

CHECK LIST OF TIPULIDAE OF OCEANIA

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The Oceanic islands here considered are Hawaii, the Galapagos, Juan Fernandez, the Marquesas, Society Islands, Austral Islands, Samoa, Tonga, Fiji, New Hebrides, New Caledonia, Solomon Islands, Marshall Islands, Caroline Islands, and the Marianas, together with a multitude of small and isolated islands within the same circumference. Islands and groups of islands lying as immediate satellites of great land masses, as New Guinea with New Britain and certain smaller islands, Australia with Lord Howe and Norfolk islands, and New Zealand with the Kermadec, Chatham, and Subantarctic islands, are omitted. The inclusion of Australia and New Zealand would add nearly 1,200 species of Tipulidae to the present list. New Guinea is still so insufficiently known as regards its tipulid fauna that any indication of its possibilities would be surmise only.

It was formerly believed that the crane fly fauna of the more remote Pacific islands was greatly reduced in number of species. This statement still seems to hold true for the lowlands, but the higher mountains of many of the islands are now known to support a relatively rich tipulid fauna that is entirely endemic. The table shows the generic and subgeneric distribution in five groups of islands that are somewhat better known than the others:

| | HAWAII | MARQUESAS | SAMOA | FIJI | NEW HEBRIDES |
|-----------------------------|--------|-----------|-------|------|-----------------|
| Ctenacroscelis..... | ---- | ---- | ---- | × | ---- |
| Nephrotoma..... | ---- | ---- | ---- | × | × |
| Limonia (strict sense)..... | ---- | ---- | × | × | ---- |
| Libnotes..... | × | × | × | × | × |
| Dicranomyia..... | × | × | × | × | × |
| Alexandriaria..... | ---- | ---- | × | ---- | × |
| Idioglochina..... | ---- | ---- | × | ---- | × |
| Rhipidia..... | ---- | ---- | × | ---- | ---- |
| Geranomyia..... | ---- | ---- | × | ---- | ---- |
| Pseudoglochina..... | ---- | ---- | × | ---- | ---- |
| Doaneomyia..... | ---- | ---- | ---- | × | × |
| Thrypticomyyia..... | ---- | ---- | × | × | × |
| Eurhamphidia..... | ---- | ---- | × | ---- | × |
| Epiphragma..... | ---- | ---- | ---- | × | × |
| Conosia..... | ---- | ---- | ---- | × | ---- |
| Mongoma..... | ---- | ---- | × | × | × |

| | HAWAII | MARQUESAS | SAMOA | FIJI | NEW HEBRIDES |
|------------------------------|--------|-----------|-------|------|-----------------|
| Trentepohlia..... | | | | × | |
| Gonomyia (strict sense)..... | | | | × | |
| Lipophleps..... | × | × | × | × | × |
| Trimicra..... | × | | | | |
| Empeda..... | | | × | | |
| Erioptera..... | | | | × | |
| Riedelomyia..... | | | | × | |
| Toxorhina..... | | | × | | |
| Styringomyia..... | × | | × | × | × |

Hawaii is rich in endemic species of *Dicranomyia*, including the only leaf-mining species of the subgenus so far described. The Marquesas show a somewhat unusual development of *Lipophleps*. Samoa has a remarkably rich fauna in the higher mountains, including several genera and subgenera (*Rhipidia*, *Geranomyia*, *Pseudoglochina*, *Empeda*, *Toxorhina*) not otherwise recorded from Oceania. Fiji likewise has a number of groups (*Ctenacroscelis*, *Conosia*, *Trentepohlia* in the strict sense, *Gonomyia* in the strict sense, *Erioptera* in the strict sense, *Riedelomyia*) not found elsewhere in the Micronesian islands. The New Hebrides have a relatively rich crane fly fauna that is still insufficiently known, including the only hexatomine genus (*Epiphragma*) yet recorded from Oceania. Tahiti is rich in endemic species of *Lipophleps*. Three of the above groups, *Libnotes*, *Dicranomyia*, and *Styringomyia*, with an unusually wide range in the Pacific islands, are represented merely by the presence of three unusually well distributed forms, *Limonia* (*Libnotes*) *perkinsi*, *L.* (*Dicranomyia*) *illingworthi*, and *Styringomyia didyma*.

Edwards has considered that the small, widespread crane flies may well have attained their present great range by the aid of the wind. This belief is upheld by the fact that almost all of the Tipulidae of Oceania belong to the subfamily Limoniinae, including small and medium-sized members of the family. The larger and seemingly more vigorous members of the Tipulinae are restricted to islands that are nearest major land masses (*Macromastix*, New Caledonia; *Ctenacroscelis*, Fiji; *Nephrotoma*, New Hebrides, Solomon Islands).

No genus or subgenus of Tipulidae is restricted to Oceania. The most characteristic groups are two subgenera of *Limonia*, *Doaneomyia* and *Idioglochina*. The former has species in Tahiti,

Fiji, and New Hebrides, with one further species in Luzon; the latter group is characteristic of the Pacific islands, with outlying members on the coasts of Australia, New Zealand, Sumatra, Java, and Japan. It is now believed that all or virtually all of the species of *Idioglochina* will be found to be marine in larval habitat. A peculiar group of *Lipophleps*, the *flavidapex* group is characteristic of the more remote Pacific islands, as Samoa and the Marquesas.

SUBFAMILY TIPULINAE

- Macromastix cockerellae** Alexander: 12,* vol. 5, pp. 85-86 (New Caledonia).
Macromastix novocaledonica Alexander: 12, vol. 5, pp. 83-84 (New Caledonia).
Ctenacroscelis fijiensis Alexander: 5, vol. 8, pp. 562-563 (Fiji).
Ctenacroscelis lepidus Alexander: 8, vol. 13, pp. 45-47 (Fiji).
Ctenacroscelis walkerianus Alexander: 8, vol. 13, pp. 47-48 (Fiji).
Tipula baekstroemi Alexander: 4, pp. 25-26 (Juan Fernandez).
Nephrotoma opima Alexander: 8, p. 49 (Solomon Islands).
Nephrotoma solomonis Alexander: 8, pp. 48-49 (Solomon Islands).
Nephrotoma species, Edwards: 16, p. 236 (New Hebrides).

SUBFAMILY LIMONIINAE

TRIBE LIMONIINI

- Limonia (Limonia) bryaniana** Alexander: 12, pp. 86-88 (Samoa).
Limonia (Limonia) dactylolabis Alexander: 5, pp. 552-553 (Fiji).
Limonia (Limonia) stoneri Alexander: 10, pp. 13-14 (Fiji).
Limonia (Limonia) veitchi Alexander: 8, pp. 37-38 (Fiji).
Limonia (Libnotes) fijiensis Alexander: 1, p. 240 [*Teucholabis*] (Fiji, Samoa).
Limonia (Libnotes) greenwoodi Alexander: 8, pp. 40-41 [*Libnotes*] (Fiji).
Limonia (Libnotes) hebridensis Edwards: 16, pp. 233-234 [*Libnotes*] (New Hebrides).
Limonia (Libnotes) hopkinsi Edwards: 18, p. 79 [*Libnotes*] (Samoa).
Limonia (Libnotes) inusitata Edwards: 16, p. 234 [*Libnotes*] (New Hebrides).

* Numbers refer to bibliography, page 11.

- Limonia (Libnotes) manni** Alexander: 8, pp. 41-43 [*Libnotes*] (Solomon Islands).
- Limonia (Libnotes) notata** Van der Wulp; Edwards: 16, p. 223 [*Libnotes*] (New Hebrides).
- Limonia (Libnotes) perkinsi** Grimshaw: 20, pp. 6-7 [*Limnobia*] (Hawaiian islands, Marquesas, Society Islands, Samoa, Fiji).
- Limonia (Libnotes) picta** Alexander: 2, pp. 80-82 [*Libnotes*] (Guam).
- Limonia (Libnotes) punctipennis** de Meijere; Edwards: 16, p. 233; 18, p. 80 [*Libnotes*] (Samoa, New Hebrides).
- Limonia (Libnotes) samoensis** Alexander: 6, pp. 9-10 [*Libnotes*] (Samoa).
- Limonia (Libnotes) solomonis** Alexander: 8, pp. 39-40 [*Libnotes*] (Solomon Islands).
- Limonia (Libnotes) strigivena** Walker: 24, p. 229 [*Limnobia*]; Edwards: 18, p. 81, [*Libnotes*] (Samoa, Tonga, Fiji, New Guinea, northern Queensland).
- Limonia (Libnobia) veitchiana** Edwards: 15, pp. 571-572 [*Libnotes*] (Fiji).
- Limonia (Dicranomyia) apicalis** Grimshaw: see *Limonia (D.) grimshawi* Alexander.
- Limonia (Dicranomyia) brunnea** Grimshaw: see *Limonia (D.) stygipennis* Alexander.
- Limonia (Dicranomyia) bryani** Alexander: 8, p. 35 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) buxtoni** Edwards: 16, pp. 232-233 [*Dicranomyia*] (New Hebrides).
- Limonia (Dicranomyia) fijiana** Alexander: 8, pp. 36-37 [*Dicranomyia*] (Samoa, Fiji).
- Limonia (Dicranomyia) foliocuniculator** Swezey: 23, pp. 87-89 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) fullowayi** Alexander: 2, pp. 79-80 [*Dicranomyia*] (Guam).
- Limonia (Dicranomyia) grimshawi** Alexander: 3, pp. 27-28; new name for *Limonia (D.) apicalis* Grimshaw, not *apicalis* Wiedemann, Grimshaw: 20, p. 7 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) hawaiiensis** Grimshaw: 20, pp. 7-8 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) illingworthi** Alexander: 1, pp. 239-240;

- Edwards: 17, p. 237, as *sordida* Brunetti; Alexander: 12, pp. 89-90 [*Dicranomyia*] (Marquesas, Society Islands, Fiji, New Caledonia, Queensland).
- Limonia (Dicranomyia) jacobus** Alexander: 3, pp. 28-29 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) kauaiensis** Grimshaw: 20, p. 8 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) latifrons** Grimshaw: 20, p. 9 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) nigropolita** Alexander: 7, pp. 250-251 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) rapae** Alexander: 8, p. 36 [*Dicranomyia*] (Austral Islands).
- Limonia (Dicranomyia) sancti-georgii** Edwards: 17, p. 238 [*Dicranomyia*] (Austral Islands).
- Limonia (Dicranomyia) selkirki** Alexander: 4, pp. 25-26 [*Dicranomyia*] (Juan Fernandez).
- Limonia (Dicranomyia) sordida** Brunetti, see *Limonia (D.) illingworthi*, Edwards' records.
- Limonia (Dicranomyia) stygipennis** Alexander: 3, p. 27, new name for *Limonia (D.) brunnea* Grimshaw, not *brunnea* Doane; Grimshaw: 20, p. 8 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) subsordida** Edwards: 18, pp. 83-84 [*Dicranomyia*] (Samoa).
- Limonia (Dicranomyia) swezeyi** Alexander: 3, p. 29 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Dicranomyia) upoluensis** Edwards: 18, p. 84 [*Dicranomyia*] (Samoa).
- Limonia (Dicranomyia) variabilis** Grimshaw: 20, pp. 8-9 [*Dicranomyia*] (Hawaiian islands).
- Limonia (Alexandriaria) atromaculata** Edwards: 18, p. 82 [*Dicranomyia*] (Samoa).
- Limonia (Alexandriaria) semirufa** Edwards: 16, p. 231 [*Dicranomyia*] (New Hebrides).
- Limonia (Idioglochina) novocaledonica** Alexander: 12, pp. 90-91 (New Caledonia).
- Limonia (Idioglochina) obesula** Edwards: 16, p. 232 [*Dicranomyia*] (New Hebrides).

- Limonia (Idioglochina) parvimacula** Edwards: 16, p. 232 [*Dicranomyia*] (New Hebrides).
- Limonia (Idioglochina) tusitala** Alexander: 6, pp. 10-11 [*Rhipidia*]; Edwards: 18, pp. 84-86 [*Dicranomyia*] (Samoa, Tonga?).
- Limonia (Idioglochina) vilae** Edwards: 16, p. 231 [*Dicranomyia*] (New Hebrides).
- Limonia (Rhipidia) pulcherrima** Edwards: 18, pp. 86-87 [*Rhipidia*] (Samoa).
- Limonia (Geranomyia) samoana** Edwards: 18, p. 86 [*Geranomyia*] (Samoa).
- Limonia (Pseudoglochina) laticincta** Edwards: 18, pp. 78-79 [*Pseudoglochina*] (Samoa).
- Limonia (Doaneomyia) albitarsis** Edwards: 16, p. 233 [*Doaneomyia albitarsis!*] (New Hebrides).
- Limonia (Doaneomyia) fijiensis** Alexander: 8, pp. 33-34 [*Doaneomyia*] (Fiji).
- Limonia (Doaneomyia) tahitiensis** Alexander: 6, p. 12 [*Doaneomyia*] (Tahiti).
- Limonia (Thrypticomyyia) aureipennis** Skuse, variety, Edwards: 16, p. 233; 18, pp. 77-78, [*Thrypticomyyia*] (Samoa, New Hebrides).
- Limonia (Thrypticomyyia) dichromogaster** Edwards: 17, pp. 238-239 [*Thrypticomyyia*] (Society Islands).
- Limonia (Thrypticomyyia) saltens** Doleschall; Alexander: 1, p. 239; see *Limonia (T.) subsaltens* Alexander.
- Limonia (Thrypticomyyia) subsaltens** Alexander: 8, pp. 34-35 [*Dicranomyia*] (Samoa, Fiji, New Caledonia).
- Helius (Eurhamphidia) connectus** Edwards: 18, pp. 87-88 (Samoa).
- Helius (Eurhamphidia) mirandus** Edwards: 16, pp. 234-235 (New Hebrides).

TRIBE HEXATOMINI

- Epiphragma (Epiphragma) hebridensis** Alexander: 8, pp. 44-45 (New Hebrides).

TRIBE ERIOPTERINI

- Conosia irrorata** Wiedemann: 25, p. 574 [*Limnobia*]; Skuse: 22, pp. 837-838; Alexander: 1, p. 244 (Fiji).

- Trentepohlia** (**Trentepohlia**) **fijiensis** Alexander: 1, p. 243 [*Mongoma*] (Fiji).
- Trentepohlia** (**Mongoma**) **albangusta** Edwards: 18, p. 100 (Samoa).
- Trentepohlia** (**Mongoma**) **brevicellula** Alexander: 5, p. 44 (Samoa, Fiji).
- Trentepohlia** (**Mongoma**) **brunnea** Edwards: 18, pp. 97-98 (Samoa).
- Trentepohlia** (**Mongoma**) **fuscistigma** Edwards: 18, pp. 99-100 (Samoa).
- Trentepohlia** (**Mongoma**) **galactopus** Edwards: 16, p. 235 (New Hebrides).
- Trentepohlia** (**Mongoma**) **guamensis** Alexander: 2, p. 83 (Guam).
- Trentepohlia** (**Mongoma**) **pacifica** Alexander: 6, p. 13 (Samoa).
- Trentepohlia** (**Mongoma**) **samoensis** Alexander: 6, pp. 12-13 (Samoa).
- Trentepohlia** (**Mongoma**) **spectralis** Edwards: 18, p. 98 (Samoa).
- Trentepohlia** (**Mongoma**) **spinulifera** Edwards: 18, pp. 100-101 (Samoa).
- Trentepohlia** (**Mongoma**) **valida** Edwards: 18, pp. 96-97 (Samoa).
- Gonomyia** (**Gonomyia**) **varipes** Alexander: 1, p. 242 (Fiji).
- Gonomyia** (**Ptilostena**) **cockerelli** Alexander: 12, pp. 91-92 (New Caledonia).
- Gonomyia** (**Lipophleps**) **adamsoni** Alexander: 13, p. 88 (Marquesas).
- Gonomyia** (**Lipophleps**) **dicranura** Edwards: 18, pp. 92-93 (Samoa).
- Gonomyia** (**Lipophleps**) **digitifera** Alexander: 8, pp. 43-44 (Fiji).
- Gonomyia** (**Lipophleps**) **fijiensis** Alexander: 1, pp. 241-242 (Tonga, Fiji).
- Gonomyia** (**Lipophleps**) **flavidapex** Edwards: 17, p. 239 (Society Islands).
- Gonomyia** (**Lipophleps**) **fuscoscuteolata** Alexander: 14, (Society Islands).
- Gonomyia** (**Lipophleps**) **hawaiiensis** Alexander: 3, p. 30 (Hawaiian islands).
- Gonomyia** (**Lipophleps**) **labidura** Edwards: 18, p. 93 (Samoa).
- Gonomyia** (**Lipophleps**) **marquesana** Alexander: 13, p. 88 (Marquesas).
- Gonomyia** (**Lipophleps**) **metallescens** Edwards: 17, p. 240; Alexander: 13, p. 88 (Marquesas).

- Gonomyia (Lipophleps) mumfordi** Alexander: 13, p. 90 (Marquesas).
- Gonomyia (Lipophleps) naiadifera** Edwards: 16, pp. 235-236 (New Hebrides).
- Gonomyia (Lipophleps) nigripennis** Edwards: 18, pp. 93-94 (Samoa).
- Gonomyia (Lipophleps) pacifica** Edwards: 18, pp. 90-91 (Samoa).
- Gonomyia (Lipophleps) punctigera** Alexander: 14 (Society Islands).
- Gonomyia (Lipophleps) tahitiensis** Alexander: 14 (Society Islands).
- Gonomyia (Lipophleps) tonnoirella** Alexander: 14 (Society Islands).
- Trimicra lateralis** Grimshaw: see *Trimicra pilipes* Fabricius.
- Trimicra pilipes** Fabricius: 19, p. 324 [*Tipula*]; Grimshaw: 20, p. 11 [*Trimicra lateralis*] (Hawaiian islands).
- Erioptera (Empeda) crassicus** Edwards: 18, pp. 89-90 [*Empeda*] (Samoa).
- Erioptera (Erioptera) oceanica** Alexander: 1, p. 243 (Fiji).
- Riedelomyia teucholabina** Alexander: 5, pp. 553-554 [*Limnobia?*]; 11, pp. 481-482 (Fiji).
- Toxorhina (Toxorhina) infumata** Edwards: 18, pp. 88-89 (Samoa).
- Styrgomyia didyma** Grimshaw 20, p. 10; Grünberg: 21, p. 524 [*Idiophlebia pallida*] (Hawaiian islands, Fanning Island, Samoa, Tonga, Fiji, Society Islands, Caroline Islands, New Hebrides, New Guinea).
- Styrgomyia fumosa** Edwards: 15, p. 572 (Fiji).
- Styrgomyia pallida** Grünberg: see *Styrgomyia didyma* Grimshaw.

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