bishop Museum, Fullaway. Determined by C. S. Banks as *S. sexvittatus* Walker.

FAMILY TRYPETIDAE

20. *Dacus cucurbitae* Coquillett, Ent. News 10: 129, 1899.

This is the notorious melon fly which was described on material from Hawaii, where it appeared as an immigrant cucumber and melon pest prior to 1899. It has also been recorded in India, Ceylon, Java, Timor, Philippines, Singapore, southern China, Japan and Australia.

It was first discovered in Guam on November 7, 1936, when we found infested cucumbers in a school garden at Piti. From these cucumbers, 161 flies issued on November 16 to 18. Apparently it was of somewhat recent introduction in Guam and had not yet become widely spread, for the principal cucumber growers had not reported any injury by it. Search for the pest was made in November in various districts of Guam. In a garden on the plateau above Agana, one malformed cucumber was found which showed injury by the maggots, and two small pumpkins were infested with maggots. On November 21, at the Agana vegetable market, an infested cucumber was found which had come from a Talofofu garden. No evidence was found of the pest in other localities at that time.

FAMILY EPHYDRIDAE

21. *Discomyza maculipennis* (Wiedemann).

Notiphila maculipennis Wiedemann, Anal. Entom., 57, 1824.

Discomyza maculipennis, Bezzi, Diptera of Fiji Islands, 154, 1928.

A cosmopolitan species, occurring in Hawaii, and now recorded in Guam for the first time. Piti, May 1, Usinger, Sept. 13, Swezey; three specimens in Bishop Museum, Fullaway.

FAMILY AGROMYZIDAE

22. **Phytomyza spicata* Malloch, Hist.-Nat. Mus. Nat. Hung., Ann. 12: 1914.

Dededo, May 11, especially abundant; Yigo, May 19 and Nov. 13; Mt. Alifan, May 26; Barrigada, June 24; Piti, July 31 and Aug. 9.

Described from Formosa and occurs in Fiji and Samoa. Not previously recorded in Guam, where we found it very abundant. The larvae are leafminers in young corn plants, producing narrow, longitudinal, parallel mines and often as many as 100 per leaf. Very injurious to the early growth of corn plants. Apparently well controlled later by the eulophid parasite, *Hemiptar-senoideus semialbiclava* Girault, which reared out abundantly. Leafminer work was observed nearly everywhere on young corn.