

DIPTERA

TIPULIDAE OF GUAM

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I am greatly indebted to O. H. Swezey for the opportunity of examining the Tipulidae collected in Guam by him and his colleagues. The types and uniques in this series have been returned to Mr. Swezey and will be deposited in the collection of the Hawaiian Sugar Planters' Association, Honolulu. Almost at the same time that the present collection was studied, a much larger one taken by Teiso Esaki of the Kiushiu Imperial University, Fukuoka, Japan, was examined and has been reported upon in a separate paper. It is of interest to note that of the nine species from Guam reported in the present article, five had not been taken on any of the islands in the Japanese mandated group visited by Professor Esaki and colleagues (Palau, Marianas, Caroline, and Marshall Islands). The only previous paper recording species of Tipulidae from Guam is one by me (Canad. Ent. 47: 79-84, 1915). A single species from the Caroline Islands is included.

TRIBE LIMONIINI

1. *Limonia* (*Libnotes*) *jocularis* Alexander, Annot. Zool. Jap. 19: 205-207, 1940.

Fadian, Sept. 18, Swezey, 4 badly molded specimens; "ex rotten bark of dug-dug", Swezey.

2. *Limonia* (*Libnotes*) *nesopicta* Alexander.

Libnotes picta Alexander, Canad. Ent. 47: 80-82, fig., 1915 (name preoccupied in *Limonia*).

Limonia (*Libnotes*) *nesopicta* Alexander, Annot. Zool. Jap. 19: 204, 1940.

Piti, Nov. 3, at light, Swezey, one specimen.

The abdomen shows three intermediate tergites with broad and conspicuous black bands.

3. *Limonia* (*Libnotes*) *strigivena* (Walker).

Limnobia strigivena Walker, Linn. Soc. London, Jour. 5: 229, 1861.

Fadian, Sept. 22, Swezey; "ex rotten bark of dug-dug", Swezey.

4. *Limonia* (*Limonia*) *swezeyana*, new species.

Belongs to the *albitarsis* group; general coloration of mesonotum medium brown; pleura paler; legs brown, the tarsi snowy white, involving about the distal fourth or fifth

of the basitarsus; wings with a strong brownish tinge; Sc_1 ending about opposite two-fifths the length of R_s ; male hypopygium with two rostral spines. Male, length about 5 mm., wing 5.5 mm.; female, length about 5 mm., wing, 5 mm.

Rostrum and palpi black. Antennae black throughout. Head dark.

Mesonotum almost uniformly medium brown; pleura paler. Halteres dark brown. Legs brown, the tarsi snowy white, this including about the distal fourth or fifth of the basitarsus, as well as the outer tarsal segments. Wings with a strong brownish tinge; stigma not or scarcely darker; veins dark brown. Venation: Sc_1 ending about opposite two-fifths the length of R_s , Sc_2 a short distance from its tip; free tip of Sc_2 lying a short distance beyond the level of R_2 ; $m-cu$ close to fork of M .

Abdominal tergites dark brown, the caudal borders of the segments a trifle paler. Male hypopygium with the tergite transverse, the setae apical. Basistyle relatively long, the lobes much as in *albitarsis*. Dorsal dististyle a nearly straight, stout rod. Ventral dististyle small, the prolongation conspicuous, bearing two long conspicuous spines from a common tubercle; outer spine about four-fifths as long as the inner and a little more slender. Gonapophyses with mesal-apical lobe long, straight and very slender.

Fadian, Sept. 18, Swezey, holotype female; "ex rotten bark of dug-dug", Swezey, allotype male, in poor condition.

I take great pleasure in naming this species in honor of the collector, O. H. Swezey. It is allied to *Limonia* (*Limonia*) *albitarsis* (Alexander) and *Limonia* (*L.*) *subalbitarsis* Alexander, of the East Indies, differing in the small size and in the possession of two rostral spines on the ventral dististyle of the male hypopygium.

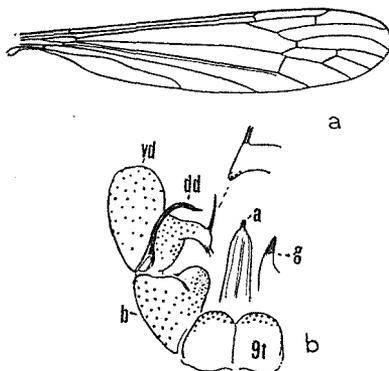


FIGURE 1.—*Limonia* (*Dicranomyia*) *guamicola*, new species: a, venation; b, male hypopygium, symbols: a, aedeagus; b, basistyle; dd, dorsal dististyle; g, gonapophysis; gt, 9th tergite; vd, ventral dististyle.

5. *Limonia* (*Dicranomyia*) *guamicola*, new species (fig. 1, a, b).

Belongs to the *punctulata* group; size large; general coloration of thorax reddish brown, variegated with darker, including a narrow brownish black pleural stripe; male hypopygium with a single rostral spine that is placed far out at tip of prolongation; mesal-apical lobe of gonapophysis slender, nearly straight, blackened. Male, length about 8 mm., wing, 9 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments oval to long-oval; terminal segment about one-fourth longer than the penultimate. Head blackish gray; anterior vertex reduced to a linear strip that is about as wide as a single ommatidium.

Pronotum brown. Mesonotum reddish brown to buffy, with poorly differentiated, pale brown stripes, the intermediate pair darker and more conspicuous near the suture; scutal lobes more darkened; mediotergite darkened on cephalic portion; pleurotergite dark brown, more or less pruinose. Pleura buffy, with a narrow brownish black longitudinal stripe from the cervical sclerites across the propleura, ventral anepisternum and ventral pteropleurite to the base of abdomen. Halteres yellow, the small knobs very weakly darkened. Legs with the coxae yellow, the fore and middle pairs narrowly infuscated at base; trochanters yellow; femora pale brown, the bases brightened, the tips vaguely darkened; tibiae and tarsi pale brown, the outer segments darker; claws elongate, simple. Wings (fig. 1, *a*) brownish yellow, sparsely patterned with brown as in the *punctulata* group, including the usual two spots along vein 2d *A*; cells *C* and *Sc* unpatterned or the former with two or three pale brown clouds near outer end; veins yellow, darker in the clouded portions. Venation *Sc*₁ ending a short distance beyond origin of *Rs*, *Sc*₂ at its tip; *m-cu* shortly beyond fork of *M*.

Abdomen reddish brown, the basal segments somewhat darker; hypopygium obscure yellow. Male hypopygium (fig. 1, *b*) with the tergite extensive, the caudal margin gently emarginate, lateral lobes rounded. Dorsal dististyle, *dd*, a slender curved rod, the tip acute and very gently upcurved. Ventral dististyle, *vd*, large, more extensive than the basistyle; rostral prolongation conspicuous; a single powerful spine placed far out on the prolongation, without a basal tubercle. Gonapophyses, *g*, with mesal-apical lobe slender, nearly straight, blackened. Aedeagus, *a*, terminating in a simple narrow point.

Piti, at light, June 12, Swezey, holotype male.

In its large size and in the structure of the male hypopygium, the present fly is quite distinct from all species of the group so far made known. In the structure of the male hypopygium, it is closest to *Limonia* (*Dicranomyia*) *neopunctulata* Alexander, of the southern Philippine Islands and Borneo, differing especially in the structure of the dististyles and gonapophyses. The species belonging to the *punctulata* group are as follows:

- L. (D.) fijiana* Alexander. Fiji.
- L. (D.) fullawayi* Alexander. Ladrões, Carolines.
- L. (D.) kulin* Alexander. Southeastern Australia.
- L. (D.) magnistyla* Alexander. New Britain.
- L. (D.) neopunctulata* Alexander. Mindanao, Borneo.
- L. (D.) poli* Alexander. China, Japan.
- L. (D.) punctipennis* Skuse. Eastern Australia.
- L. (D.) p. maoriensis* Alexander. New Zealand.
- L. (D.) p. occidentalis* Alexander. Western Australia.
- L. (D.) punctulata* de Meijere. East Indies.
- L. (D.) punctulatella* Alexander. Northeastern Australia.
- L. (D.) punctulatoides* Alexander. Mindanao.
- L. (D.) rectidens* Alexander. China.
- L. (D.) subpunctulata* Alexander. Formosa.

5a. *Limonia* (*Dicranomyia*) *fullawayi* (Alexander).

Dicranomyia fullawayi Alexander, Canadian Entomologist 47: 79, 1915.

Limonia (*Dicranomyia*) *fullawayi* Alexander, B. P. Bishop Mus., Occ. Papers 9(21): 6, 1932.

Collected in Guam in 1911 by Fullaway. None collected in 1936.

6. **Limonia (Dicranomyia) sordida** (Brunetti).
Dicranomyia sordida Brunetti, Fauna British India, Dipt. Nematocera, 382, 383, 1912.
 Piti, July 13, 24, Swezey; Talofoto, June 17, Swezey.
 Widespread in continental Asia and the Greater Sunda Islands. Hitherto not recorded from the Micronesian Islands.
7. **Limonia (Idioglochina) obesula** (Edwards).
Dicranomyia (Idioglochina) obesula Edwards, Ann. Mag. Nat. Hist. IX 20: 232, 1927.
 Tarague, April 19, Bryan.
8. **Conosia irrorata insularis**, new subspecies.
 Similar to the typical form, differing as follows: Wings of male not conspicuously dilated opposite vein 2d *A*. Wing pattern in some specimens much heavier than in continental material, this being the case in the type. Male hypopygium with the gonapophyses much longer and stronger, heavily blackened.
 Caroline Islands: Ponape, Mt. Nanalaut, March 7, 1936, Z. Ono, holotype male, B. P. Bishop Museum collection; Ponape, Nipit-Ninoani, Jan. 13, 1938, Esaki, one male, Alexander collection; Ponape, Kolonia-Nat, Nov. 19, 1937, Esaki, one male, Kiushiu Imperial University collection; Ponape, March 14, 1936, Z. Ono, one male, B. P. Bishop Museum collection. Palau, Babelthaob [Babelthuap], Marukyoku [Melekiok], Feb. 23, 1936, Esaki, one male, Kiushiu Imperial University collection (paratypes).
9. **Trentepohlia (Mongoma) guamensis** (Alexander).
Mongoma guamensis Alexander, Canad. Ent. 47: 83, 1915.
 Ritidian Pt., April 15, Bryan; Talofoto, Headwaters Plateau, June 18, Usinger; Yigo, Nov. 8, on rotten corn stalk, Swezey.
 Caroline Islands: Kusaie-Mt. Wakapp, Jan. 26, Z. Ono.
10. **Gonomyia (Lipophleps) pietatis** Alexander, Annot. Zool. Jap. 19: 220-221, 1940.
 Piti, May 23, from grass, Swezey.
11. **Styrgomyia didyma** Grimshaw, Fauna Hawaiiensis, 3: 10, 1901.
 Ritidian Pt., April 22, Bryan; Piti, April 30, Usinger; Agat, May 20, 31, Usinger; Sumay Road, June 23, Usinger, July 15, Swezey.