The Mosquitoes of Polynesia with a Pictorial Key
to some Species Associated with Filariasis and/or
Dengue Fever¹,²

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ABSTRACT. A list of the mosquitoes of Polynesia is tabulated and their distribution outlined. Keys for the identification of adults and larvae of Polynesian species are provided.

A pictorial key for the recognition of species associated with filariasis and dengue fever is furnished for the use of field workers.

INTRODUCTION

In order to assist field workers in recognizing the vector mosquitoes of filariasis and dengue in Polynesia, pictorial keys to the adult and larval stages have been prepared at the request of the World Health Organization. An attempt was made to make the keys precise, as simple as possible. A few additional characters indicated by a double asterisk (**) have been added to certain species or species groups wherever necessary, to assure an exact identification and to avoid confusion with very similar and/or common species in the area. Unfortunately, the highly variable nature of the scutellaris group renders extremely difficult the identification of certain species of this group, some of which can only be identified by examination of the male terminalia. Therefore, it is always advisable that this examination be performed not only for routine confirmation of identification but also for the detection of new species in the area.

Map 1 shows the area of the South Pacific covered by the pictorial key. This area includes all of the Polynesian triangle north of the New Zealand faunal area. The 3 angles are represented by the Fiji Islands in the west, Easter Island in the east and the Hawaiian Islands in the north.

Table 1 lists all the 43 species and forms of mosquitoes known to occur

¹Excluding the New Zealand faunal area covered by Belkin (1962).

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in the area delimited and shows by an asterisk (*) the 19 known or suspected vector species included in the pictorial key. Those species having a limited distribution are also noted.

Table 2 lists the species by island or island group, indicating those that are endemic to a single area, and includes 9 new distribution records.

The non-pictorial keys to genera, subgenera, and species will obviate misidentification and will encourage interested workers to look for species not known to occur in these island groups and seek advice on the possible discovery of new species.

The keys will also assist in confirming the natural vectors of filariasis and/or dengue in the various island groups and in possibly incriminating species that are not known to be vectors at the present time.

It is important that final confirmation and/or determination of a species be made by specialists at one of the major museums such as the United States National Museum, Smithsonian Institution, Washington, D.C. 20560, or the Bernice P. Bishop Museum, P.O. Box 6037, 1355 Kalihi Street, Honolulu, Hawaii 96818. This is especially necessary for new distribution records, new vector species and possible new species.

Table 1
Mosquito Species of Polynesia

1. Uranotaenia colocasiae Edwards (Fiji Is. only)
2. Uranotaenia painei Edwards (Fiji Is. only)
*3. Culex (Culex) quinquefasciatus Say
4. Culex (Culex) atriceps Edwards (Society Is. only)
5. Culex (Culex) kesseli Belkin (Society Is. only; rare)
6. Culex (Culex) marquesensis Stone and Rosen (Marquesas Is. only)
7. Culex (Culex) roseni Belkin (Society Is. only)
8. Culex (Culex) sitiens Wiedemann
*9. Culex (Culex) annulirostris Skuse
10. Culex (Culex) albinervis Edwards (Fiji Is. only)
11. Culex (Culex) samoensis (Theobald) (Western Samoa only; rare)
12. Aedeomyia (Aedeomyia) catasticta Knab (Fiji Is. only)
13. Mansonia (Coquillettidia) fijiensis Belkin (Fiji Is. and rare in Western Samoa)
14. Aedes (Finlaya) burnetti Belkin (Fiji Is. only)
*15. Aedes (Finlaya) fijiensis Marks (Fiji Is. only)
16. Aedes (Finlaya) freycinetiae Laird (Fiji Is. only)
*17. Aedes (Finlaya) oceanicus Belkin
*18. Aedes (Finlaya) samoanus (Gruenberg) (Samoa Is. only)
*19. Aedes (Finlaya) tutuilae Ramalingam and Belkin (see Ramalingam and Belkin, 1965) (Samoa Is. only)
20. Aedes (Finlaya) sp. Albino form (Fiji Is. only)
21. Aedes (Levua) suvae Stone and Bohart (Fiji Is. only)
22. Aedes (Ochlerotatus) edgari Stone and Rosen (Society Is. only)
*23. Aedes (Ochlerotatus) vigilax (Skuse) (Fiji Is. only)
24. Aedes (Aedimorphus) vexans (Meigen)
*25. Aedes (Stegomyia) aegypti (Linnaeus)
*26. Aedes (Stegomyia) albopictus (Skuse) (Hawaiian Is. only)
*27. Aedes (Stegomyia) cooki Belkin (Niue I. and Tonga Is. only)
*28. Aedes (Stegomyia) futunae Belkin (Horn Is. only)
*29. Aedes (Stegomyia) horrescens Edwards (Fiji Is. only)
*30. Aedes (Stegomyia) polynesiensis Marks (see Huang, 1975)
*31. Aedes (Stegomyia) pseudoscutellaris (Theobald) (see Huang, 1975)
   (Fiji Is. only)
*32. Aedes (Stegomyia) rotumae Belkin (Rotuma I. only)
*33. Aedes (Stegomyia) tabu Ramalingam and Belkin (see Ramalingam and
   Belkin, 1965) (Tonga Is. only)
*34. Aedes (Stegomyia) tongae Edwards (Tonga Is. only)
*35. Aedes (Stegomyia) upolensis Marks (Samoa Is. only)
*36. Aedes (Stegomyia) sp. Tafahi form (Tonga Is. only)
37. Aedes (Stegomyia) sp. Wallis form (Wallis Is. only; rare)
38. Tripteroides (Tripteroides) purpuratus (Edwards) (Fiji Is. only)
39. Tripteroides (Rachionotomyia) rotumanus (Edwards) (Rotuma I. only)
40. Toxorhynchites (Toxorhynchites) amboinensis (Doleschall) (see
    Steffan, 1968) (introduced)
41. Toxorhynchites (Toxorhynchites) brevipalpis Theobald (see Steffan,
    1968) (introduced)
42. Toxorhynchites (Toxorhynchites) inornatus (Walker) (introduced)
43. Toxorhynchites (Toxorhynchites) splendens (Wiedemann) (introduced)

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1 Excluding the New Zealand faunal area covered by Belkin (1962).
* Included in the Pictorial Key.
Table 2  
Distribution of Mosquito Species in Polynesia

<table>
<thead>
<tr>
<th>Island</th>
<th>Species Count</th>
<th>Species Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji Islands</td>
<td>23 spp.</td>
<td>1, 2, 3, 8, 9, 10, 13, 14, 15, 16, 20, 21, 23, 24, 25, 28, 30, 31, 34, 36, 38, 42, 43</td>
</tr>
<tr>
<td>Tonga Islands</td>
<td>10 spp.</td>
<td>3, 8, 9, 17, 24, 25, 27, 33, 34, 36</td>
</tr>
<tr>
<td>Samoa Islands</td>
<td>13 spp.</td>
<td>3, 8, 9, 11 (rare), 13 (rare), 17, 18, 19, 24, 25, 30, 35, 41</td>
</tr>
<tr>
<td>Rotuma Island</td>
<td>6 spp.</td>
<td>3, 9, 24, 32, 33, 43** (no Aedes aegypti; Culex sitiens may be present)</td>
</tr>
<tr>
<td>Horn Islands</td>
<td>6 spp.</td>
<td>3, 8, 9, 17, 28, 30 (no Aedes aegypti)</td>
</tr>
<tr>
<td>Wallis Islands</td>
<td>8 spp.</td>
<td>3, 8, 9, 17, 24, 25, 30, 37</td>
</tr>
<tr>
<td>Ellis Islands</td>
<td>6 spp.</td>
<td>3, 8, 9, 24, 25, 30</td>
</tr>
<tr>
<td>Tokelau Islands</td>
<td>2 spp.</td>
<td>24, 30</td>
</tr>
<tr>
<td>Phoenix Islands (unknown)</td>
<td>3??, 25??, 30?</td>
<td></td>
</tr>
<tr>
<td>Niue Island</td>
<td>4 spp.</td>
<td>3, 8, 25, 27</td>
</tr>
<tr>
<td>Northern Cook Islands</td>
<td>4 spp.</td>
<td>3, 9, 25, 27</td>
</tr>
<tr>
<td>Southern Cook Islands</td>
<td>5 spp.</td>
<td>3, 9, 24, 25, 30</td>
</tr>
<tr>
<td>Society Islands</td>
<td>8 spp.</td>
<td>3, 4, 5, 7, 9, 22, 25, 30</td>
</tr>
<tr>
<td>Austral Islands</td>
<td>4 spp.</td>
<td>3, 9, 25, 30</td>
</tr>
</tbody>
</table>
15. Tuamotu Archipelago 4 spp. 3, 9, 25, 30 (Aedes albopictus was introduced on one small island, but apparently did not become established)

16. Rapa Island 2 spp. 3, 9

17. Pitcairn Island 3 spp. 3, 9, 30

18. Easter Island 1 sp. 3

19. Marquesas Islands 3 spp. 3, 6, 30

20. Line Islands (unknown) 3?, 25?, 30?

21. Hawaiian Islands 6 spp. 3, 24, 25, 26, 40, 41 (There were no mosquitoes in the Hawaiian Islands until 1898 when a Spanish ship introduced the first species.)

1 Excluding the New Zealand faunal area covered by Belkin (1962).

2 Numbers under each island or island group correspond to the numbering of the mosquito species listed in Table 1; italicized numbers (e.g. 1, 15) indicate that the species is restricted to that island or island group.

* New distribution records (J. C. Hitchcock, personal communication).


KEYS TO GENERA, SUBGENERA, AND SPECIES IN POLYNESIA

A. Adults

1. Apical half of proboscis bent sharply downward and backward and conspicuously more slender than basal half; posterior margin of scutellum evenly rounded . . . . . . . . . . . . . . Toxorhynchites

Apical half of proboscis not sharply bent downward and backward; posterior margin of scutellum distinctly trilobed . . . . . . . . . . . . . . . . 2
2(1). Cell $R_2$ always shorter than vein $R_{2+3}$; wing membrane without distinct microtrichia ....... *Uranotaenia*

Cell $R_2$ always at least as long as vein $R_{2+3}$; wing membrane with distinct microtrichia ............... 3

3(2). Spiracular setae present .................. ............... 4

Spiracular setae absent ........................................... 5

4(3). Vertex of head with azure blue scales ................. *Tripteroides* (*Tripteroides*) \*purpuratus* (Edwards)

Vertex of head without azure blue scales ............. *Tripteroides* (*Rachionotomyia*) \*rotumanus* (Edwards)

5(3). Flagellomeres 12 and 13 relatively short and thick ................. *Aedeomyia* (*Aedeomyia*) \*catasticta* Knab

Flagellomeres 12 and 13 normal, neither short nor thick .................. 6

6(5). Postspiracular setae usually absent .................. 7

Postspiracular setae usually present .................... 8

7(6). Claws of hindleg very small and inconspicuous; pulvilli present on all legs ................. *Culex*

Claws of hindleg quite large and conspicuous; pulvilli absent .............. *Mansonia* (*Coquillettidia*) \*fijien sis* Belkin

8(6). Wing scales broad; wings spotted; scutellum with broad scales on all lobes ........ *Aedes* (*Finlaya*) \*kochi* group

Wing scales narrow ................................................. 9

9(8). Head with decumbent scales largely broad, erect forked scales not numerous, restricted to occiput. *Aedes* (*Stegomyia*)

Head with decumbent scales largely narrow, erect forked scales numerous, not restricted to occiput ............. 10

10(9). Pleural scaling restricted to posterior pronotum and sternopleuron ................. *Aedes* (*Levua*) \*suvae* Stone and Bohart
Pleural scaling not restricted to posterior pronotum and sternopleuron.

11(10). Lower prealar scale patch present

Lower prealar scale patch absent

*Aedes (Ochlerotatus)*

*Lower mesepimeral setae present; proboscis without a distinct complete median light ring; tarsi without distinct light rings.*

*Aedes (Aedimorphus)*

*Lower mesepimeral setae absent; proboscis with a distinct complete median light ring; tarsi with distinct basal or basal and apical light rings.*

Excluding the New Zealand faunal area covered by Belkin (1962).

*Aedes (Finlaya) kochi* group

1. Tibiae with contrasting dark and light scales

Tibiae with all whitish scales

*Fiji albino form*

2(1). Halter largely dark scaled

Halter largely pale, yellow scaled

*Fijiensis Marks*

3(2). Hind tarsomere 4 with all dark scales

Hind tarsomere 4 with at least some yellow scales ventrally or white scales apically

*Freycinetiae Laird*

*Aedes (Ochlerotatus)*

Anterior pronotum, propleuron and paratergite with scales

*Vigilax (Skuse)*

Anterior pronotum, propleuron and paratergite without scales

*Edgar* Stone and Rosen

*Culex (Culex)*

1. Lower mesepimeral setae present; proboscis without a distinct complete median light ring; tarsi without distinct light rings

Lower mesepimeral setae absent; proboscis with a distinct complete median light ring; tarsi with distinct basal or basal and apical light rings.
Abdominal tergites with transverse basal pale bands connecting basolateral pale spots on some segments.............. 3

Abdominal tergites with basolateral pale spots not connected by transverse basal pale bands on any segment............................... 4

Female: ventral surface of proboscis extensively pale scaled; male: palpus with white scales on ventral surface of segments 4 and 5.............. quinquefasciatus Say

Female: ventral surface of proboscis uniformly dark; male: palpus without white scales on ventral surface of segments 4 and 5.............. marquesensis Stone and Rosen

Dorsal surface of hindfemur with basal 0.4 or more white................................. kesseli Belkin

Dorsal surface of hindfemur with basal 0.1 or less white................................. atriceps Edwards

Abdominal tergites without any indication of transverse pale bands............................... samoensis (Theobald)

Abdominal tergites with complete transverse pale bands on some segments............................... 6

A more or less conspicuous patch of broad erect scales in front of supraalar bristles.............. albinervis Edwards

No broad erect scales in front of supraalar bristles............................... 7

Foretibia usually with a line of small pale spots on anterior surface along dorsal row of bristles... annulirostris Skuse

Foretibia usually without any pale spots on anterior surface along dorsal row of bristles............................... 8

Midfemur usually with some pale speckling on anterior surface............................... sitiens Wiedemann

Midfemur usually without pale speckling on anterior surface............................... roseni Belkin

Uranotaenia

Propleuron with scales; vein R₂ at most 0.6 length of vein M₁+₂.................................... colocasiae Edwards
Propleuron without scales; vein R₂ at least 0.80 length of vein M₁+₂

**Toxorhynchites (Toxorhynchites)**

**Females**

1. Fore tarsomere 1 largely dark scaled; upper posterior pronotum largely with bluish and purplish scales
   - *brevipalpis* Theobald

2(1). Upper posterior pronotum largely with bluish green scales
   - *inornatus* (Walker)

2. Upper posterior pronotum largely with white scales

3(2). Lateral scale tuft of abdominal segment VI largely yellow
   - *splendens* (Wiedemann)

3. Lateral scale tuft of abdominal segment VI largely pale
   - *amboinensis* (Doleschall)

**Males**

1. Lateral scale tuft of abdominal segment VIII black; upper posterior pronotum largely with white scales
   - *amboinensis* (Doleschall)

2(1). Flagellomere 1 with dark scales on mesal surface; upper posterior pronotum largely with bluish and purplish scales
   - *brevipalpis* Theobald

2. Flagellomere 1 with light scales on mesal surface

3(2). Abdominal tergum I with dark scales medially and yellowish scales laterally
   - *splendens* (Wiedemann)

3. Abdominal tergum I with greenish scales medially and white scales laterally
   - *inornatus* (Walker)
B. Larvae

1. Median dorsal valve of siphon long, fixed, and with serrated dorsal margin ......................... *Mansonia* *(Coquillettidia)* *fijiensis* Belkin
   Median dorsal valve of siphon short, movable, and without serrated dorsal margin .................. 2

2(1). Siphon with more than one pair of subventral (1-S) tufts ........................................ 3
   Siphon with a single pair of subventral (1-S) tufts .................................................... 5

3(2). Siphon with acus .................................................................................................................. Culex
   Siphon without acus ................................................................................................................ 4

4(3). Comb scales arising from a sclerotized plate .................................................................... *Tripteroides* *(Tripteroides)* *purpuratus* (Edwards)
   Comb scales free, not arising from a sclerotized plate ....................................................... *Tripteroides* *(Rachionotomymia)* *rotumanus* (Edwards)

5(2). Abdominal setae in groups of 3-5 on large common sclerotized plates .............................. *Toxorhynchites*
   Abdominal setae arising separately and without strong sclerotized plates ............................ 6

6(5). Antenna greatly swollen from base to setae 2-4 A ....................................................... *Aedeomyia* *(Aedeomyia)* *catasticta* Knab
   Antenna at most slightly swollen proximad of seta 1-A ..................................................... 7

7(6). Maxillary suture of head capsule at most barely indicated on anterior margin, never reaching posterior tentorial pit ......................................................... *Uranotaenia*
   Maxillary suture of head capsule always complete and reaching posterior tentorial pit ............ 8
8(7). Abdominal segment I with seta 12 present .................................. 9
Abdominal segment I with seta 12 absent ........................................... 11

9(8). Ventral brush with 5 pairs of setae, each seta with long basal stalk, all arising from basal boss, without distinct bars, and no precratal tufts .......................................................... Aedes (Finlaya) kochi group

Ventral brush with 5-7 pairs of setae on grid, and with 2-4 precratal tufts ........................................... 10

10(9). Saddle large, extending on lateral surface; seta 1-X on or adjacent to saddle ................................ Aedes (Ochlerotatus)

Saddle small, restricted to dorsal surface; seta 1-X distinctly removed from saddle ................................ Aedes (Levua) suvae Stone and Bohart

11(8). Ventral brush with 6-7 pairs of setae on grid, and with 2-4 precratal tufts ................................ Aedes (Aedimorphus) vexans (Meigen)

Ventral brush with 4 or 5 pairs of setae, and no precratal tufts ................................ Aedes (Stegomyia)

Aedes (Finlaya) kochi group

1. Comb scales in middle of posterior row without fringe ................................ burnetti Belkin

Comb scales in middle of posterior row with fringe ........................................... 2

2(1). Comb scale with 1, 2 pairs of sharp denticles on basal part, distal part flattened, slightly expanded, rounded apically and fringed .......................... fijiensis Marks

Comb scale without basal denticles, with a slender long stem and a broad spatulate apex, and fringed ................................ freycinetiae Laird

The larva of Albino form is unknown.
### Aedes (Ochlerotatus)

| Siphon index more than 2.0; seta 5-C usually with 3-5 branches | edgari Stone and Rosen |
| Siphon index less than 2.0; seta 5-C usually with 1-2 branches | vigilax (Skuse) |

### Culex (Culex)

1. Antenna less than 0.35 head length; setae 4, 6-C placed far forward on head capsule | 2 |
2. Antenna more than 0.40 head length; setae 4, 6-C placed farther back on head capsule | 4 |
3(1). Seta 1-C thick, spiniform | marquesensis Stone and Rosen |
4. Seta 1-C very thin | 3 |
3(2). Pecten tooth usually with 1-2 strong basal denticles | atriceps Edwards |
4(1). Seta 1-C markedly flattened, its apex rounded or irregular | 5 |
5. Seta 1-C very slender or moderately thickened, its apex acuminate or filamentous | 6 |
6. Saddle complete | sitiens Wiedemann |
5(4). Saddle incomplete | roseni Belkin |
6(4). Seta 1-III-VI poorly developed, usually shorter than seta 3-III-VI | albinervis Edwards |
7(6). Seta 1-C very slender, filamentous distally, usually very lightly pigmented | quinquefasciatus Say |
6. Saddle incomplete | roseni Belkin |
7. Seta 1-C thickened, not filamentous distally, usually very strongly pigmented | annulirostris Skuse |

The larva of samoensis (Theobald) is unknown.
Uranotaenia

Seta 9-M, T single .................................. colocasiae Edwards
Seta 9-M, T multiple ................................. painei Edwards

Toxorhynchites (Toxorhynchites)

1. Seta 2-II-VI usually attached
to large dorsal plate ................................. inornatus Walker

Seta 2-II-VI free from large dorsal plate ............................. 2

2(1). Seta 11-IV, V usually with 3-4 branches ... splendens (Wiedemann)

Seta 11-IV, V usually single or double ................................. 3

3(2). Seta 9-C with 2-4 branches; 12-C
with 3-5 branches ................................. brevipalpis Theobald

Seta 9-C with 5 or more branches;
12-C with 6 or more branches .................. amboinensis (Doleschall)
MORPHOLOGICAL FEATURES USED IN IDENTIFICATION

A. ADULT

Fig. 1

THORAX-LATERAL
Fig. 2

ANTENNA

THORAX - DORSAL

HEAD - DORSAL
Fig. 3
Fig. 4

TERMINAL SEGMENTS

Dorsal  Ventral

LARVA

Dorsal Ventral

SIPHON (S)
pecten teeth (PT)

saddle lateral seta (1-X)
dorsal brush (2,3-X)

subventral tuft (1-S)

ventral gill
dorsal gill

ANTENNA (A)
MENTAL PLATE (MP)

maxillary suture
posterior tentorial pit

HEAD (C)

abdominal segments setae number

1-X abdominal segments
0—15 setae number

comb scales (CS)

ventral brush (4-X)

ANAL SEGMENT (X)

ABDOMEN

VI

V

IV

III

II

I

PLEURAL GROUPS (9—2)

PROTHORAX

MESOTHORAX

METATHORAX

B. LARVA

Dorsal Ventral
PICTORIAL KEY

A. ADULTS

Postspiracular setae absent.  Postspiracular setae present.

<table>
<thead>
<tr>
<th>(1) Lower mesepimeral setae present.</th>
<th>(1) Lower mesepimeral setae absent.</th>
</tr>
</thead>
</table>

(1) **Foretibia usually with a line of small pale spots on anterior surface along dorsal row of bristles.**

Erect forked scales numerous, not restricted to occiput.  Erect forked scales not numerous, restricted to occiput.

**Culex quinquefasciatus** Say

**Culex annulirostris** Skuse

Page 308  Page 310
(1) Scutellum with all narrow scales.
(2) ♀ cercus long and slender.
(3) Lower prealar scale patch present.
(4) Subspiracular area without scales.

(1) Scutellum with all broad scales.
(2) ♀ cercus short and broad.

(3) Dorsal wing scales in contrasting pattern of dark and light scales.

Aedes vigilax (Skuse)
(1) Accessory subcostal pale area not developed on vein C and (2) poorly developed, small on vein R1.

(1) Accessory subcostal pale area well developed, extensive on vein C as well as (2) on vein R1.

Prehumeral pale area of vein C developed.

Prehumeral pale area of vein C not developed.

Aedes fijiensis Marks

Aedes oceanicus Belkin

Sectoral pale area of vein C usually interrupted by a dark spot.

Sectoral pale area of vein C usually not interrupted by a dark spot.

Aedes tutuilae Ramalingam & Belkin

Aedes samoanus (Crumberg)
**Scutum with lyre-shaped white markings.**

**Scutum with a long median longitudinal white stripe extending from anterior margin to about level of wing root.**

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**Aedes aegypti** (Linnaeus)

1. Abdominal tergites with complete basal transverse white bands and
2. with separate basolateral white spots.

---

**Aedes albopictus** (Skuse)

1. Abdominal tergites without transverse white bands or with complete or incomplete subbasal white bands
2. connected to lateral white spots.

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(1) Supraalar white line more or less complete, with only narrow scales over wing root; (2) midlobe of scutellum with all broad white scales and without dark scales apically.

(1) Supraalar white line complete, with broad flat scales over wing root; (2) midlobe of scutellum with broad white scales and with dark scales apically.

Aedes futunae Belkin

Lower mesepimeral white scale patch absent or very small, with no more than 3 scales.

Lower mesepimeral white scale patch well developed, with at least more than 3 scales.

Hind tarsomere 4 with basal 0.75 or more white.

Aedes rotundae Belkin

Hind tarsomere 4 with basal 0.60-0.70 white.

Aedes upolensis Marks

Page 312
Lateral prescutal white line present, or at least with some narrow white scales on scutal angle area.

Aedes pseudoscutellaris (Theobald)

Subspiracular area with scales.

Aedes horresscens Edwards

Lateral prescutal white line not present.

Subspiracular area without scales.

Aedes polynesiensis Marks
Aedes tongae Edwards
Aedes tabu Ramalingam & Belkin
Aedes cooki Belkin
Aedes sp. Tafahi form
B. LARVAE

Siphon with more than 3 pairs of subventral tufts.

(1) Mental plate usually with 6-9 teeth on each side of median tooth.

(2) Seta 1-C thickened, not filamentous distally, usually very strongly pigmented.

(3) Siphon with 5-7 pairs of subventral tufts.

*Culex annulirostris* Skuse

Siphon with a single pair of subventral tufts.

(1) Mental plate with at least 10 teeth on each side of median tooth.

(2) Seta 1-C very slender, filamentous distally, usually very lightly pigmented.

(3) Siphon with 4 pairs of subventral tufts.

*Culex quinquefasciatus* Say
(1) Ventral brush with 6–7 pairs of setae and 
(2) with 2–4 precratal tufts.

(1) Ventral brush with 4 or 5 pairs of setae and 
(2) no precratal tufts.

**
(3) Comb in an irregular 2–3 rows,

(4) comb scale small, strongly fringed and 
usually with a differentiated apical spicule.

(5) Setae 1-VIII and 2-VIII not on common basal plate.

Aedes vigilax (Skuse)
(1) Comb in a single row.

(2) Central brush with 5 pairs of setae, arising from basal base, without distinct barbs.
Seta 4-C usually with 2–5 branches, without enlarged base.

Seta 4-C usually at least with 6 branches, and always with enlarged base.

(1) Seta 4-C distinctly caudad of 6-C.

(1) Seta 4-C at about level, or slightly cephalad of 6-C.

(1) Seta 4-C usually no more than 12 branches; 6-C usually with 3–7 branches.

(1) Seta 4-C at least 13 branches; 6-C usually with 8–12 branches.

(2) Siphon with uniform, dense, short spicules.

(2) Siphon largely bare or with short spicules in patches.

(2) Siphon with uniform, short spicules.

(2) Siphon with longer, denser and branched spicules.

Aedes fijiensis Marks

Aedes oceanicus Belkin

Aedes tutuilae Ramalingam & Belkin

Aedes samoanus (Grunberg)
(1) Ventral brush with 4 pairs of setae.

(2) Comb scale with very strong denticles at base of apical spine.

Aedes aegypti (Linnæus)

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Page 318
Aedes pseudoscutellaris (Theobald)

- Comb scale with fine denticles or fringes at base of apical spine.

Aedes polynesiensis Marks

Aedes cooki Belkin

- Comb scale with coarser denticles at base of apical spine

Aedes polynesiensis Marks

Aedes tabu Ramalingam & Belkin
Aedes tongae Edwards

Page 320
Aedes albopictus (Skuse)

Pecten tooth with very slender main shaft and not frayed apically.

Aedes futunae Belkin

Seta 13-P present.

Seta 13-P absent.

Aedes upolensis Marks

Aedes sp. Tafahi form
Pecten tooth with very strong basal anterior denticles.

Pecten tooth with rather small basal anterior denticles.

Aedes horrescens Edwards

Aedes rotumae Belkin

Footnote: Adults

Page 307  Culex sitiens Wiedemann, a widely distributed non-vector, is easily confused with Culex annulirostris, but does not have pale spots on the anterior surface of the foretibia (2).

Page 308  Aedes vexans (Meigen) [=Aedes nocturnus (Theobald)], a widely distributed non-vector, is easily confused with Aedes vigilax, but does not have a scale patch at (3) and does have a scale patch at (4). Aedes vigilax is only known from Fiji in Polynesia but is the major vector of subperiodic filariasis in New Caledonia and the Loyalty Islands.

Page 311  Aedes sp. Tafahi form which could easily be confused with Aedes upolensis especially when the lower mesepimeral white scale patch is absent, has the dorsal surface of hindfemur with basal 0.25 or more white while in Aedes upolensis the dorsal surface of the hindfemur has basal 0.12 or less white. Aedes sp. Tafahi form is only known from Tonga.

Larvae

Page 313  Culex sitiens Wiedemann has seta 1-C thickened but it is irregularly dorsoventrally flattened and usually blunt while in Culex annulirostris it is thickly tapering and pointed. The 2 species are often found associated in the same breeding site.

Page 314  Aedes vexans (Meigen) [=Aedes nocturnus (Theobald)] which could easily be confused with Aedes vigilax, has a single row of comb scales (3), a lightly fringed comb scale with a long apical spine (4), and setae 1-VIII and 2-VIII are on a common basal plate (5).

Page 318  Aedes sp. Wallis form which could easily be confused with Aedes polynesiensis, has the saddle incomplete. Aedes sp. Wallis form is only known from the Wallis Islands.
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REFERENCES


