

**A CHECKLIST AND REVIEW OF THE MOSQUITOES
OF THE PAPUAN SUBREGION**
(DIPTERA: CULICIDAE)

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A CHECKLIST AND REVIEW OF THE MOSQUITOES OF THE PAPUAN SUBREGION (DIPTERA: CULICIDAE)¹

By Wallace A. Steffan²

Abstract: The 336 species of Culicidae, 36 subgenera and 17 genera, from the Papuan Subregion are listed. The following data is given for each species: citation of original description, type locality, location of type, synonyms, stages described, bionomics, and distribution. References to keys to all stages are provided under the appropriate higher categories. Also, the type localities are listed, each followed by a list of species originally described from each area.

This is a preliminary report for the project "Studies of the mosquitoes of the Indonesian-Papuan area" and a review of the pertinent, published taxonomic and biological data on all species of mosquitoes known from this subregion. Despite the increased interest in the mosquito fauna of this area during and immediately following World War II, many gaps in our knowledge of these medically important arthropods still exist. The published information is generally scattered throughout the literature and frequently difficult to obtain. Therefore, this review is intended as a guide to further studies of the mosquito fauna.

The Papuan Subregion, as here defined, includes New Guinea and adjacent islands, the Moluccas, South Eastern Islands, South Western Islands, Timor, Bismarck Archipelago, Trobriand Islands, Woodlark Island, D'Entrecasteaux Islands, Louisiade Archipelago, and Solomon Islands (see Fig. 1). The NW boundary of this area passes between the Talaud Islands, the Celebes, and Sula Islands to the west and Halmahera, Obi Islands, and Buru Island to the east. The SW boundary passes between Alor Island to the west and Timor and Wetar Island to the east. The western boundary, therefore, is similar to that of the Australasian Region as defined by Lee & Woodhill (1944), except for the inclusion of Buru Island. In the Moluccas Celebes area, Weber's Line is followed. The inclusion of Timor in this subregion is debatable; therefore, an attempt will be made to collect additional material from this critical area.

REVIEW OF THE MOSQUITO FAUNA

Culicidae are well represented in this subregion, 336 taxa of the species group in 36 subgenera and 17 genera recorded; 63% of the species are apparently endemic (Table 1). These mosquitoes have affinities with both the Australian and Oriental faunas. Iyengar (1960) in his review of the mosquito fauna of the South Pacific includes a major portion of this subregion, omitting only the Moluccas and Timor. He concludes that the mosquito fauna of the South Pacific, including New Guinea, is related much closer to the Oriental than the Australian fauna. Marks (1961) discusses the faunal relationships of some genera and species complexes of Australian and Papuan Culicidae, giving examples of both Australian and Oriental elements in this area. Several authorities have speculated on relationships of the mosquito fauna of this subregion and adjacent regions. Speculation on the zoogeographic relationships of this fauna, therefore, is avoided until additional information is available.

The genera and subgenera known to occur in this area and number of species in each is presented in Table 1. This table also lists the number of endemic species in each taxon and the number of species known from the Papuan Subregion which are also recorded from the Australian and Oriental Regions. More work needs to be done in this and adjacent regions before the mosquito fauna can be characterized as a whole satisfactorily.

The distribution of the Papuan species and known stages of each are summarized in Table 2. The extralimital areas are defined as follows: Australian, Australia and New Zealand; South Pacific, essentially the same as the South Pacific of Belkin (1962) but excluding the Solomon Islands; Melanesia (see Gressitt 1954); Indomalayan, equivalent to the Indomalayan of Mattingly (1957); and Oriental (see Belkin 1962). Distribution records and information on known stages were obtained from the literature. Only 51% of the species recorded from this area are known in the adult, pupal, and larval stages.

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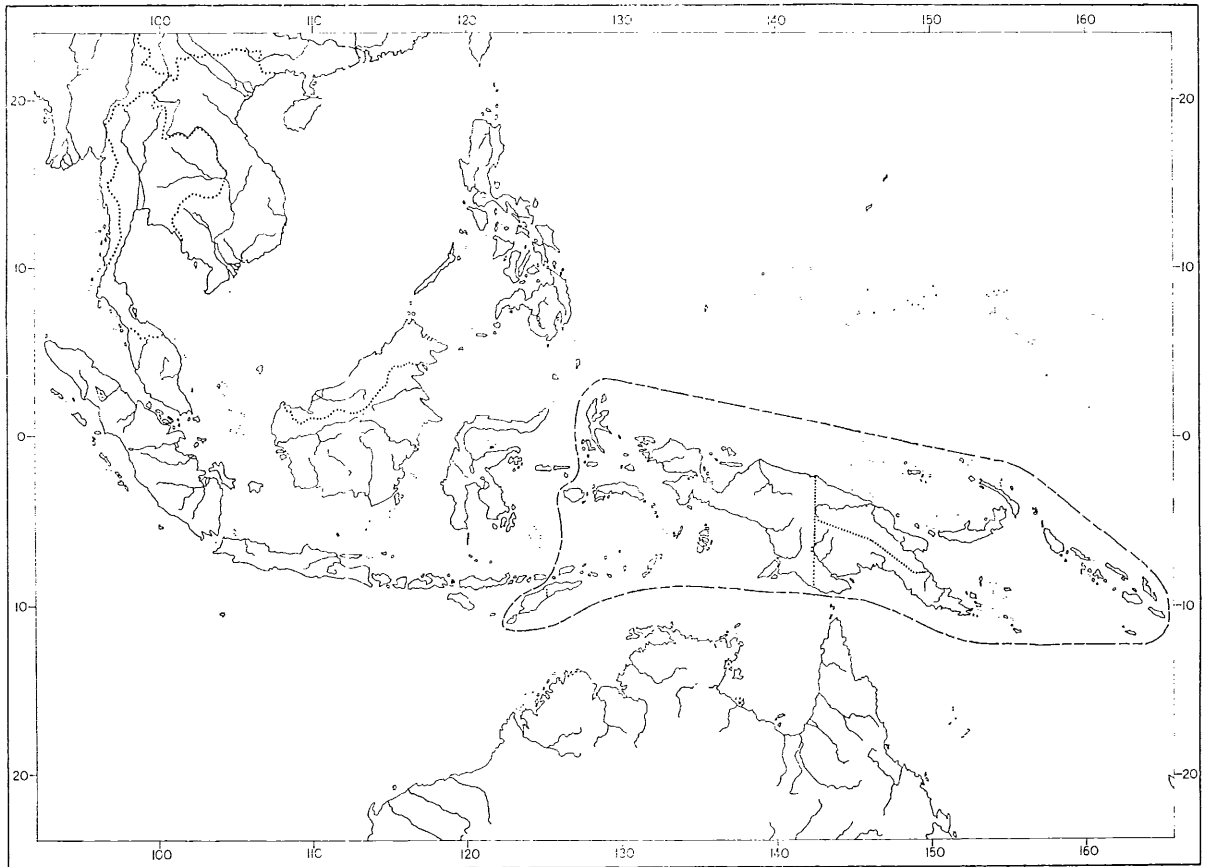


Fig. 1.

CHECKLIST

All species and other taxa of the species group reported in the Papuan Subregion are listed. The arrangement follows that of Stone, Knight, & Starcke (1959). References to keys for identification of adults, pupae, and larvae within any given genus or subgenus, if available, precede the list of species in the respective taxon. Information obtained from the literature is presented in the following order: (1) name, (2) author, (3) date, (4) citation to original description, volume and page, (5) type locality, (6) location of type, (7) synonyms (followed by items 1-6 for each name), (8) stages described, (9) bionomics, and (10) distribution.

ABBREVIATIONS FOR TYPE DEPOSITORIES

B	Naturhistorisches Museum, Basel, Switzerland.	GLB	Geneeskundig Laboratorium, Djakarta, Indonesia.
BMNH	British Museum (Natural History), London, England.	HNM	Magyar Nemzeti Múzeum, Budapest, Hungary.
CSIR	Council for Scientific and Industrial Research Museum, Canberra, Australia (now called the Australian National Insect Collec-	IID	Medical Zoology Laboratory, Institute for Infectious Diseases, University of Tokyo, Tokyo, Japan.
		IM	Zoological Survey of India, Indian Museum, Calcutta, India.
		ITH	Instituut voor Tropische Hygiene en Geographische Pathologie, Amsterdam, Netherlands.
		LM	State Museum of Natural History, Leyden, Netherlands.
		LU	Location unknown.
		MM	Macleay Museum of Natural History, University of Sydney, Sydney, Australia.
		MNHP	Museum National d'Histoire Naturelle, Paris, France.
		NMWH	Naturhistorisches Museum, Vienna, Austria.
		PBH	Division of Malaria, Tala, Bulacan, Luzon, Philippine Islands.

CORRIGENDA TO A CHECKLIST AND REVIEW OF THE MOSQUITOES
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Page 181, Table 1. Change Suaymia to Suaymyia. Change Lorrianea to Lorrainea. Change Aedomorphus to Aedimorphus.

Page 182, Table 2a. Anopheles (Anopheles) palmatum -- ♂ described. Anopheles (Cellia) crisatus -- P described.

Page 183, Table 2b. Tripteroides (Tripteroides) nissanensis -- P described. Change quasiornatus to quasiornatus. Tripteroides (Rachisoura) bisquamatus -- P described. Tripteroides (Rachisoura) longipalpatum -- ♀ and P described.

Page 184, Table 2c. Add microlepis (♂, ♀ and L described from New Guinea) below Tripteroides (Rachionotomyia) floridensis. Delete T. (R.) subobscurus. Ficalbia chamberlaini issp. metallica should be treated as one taxon, not two. Ficalbia elegans -- ♂, P, and L described; also add X under Australian and Indomalayan regions. Delete Mansonia (M.) africana. M. dives -- P and E described. M. uniformis -- ♂, P, L and E described.

Page 185, Table 2d. Uranotaenia albescens -- L described. U. obscura -- ♂ and ♀ described. Change sexauri to sexaueri. Change tibiaclada to tibioclada. Hodgesia -- change malaya to malayi.

Page 186, Table 2e. Transfer inexpectatus from subgenus Aedimorphus to Ochlerotatus. Finlaya -- change hollingheadi to hollingsheadi. Change poecilium to poecilium.

Page 187, Table 2f. Aedes (Christophersiomyia) -- change chinodes to chionodes. A. (Geoskusea) fimbripes -- ♂ described. A. (G.) becki -- ♂ described. A. (Geoskusea) -- change tonus to tonsus. A. (Stegomyia) annandalei -- New Guinea record questionable. A. (Aedimorphus) inexpectatus -- transfer to Table 2e under Ochlerotatus.

Page 188, Table 2g. Aedes (Verrallina) incertus -- New Guinea record questionable. A. (V.) similis -- New Guinea and Moluccas records questionable. A. (Leptosomatomyia) variepictus -- delete X under ♂ column. Armigeres lacuum -- ♀ and L described.

Page 189, Table 2h. Culex (Lophoceraomyia) -- change kuchnsi to kuhnsi. C. (Culiciomyia) -- change nallidothorax to pallidothorax. Change ruthi to ruthae.

Page 190, Table 2i. C. (C.) pseudovishnui -- New Guinea record questionable. C. (Culex) -- change quinquetasicatus to quinquefasciatus.

Page 191, Column 2. Line 1 -- Change myzorhyuchus to Myzorhynchus.
Line 24 -- A. palmatus, STAGES DESCRIBED -- Delete ♀, add L.

Page 192, Column 1. Line 14 -- change A. (C.) amictus sp. hilli to
A. (C.) amictus ssp. hilli.

Page 192, Column 2. Line 12 -- A. cristatus, STAGES DESCRIBED -- add P.

Page 193, Column 1. Line 28 -- A. (C.) longirostris, STAGES DESCRIBED --
add P.

Page 194, Column 1. Line 21 -- A. (C.) subpictus -- rossi Giles 1899,
Z:63 should read 2:63.

Page 194, Column 2. Line 8 -- change Var. A. (C.) orientalis Swellen-
grebel and Swellengrebel de Graaf to var. orientalis Swellengrebel and
Swellengrebel de Graaf.

Page 195, Column 2. Line 14 -- T. alboscuteUellatus, STAGES DESCRIBED --
add P. Line 21 -- change (TL) to (?BMNH).

Page 197, Column 2. Line 16 -- T. longipalpatuS, STAGES DESCRIBED --
add ♀ and P.

Page 198, Column 1. Line 37 -- T. vanleeuweni, STAGES DESCRIBED -- add
♂ and L.

Page 199, Column 1. Line 2 -- change T. (R.) punctolateralis to
T. (R.) punctolateralis. Lines 28 - 34 -- delete T. (R.) subobscurus Lee.

Page 199, Column 2. Line 43 -- change matellica to metallica.

Page 200, Column 1. Line 26 -- change (? = chamberlaini var. metallicus)
to (? = chamberlaini).

Page 200, Column 2. Line 9 -- STAGES DESCRIBED -- add ♀, P, and L.
Lines 32 - 45 -- delete M. (M.) africana (Theobald).

Page 201, Column 1. Line 3 -- M. annulifera, STAGES DESCRIBED --
change R to L.

Page 201, Column 2. Line 25 -- M. uniformis, STAGES DESCRIBED -- Add ♂,
P, L, E.

Page 204, Column 2. Line 19 -- change U. sexauri Belkin to U. sexaureri
Belkin.

Page 206, Column 2. Line 4 -- Add A. (O.) inexpectatus from page 212,
Column 2.

Page 207, Column 2. Line 16 -- A. (F.) candidoscutellum Marks --
STAGES DESCRIBED -- Add P.

Page 209, Column 1. Lines 12, 13 -- A. (F.) poiclius -- delete poicilia, emend. by Barraund 1934, 157".

Page 209, Column 2. Line 9 -- Type Loc: Mt. Minj -- delete Mt.

Page 210, Column 1. Line 42 -- A. (P.) multiplex, STAGES DESCRIBED -- add ♂ and P.

Page 210, Column 2. Lines 14, 21, 27, 35 and 42 -- change (C.) to (G.).

Page 212, Column 2. Lines 30 - 35 -- A. inexpectatus - transfer to page 206, column 2, under Ochlerotatus.

Page 213, Column 2. Line 34 -- change A. (V.) incertus (Edwards) to A. (V.) incertus Edwards. Line 40 -- A. (V.) incertus, STAGES DESCRIBED -- delete ♂.

Page 215, Column 1. Line 32 -- A. (L.) variepictus, STAGES DESCRIBED -- delete ♂.

Page 215, Column 2. Line 19 -- A. lacuum, STAGES DESCRIBED -- add ♀ and L.

Page 219, Column 2. Line 13 -- change C. (C.) ruthi Peters to C. (C.) ruthae Peters.

Page 221, Column 1. Line 45 -- change C. fatigans. Wiedeman rejects this synonymy to C. fatigans Wiedemann, rejecting this synonymy.

Page 222, Column 2. Line 36 -- change ruthi to ruthae.

1. Introduction 2. Methodology 3. Results

4. Discussion 5. Conclusion 6. References

7. Appendix 8. Index 9. Table of Contents

10. Abstract 11. Summary 12. Key Words

13. Background 14. Objectives 15. Scope

16. Limitations 17. Significance 18. Contribution

19. Organization 20. Structure 21. Flowchart

22. Diagram 23. Figure 24. Table

Table 1. Analysis of the mosquito fauna of the Papuan Subregion

Genera & Subgenera	Total spp.	Endemic spp.	Oriental	Aust-ralian	Genera & Subgenera	Total spp.	Endemic spp.	Oriental	Aust-ralian
Bironella	7	6	0	1	Aedeomyia	1	0	1	1
Bironella	5	4	0	1	Heizmannia	1	1	0	0
Brugella	2	2	0	0	Aedes	104	65	22	21
Anopheles	33	10	17	7	Mucidus	4	1	1	2
Anopheles	10	1	8	2	Ochlerotatus	3	2	1	1
Cellia	23	9	9	5	Finlaya	39	30	3	6
Toxorhynchites					Macleaya	2	1	0	1
Toxorhynchites	5	0	4	1	Pseudokusea	3	1	0	2
Tripteroides	52	46	0	5	Lorrianea	1	1	0	0
Tripteroides	13	12	0	1	Christophersiomyia	1	1	0	0
Rachisoura	25	23	0	2	Geoskusea	5	5	0	0
Rachionotomyia	12	9	0	2	Rhinoskusea	1	0	1	1
Uncertain	2	2	0	0	Stegomyia	12	3	7	2
Malaya	3	2	1	1	Aedomorphus	5	1	4	1
Topomyia					Edwardsaedes	1	0	1	0
Suaymia	1	1	0	0	Verrallina	23	17	3	3
Ficalbia	8	5	3	3	Leptosomatomyia	3	2	0	1
Ficalbia	1	0	1	1	Armigeres	7	6	1	0
Mimomyia	4	3	1	1	Armigeres	6	5	1	0
Etorleptomyia	3	2	1	1	Nomen Dubium	1	1	0	0
Mansonia					Culex	63	40	17	11
Mansonioides	9	4	4	2	Lutzia	1	0	1	1
Coquillettidia					Neoculex	5	4	1	0
Coquillettidia	7	2	4	3	Mochtohogenes	2	1	1	0
Uranotaenia	29	21	3	5	Lophoceraomyia	23	20	1	2
Hodgesia	5	2	2	2	Culiciomyia	8	4	3	1
Orthopodomomyia	1	0	1	0	Acallyntrum	5	5	0	0
					Culex	18	5	11	7
					Nomen Dubium	1	1	0	0
					Totals	335	209	79	62

- PIP Institut Pasteur, Paris, France.
RUM Universita degli studi, Rome, Italy.
TL Type non-existent.
UQ University of Queensland, Brisbane, Queensland, Australia.
US School of Public Health and Tropical Medicine, University of Sydney, Australia.
USNM United States National Museum, Washington D.C., USA.
ZM Zoologisches Museum der Humboldt Universität, Berlin, Germany.
ZMC Zoologisk Museum, Copenhagen, Denmark.

Genus **BIRONELLA** Theobald
Subgenus **Bironella** Theobald

Lee & Woodhill 1944:41, 50-80 (bionomics and keys to adults and 4th stage larvae, Australasian Region); Penn, 1949, 3:21-3; Bonne-Wepster & Swellengrebel 1953:50-80, 473, 482 (bionomics and keys to adults

and 4th stage larvae, Indo-Australian Region); Bonne-Wepster 1963:713-19 (keys to adults and 4th stage larvae, Australasian Region).

B. (B.) bironelli (Christophers)

1924, **3**: 16 (nom. nov. for *gracilis* Theobald, non Dönitz 1902; *Anopheles*).

gracilis Theobald 1905, **3**: 69. TYPE-LOC: Muina, NE New Guinea (HNM).

walchi Soesilo 1932, **72**: 1035 (*Anopheles*). TYPE-LOC: Wadapi, Japen I., NW New Guinea (LU).

occulta Bonne-Wepster 1951, **3**: 71. TYPE-LOC: Pionnierbivak, NW New Guinea (TL).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in well shaded jungle pools and along grassy edges of slow running streams. Adults bite man occasionally; taken in light traps.

DISTRIBUTION: New Guinea, Bismarck Arch., Moluccas.

Table 2a. Conspectus of the Culicidae of the Papuan Subregion

	Papuan Subregion										Extralimital						
	Stages Described					New Guinea	Bismarck Archipelago	Solomon Is.	D'Entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental
	♂	♀	P	L	E												
BIRONELLA																	
BIRONELLA																	
bironelli	×	×		×		×	×			×		×					
brugi	×					×	⊗										
confusa	×	×	×	×		×											
papuae	×	×		×		×	⊗			×							
soesiloi	×	×	×	×		×											
BRUGELLA																	
hollandi	×	×	×	×	×	×	×	×									
travestita	×	×		×		×	×			×							
ANOPHELES																	
ANOPHELES																	
aikenii	×	×	×	×		×				×					×	×	
bancrofti	×	×	×	×	×	×	×					×					
barbirostris	×	×	×	×	×	⊗										×	
barbumbrosus	×	×	×	×		×									×	×	
insulaeflorum	×	×	×	×		⊗						×		×	×	×	
palmatus				×		⊗									×	×	
papuensis	×	×	×	×		×											
pseudobarbirostris	×	×	×	×		×				×					×	×	
separatus	×	×	×	×						×					×	×	
vanus	×	×	×	×	×	⊗									×		
CELLIA																	
amictus hilli	×	×		×	×	×						×					
annulatus	×	×		×		×											
annilipes	×	×	×	×	×	×						×					
clowi		×	×	×		×							×				
cristatus	×	×		×		⊗									×		
farauti	×	×	×	×	×	×	×	×		×		×	×				
incognitus				×		×										×	
karwari	×	×	×	×	×	×											
kochi	×	×	×	×	×					×					×	×	
koliensis	×	×	×	×		×		×									
longirostris	×	×	×	×		×	×		×								
ludlowae	×	×	×	×					×						×	×	
lungae	×	×	×	×				×									
meraukensis	×	×		×		×						×					
nataliae	×	×	×	×				×									
novaguinensis	×	×		×	×	×						×					
parangensis	×	×	×	×						×					×		
punctulatus	×	×	×	×		×	×	×		×							
solomonis	×	×	×	×	×	×		×									
subpictus	×	×	×	×	×	×	×								×	×	
tessellatus	×	×	×	×	×	×				×					×	×	
var. orientalis		×		×						×					×		
vagus	×	×	×	×	×	×				×						×	

Table 2c. Conspectus of the Culicidae of the Papuan Subregion

	Papuan Subregion											Extralimital					
	♂	♀	P	L	E	New Guinea	Bismarck Archipelago	Solomon Is.	D'Entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental
vanleeuweni	×	×		×		×											
RACHIONOTOMYIA																	
altivallis		×				×											
argenteiventris	×	×	×	×		×	×										
coheni	×	×	×	×				×									
digoelensis	×					×											
floridensis				×				×									
obscurus	×					×											
perplexus		×	×			×											
punctolateralis	×	×				×						×	×				
solomonis	×	×	×	×				×						×			
standfasti	×	×	×	×		×											
subobscurus	×	×				×							×				
Subg. uncertain																	
concinus		×				×											
subnudipennis		×				×											
MALAYA																	
genurostris	×	×	×	×		×							×			×	×
leei	×	×		×		×											
solomonis	×	×	×	×				×									
TOPOMYIA																	
SUAYMYIA																	
papuensis	×	×	×	×		×											
FICALBIA																	
FICALBIA																	
minima	×	×	×	×	×	×							×		×	×	
MIMOMYIA																	
chamberlaini	×	×	×	×		×							×		×	×	
issp. metallica													×		×	×	
flavens	×					×											
gurneyi	×	×	×	×				×									
modesta	×	×				×											
ETORLEPTIOMYIA																	
bougainvillensis	×	×	×	×				×									
elegans		×				×	×	×									
solomonis	×	×	×	×				×									
MANSONIA																	
MANSONIOIDES																	
africana	×	×	×	×		⊗											
annulifera	×	×	×	×		×											×
bonnewepsterae	×	×	×	×		×											
dives	×	×		×		×	×						×		×	×	
indiana	×	×	×	×		×									×	×	
melanesiensis	×	×	×	×				×									
papuensis	×	×				×											
septempunctata		×				×	×										
uniformis		×				×	×	×					×		×	×	

Table 2f. Conspectus of the Culicidae of the Papuan Subregion

	Stages Described					Papuan Subregion										Extralimital		
	♂	♀	P	L	E	New Guinea	Bismarck Archipelago	Solomon Is.	D'entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental	
schlosseri	×	×	×	×				×										
solomonis	×	×	×	×				×										
stanleyi	×	×	×	×		×												
subalbitarsis	×	×		×		×												
toxopeusi	×	×				×												
tsiliensis	×					×												
wallacei	×	×	×	×		×	×						×					
MACLEAYA																		
littlechildi		×				×												
tremulus	×	×	×	×		×	×						×					
PSEUDOSKUSEA																		
culiciformis		×				×	×						×					
lunulatus	×	×		×			×											
multiplex	×	×	×	×		⊗							×					
LORRIANEA																		
dasyorrrhus	×	×	×	×		×		×										
CHRISTOPHERSIOMYIA																		
chinodes	×	×						×										
GEOSKUSEA																		
becki		×						×										
fimbripes		×				×	×											
longiforceps	×	×	×	×				×										
perryi	×	×						×										
tonus	×										×							
RHINOSKUSEA																		
longirostris	×	×	×	×		×							×			×	×	
STEGOMYIA																		
aegypti	×	×	×	×	×	×							×	×	×	×	×	
albolineatus	×	×	×	×	×	×	×	×							×	×	×	
albopictus	×	×	×	×	×	×	×						×		×	×	×	
annandalei	×	×		×		×										×	×	
gardnerii	×	×		×		×					×					×		
gurneyi	×	×	×	×				×										
hebrideus	×	×	×	×				×						×				
hoguei	×	×	×	×				×										
paullusi	×	×	×	×							×						×	
quasiscutellaris	×	×	×	×			×	×										
scutellaris	×	×	×	×		×	×	×			×				×	×		
varuae	×	×	×	×			×							×				
AEDIMORPHUS																		
alboscuteallatus	×	×	×	×		×	×	×					×			×	×	
caecus	×	×		×		×									×	×	×	
inexpectatus		×				×												
lowisii	×	×									×							×
nocturnus	×	×	×	×		×								×	×	×		

× species present
 ⊗ record questionable

Table 2g. Conspectus of the Culicidae of the Papuan Subregion

	Papuan Subregion										Extralimital						
	Stages Described					New Guinea	Bismarck Archipelago	Solomon Is.	D'entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental
	♂	♀	P	L	E												
EDWARDSAEDES																	
imprimens	×	×	×	×		×	×	×								×	×
VERRALLINA																	
azureosquamatus		×				×											
bifoliatus	×					×											
carmenti	×	×	×	×		×	×	×		×		×					
ceramensis	×									×							
cuccioi	×	×	×	×				×									
foliformis	×	×				×											
funereus	×	×	×	×		×	×	×				×					
incertus		×				×										×	
leilae	×					×											
lineatus	×	×	×	×		×	×	×		×			×			×	
mccormicki	×	×	×	×				×									
milnensis	×					×											
multifolium	×					×											
neomacrodixoa	×	×				×											
panayensis	×	×				×				×						×	
parasimilis	×	×		×		×											
quadrifolium	×					×											
quadrispinatus	×	×				×											
reesi	×	×				×											
sentanius	×	×		×		×											
similis	×	×				×	×			×		×					
simplus	×					×											
trispinatus	×	×				×											
LEPTOSOMATOMYIA																	
aurimargo	×	×	×	×		×						×					
medialis	×	×				×											
variepictus	×	×				×											
ARMIGERES																	
ARMIGERES																	
breinli	×	×	×	×		×	×	×									
denbesteni	×	×		×		×				×							
lacuum	×					×	×										
malayi	×	×	×	×		×				×						×	×
milnensis	×	×		×		×											
papuensis	×	×	×	×		×											
CULEX																	
LUTZIA																	
halifaxii	×	×	×	×		×	×	×				×	×		×	×	
NEOCULEX																	
brevipalpis	×	×		×		×	×									×	×
caeruleus	×	×		×		×											
crassistylus	×					×											
leonardi	×	×	×	×				×									
pedicellus	×					×											

× species present
 ⊗ record questionable

Table 2h. Conspectus of the Culicidae of the Papuan Subregion

× species present
 ⊗ record questionable

	Stages Described					Papuan Subregion										Extralimital		
	♂	♀	P	L	E	New Guinea	Bismark Archipelago	Solomon Is.	D'entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental	
MOCTHTHOGENES																		
cataractarum	×	×				×	×											
malayi	×	×		×		×										×	×	
LOPHOCERAOMYIA																		
atracus	×						×											
becki	×	×	×	×				×										
bergi	×	×	×	×				×										
christiani	×	×	×	×		×												
cylindricus	×	×	×	×			×						×					
digoelensis	×	×				×												
franclemonti	×	×	×	×				×										
fraudatrix	×	×				×	×						×					
hurlbuti	×	×	×	×				×										
kuchnsi	×	×		×		×												
laffooni	×	×		×				×										
lairdi	×	×	×	×				×										
leei	×	×		×		×												
marksae	×					×												
ornatus	×	×		×		×	×											
oweni	×	×	×	×				×										
perryi	×	×	×	×				×										
petersi	×	×		×		×												
pseudornatus	×	×				×												
solomonis	×	×	×	×				×										
uniformis	×	×	×	×		×											×	
walukasi	×	×	×	×				×										
winkleri	×	×	×	×				×										
CULICIOMYIA																		
fragilis	×	×	×	×		×		×								×	×	
fuscincinctus	×					×												
nailoni	×	×		×		×												
nallidothorax	×	×	×	×	×	×				×						×	×	
papuensis	×	×	×	×		×	×	×										
pullus	×	×	×	×		×	×	×		×		×						
ruthi	×	×							×									
spathifurca	×	×		×		×												
ACALLYNTRUM																		
belkini	×	×	×	×				×										
bicki	×	×	×	×		×												
binigrolineatus	×	×	×	×		×												
pallidiceps	×					×												
perkinsi	×	×	×	×				×										
CULEX																		
alis	×	×				×				×								
annulirostris	×	×	×	×		×						×				×		
bihamatus	×										×							
bitaeniorhynchus	×	×	×	×		×						×	×	×	×	×	×	

Table 2i. Conspectus of the Culicidae of the Papuan Subregion

	Stages Described					Papuan Subregion							Extralimital							
	♂	♀	P	L	E	New Guinea	Bismarck Archipelago	Solomon Is.	D'entrecasteaux Is.	Louisiade Archipelago	Moluccas	Timor	Australian	South Pacific	Melanesia	Indomalayan	Oriental			
gelidus	×	×	×	×		×												×	×	
litoralis	×	×		×		×								×				×	×	
mimulus	×	×		×		×							×					×	×	
miraculosus	×	×		×		×														
omani	×	×	×	×				×												
pseudovishnui	×	×		×															×	×
quinquetasciatus	×	×	×	×		×							×	×	×			×	×	
sinensis	×	×	×	×	×	×													×	×
sitiens	×	×	×	×		×							×	×	×			×	×	
solitarius	×	×		×		×													×	
squamosus	×	×	×	×		×		×			×		×							
vincinus	×	×				×							×							
whitmorei	×	×	×	×		×													×	×
whittingtoni				×				×												
ventralis *		×				×														

* Nomen Dubum

B. (B.) brugi Soesilo & Van Slooten
1931, **71**: 1256. TYPE-LOC: Boemi district or Hollandia, NW New Guinea (BMNH).
STAGES DESCRIBED: ♂.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea, ? Bismarck Arch.

B. (B.) confusa Bonne-Wepster
1951, **3**: 67. TYPE-LOC: Boemi district or Hollandia, NW New Guinea (BMNH).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea.

B. (B.) papuae (Swellengrebel & Swellengrebel de Graaf)
1919 (1920), **9**: 3 (*Stethomyia aikenii* var.). TYPE-LOC: W New Guinea (TL).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae taken in slowly running streams, also along edges of well-shaded, fast streams and in exposed or shaded jungle pools. One ♀ has been recorded biting man.
DISTRIBUTION: New Guinea, Moluccas, ? Bismarck Arch.

B. (B.) soesiloi (Strickland & Choudhury)
1931, **12** (*Anopheles*). TYPE-LOC: Manokwari, NW

New Guinea (LU).

derooki Soesilo & Van Slooten 1931, **71**: 1256.
TYPE-LOC: Boemi district or Hollandia, NW New Guinea (BMNH).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae collected in well-shaded jungle pools and along grassy edges of streams.
DISTRIBUTION: New Guinea.

Subgenus **Brugella** Edwards

B. (B.) hollandi Taylor
1934, **59**: 229. TYPE-LOC: Kavieng, New Ireland, Bismarck Arch. (US).
STAGES DESCRIBED: ♂, ♀, P, L, E.
BIONOMICS: Larvae breed in shady, undisturbed, natural bodies of water, i.e. streams, swamps, coastal lagoons; also may be found in disturbed areas or even in artificial containers.
DISTRIBUTION: Bismarck Arch., New Guinea, Solomon Is.

B. (B.) travestita (Brug)
1928, **7**: 921 (*Anopheles*). TYPE-LOC: Piroe, Ceram (LU).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae in partially shaded swamps and in pools in sago swamps; also in shaded pot holes of creeks.

DISTRIBUTION: Moluccas, New Guinea, Bismarck Arch.

Genus **ANOPHELES** Meigen

Lee & Woodhill 1944:1-49, 81-99 (bionomics and keys to adults and 4th stage larvae, Australasian area); Penn 1949, 3:11 (key to some New Guinea *Anopheles* pupae); Bonne-Wepster & Swellengrebel 1953:1-49, 81-504 (bionomics and keys to adults and 4th stage larvae, Indo-Australian Region); Peters 1962, 31:168 (key to pupae of Anophelini, New Guinea); Bonne-Wepster 1963, 713-19 (keys to adults and 4th stage larvae, Australasian Region).

Subgenus **Anopheles** Meigen

A. (A.) aitkenii James

1903, 3: 22. TYPE-LOC: Karwar, Bombay (near Goa Frontier), India (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae in shaded breeding places, especially in vegetation at edges of swift, small streams; also in seepage springs, swamps, rivers and rock pools. Adults shy, rarely found in dwellings; recorded biting man and feeding on a bull.

DISTRIBUTION: India, Nepal, Ceylon, Andaman Is., Thailand, China, Philippines, Malaya, New Guinea, ? Indonesia, Moluccas.

A. (A.) bancrofti Giles

1902, 511. TYPE-LOC: Burpengary, Q., Australia (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae breed in shaded swampy areas and, in SW New Guinea, in old cut off courses of the Digoel R. where reeds, algae and *Azolla* (water fern) give shade and shelter. Adults readily bite man indoors and out.

DISTRIBUTION: Australia, New Guinea, Bismarck Arch.

A. (A.) barbirostris Van der Wulp

1884, 6: 248. TYPE-LOC: Mt Ardjoeno, E Java (LM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae usually breed in well-shaded clear water, slowly running streams, ponds, swamps, ditches and wells with much vegetation. Adults are found in houses and cattle sheds; occasionally feed on man.

DISTRIBUTION: Oriental Region, ? New Guinea.

A. (A.) barbumbrosus Strickland & Choudhury

1927, 18 (nom. nov. for *pallidus* Swellengrebel, non Theobald 1901).

pallidus Swellengrebel 1919, 59: 8 (*myzorhyuchus barbirostris* var.). TYPE-LOC: "Netherlands East Indies" (TL).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in slow, grass-fringed streams and springs; also in partially shaded stagnant water.

DISTRIBUTION: Indonesia, Thailand, Malaya, New Guinea, Formosa.

A. (A.) insulaeflorum (Swellengrebel & Swellengrebel de Graaf)

1919 (1920), 6: 24, 9: 2 (*Stethomyia aitkenii* var.).

TYPE-LOC: Noesa Kambangan, S Java (TL).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in shaded breeding places with abundant vegetation, along edges of streams, rivers, in swamps, seepage springs, and rock pools.

DISTRIBUTION: Indonesia, Philippines, Formosa, Malaya, Ceylon, India, Burma, Thailand.

A. (A.) palmatus (Rodenwaldt)

1926, 66: 794 (*Stethomyia aitkenii* var.). TYPE-LOC: Sidoegoeng, Preanger Regencies, Java (LU).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Larvae in shaded breeding sites with abundant vegetation, along edges of streams, rivers, in swamps, seepage pools, and rock holes.

DISTRIBUTION: Indonesia, Thailand, Malaya, ? New Guinea.

A. (A.) papuensis Dobrotworsky

1957, 82: 185. TYPE-LOC: Minj, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in a semi-rock pool covered by pit-pit and in a clear, well-shaded stream-side pool with some emergent vegetation. Adults reared.

DISTRIBUTION: New Guinea.

A. (A.) pseudobarbirostris Ludlow

1902, 10: 129. TYPE-LOC: Hagonoy, Bulacan, Luzon, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breeding in sunlit or well-shaded clear pool with abundant aquatic vegetation.

DISTRIBUTION: Philippines, New Guinea, Moluccas, Celebes, Ceylon.

A. (A.) separatus (Leicester)

1908, 36 (*Myzorhynchus*). TYPE-LOC: Kuala Lumpur, (Selangor), Malaya (BMNH).

snijdersi Swellengrebel, 1921, 15: 114 (*Myzorhynchus sinensis* var.). TYPE-LOC: Medan, Sumatra (TL).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in shaded breeding sites in streams, ponds, swamps, pools and drains.

DISTRIBUTION: Malaya, Sumatra, Borneo, Moluccas, Thailand.

A. (A.) vanus Walker

1859, **4**: 91. TYPE-LOC: Makassar, Celebes (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae found in many breeding sites, even man made. Adults anthropophilic.

DISTRIBUTION: Celebes, ? New Guinea.

Subgenus **Cellia** Theobald

A. (C.) amictus sp. **hilli** Woodhill & Lee

1944, **69**: 63. TYPE-LOC: Adelaide R., N. T., Australia (CSIR).

STAGES DESCRIBED: ♂, ♀, L, E.

BIONOMICS: Larvae taken in both natural and man-made breeding sites and in fresh or brackish water. Breeding sites may be partially shaded or exposed to full sunlight. Adults bite man readily and are found resting in houses.

DISTRIBUTION: Australia, New Guinea.

A. (C.) annulatus Rook

1930 (1929), (*longirostris* var.). TYPE-LOC: Upper Digoel, SW New Guinea (LU).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in a small stream originating in a jungle swamp.

DISTRIBUTION: New Guinea.

A. (C.) annulipes Walker

1856, **1**: 433. TYPE-LOC: Van Diemen's Land (Tasmania), Australia (BMNH).

musivus Skuse 1889, **3**: 1754. TYPE-LOC: Elizabeth Bay, nr Sydney, Mt Kembla, and Illawara, N. S. W., Australia (MM).

mastersi Skuse 1889, **3**: 1757. TYPE-LOC: Blue Mts, N. S. W., Australia (MM).

perplexus Taylor 1943, **68**: 153. TYPE-LOC: Adelaide R., N. T.; Berner Cr., Watten, and Cairns, Q., Australia (US).

derricki Taylor 1943, **68**: 155. TYPE-LOC: Irvinebank, Q., Australia (US).

persimilis Taylor 1943, **68**: 155. TYPE-LOC: Irvinebank, Q., Australia (US).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae only breed in ground pools of limited depth, with or without suspended clay and in rock pools with green algae, also found in wide variety of other breeding sites. Adults feed readily on man and rest indoors.

DISTRIBUTION: Australia, New Guinea.

A. (C.) clowi Rozeboom & Knight

1946, **32**: 114. TYPE-LOC: Humboldt Bay, Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♀, P, L.

BIONOMICS: Larva found in road rut, type ♀ bred.

DISTRIBUTION: New Guinea.

A. (C.) cristatus King & Baisas

1936, **38**: 80. TYPE-LOC: Titunod, Kolombungan, Lanae, Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in small rock holes in dense shade.

DISTRIBUTION: Philippines, ? New Guinea.

A. (C.) farauti Laveran

1902, **54**: 908. TYPE-LOC: Faureville, Vate (Efate), New Hebrides Is. (PIP).

moluccensis Swellengrebel & Swellengrebel de Graaf 1919–(1920), **9**: 1 (*annulipes* var.) also 1920, **60**: 29 (*annulipes* var.). TYPE-LOC: Several localities in Moluccas and W New Guinea (Ternati ?) (TL).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larva breeds in any natural or artificial water collection provided it is not shaded. Adults rest in and outdoors,, readily bite man.

DISTRIBUTION: New Hebrides, Australia, Solomon Is., Bismarck Arch., New Guinea, Moluccas, Santa Cruz Is., D'Entrecasteaux Is.

A. (C.) incognitus Brug

1931, **2**(71): 136. TYPE-LOC: Merauke, SW New Guinea (LU).

STAGES DESCRIBED: L.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (C.) karwari (James)

1903, **3**: 102 (*Nyssorhynchus*). TYPE-LOC: Karwar, Bombay, India (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae breed in small streams, springs and seepage water along streams and irrigation canals of rice fields. Adults zoophilic and found in cow sheds, also in houses.

DISTRIBUTION: Oriental Region, New Guinea.

A. (C.) kochi Dönitz

1901, **18**: 36. TYPE-LOC: Padang (Tapanuli), Sumatra (ZM).

ocellatus Theobald 1901, **1**: 174. TYPE-LOC:

Taipang, Perak, Malaya (BMNH).

flava Ludlow 1908, **40**: 32 (*Cellia*). TYPE-LOC: Camp Wilhelm, (Quezon, Luzon), Philippines (USNM).

halli James 1910, **1**: 33 (*Christophersia*). TYPE-LOC: Sylhet, Assam, India (IM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae prefer small, shallow, often muddy collections of water in the open, with or without grass; also along grassy stream edges, springs, sugar cane fields and fresh water fish ponds. Adults rest in houses, stables, and cow sheds; prefer buffalo but will bite man.

DISTRIBUTION: Sumatra, Java, Borneo, Bali, Lombok, ? Flores, Ambon, Moluccas, Oriental Region.

A. (C.) koliensis Owen

1945, **31**: 236. TYPE-LOC: Koli area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in exposed temporary pools in grassland and in pools along edge of jungle, usually associated with *farauti*. Adults strongly anthropophilic.

DISTRIBUTION: Solomon Is., New Guinea.

A. (C.) longirostris Brug

1928, **68**: 278. TYPE-LOC: Boven-Digoel SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected near river banks, in swamps, overgrown back waters, seepage pools, wheel ruts and pig wallows; usually in shaded areas. Adults bite man but are primarily zoophilic.

DISTRIBUTION: New Guinea, Moluccas, Bismarck Arch., D'Entrecasteaux Is.

A. (C.) ludlowae (Theobald)

1903, **3**: 42 (*Myzomyia* as *ludlowii*; emend. by Stone 1957, 333). TYPE-LOC: Luzon, Philippines (BMNH).

formosensis Koizumi 1917, **29**: 354 (as var.).

TYPE-LOC: Port Ari, Ako Prefecture, Formosa (LU).

hatorii Koizumi 1920, **8**: 24. TYPE-LOC: Formosa (LU).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in clear, fresh water of shaded or exposed slow streams under small pieces of rock (Celebes, Ceram); also in pools or stagnant water in rivers. Adults have been captured indoors.

DISTRIBUTION: Philippines, Hainan, Formosa, Borneo, Moluccas.

A. (C.) lungae Belkin & Schlosser

1944, **34**: 269. TYPE-LOC: Tassafaronga Swamp,

Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in seepage areas, along stream margins, in pot and rock holes, dense jungle swamps, temporary pools, and pig wallows; shade preferred, and water is usually clear and cool. Larvae and, generally, pupae were observed resting on leaves or on the bank surrounded by thin film of water. Adults found resting in partial shade on jungle tree trunks, also under logs, inside crates, boxes, oildrums, etc.

DISTRIBUTION: Solomon Is.

A. (C.) meraukensis Venhuis

1932, **72**: 1040. TYPE-LOC: Merauke, SW New Guinea (GLB).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae originally taken in shallow pools in swamp with algae growth on bottom, open areas; also found in rice fields.

DISTRIBUTION: New Guinea, Australia.

A. (C.) nataliae Belkin

1945, **31**: 315. TYPE-LOC: Natalia Springs, Poha R. Vy., Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in densely shaded springs, seepage areas, and small creeks. Adults reared.

DISTRIBUTION: Solomon Is.

A. (C.) novaguinensis Venhuis

1933, **73**: 203 (*punctulatus* var.). TYPE-LOC: Between Kakajoe and Donggeap on Merauke R., SW New Guinea (GLB).

brienli Taylor 1943, **68**: 156. TYPE-LOC: Irvinebank, Q., Australia (US).

STAGES DESCRIBED: ♂, ♀, L, E.

BIONOMICS: Larvae found in small pool in a sago wood; also in clear, shallow, sunlit water with abundant algae growth. ♀♀ bit freely and will enter houses.

DISTRIBUTION: New Guinea, Australia.

A. (C.) parangensis (Lundlow)

1914, **21**: 129 (*Myzomyia*). TYPE-LOC: Parang, (Cotabato), Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in muddy puddles or pools without vegetation to clear pools with much algae.

DISTRIBUTION: Philippines, Borneo, ? Moluccas.

A. (C.) punctulatus Dönitz

1901, **18**: 36. TYPE-LOC: Stephansort, New Guinea, and Herbertshohe, Bismarck Arch. (ZM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in many types of exposed sunny water collections, with or without vegetation, also breeds in streams. Adults nocturnal and readily bite man, also rest indoors.

DISTRIBUTION: New Guinea, Bismarck Arch. Solomon Is., Moluccas.

A. (C.) solomonis Belkin, Knight, & Rozeboom 1945, **31**: 247-251. TYPE-LOC: Poha R. tributary, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae breed chiefly in deeply shaded undisturbed jungle streams in coral foothills, also taken in blocked pools of small streams, pot holes, coral depressions above streams, and temporary pools.

DISTRIBUTION: Solomon Is.

A. (C.) subpictus Grassi

1899, **8**: 101. TYPE-LOC: India (RUM).

rossi Giles 1899, **Z**: 63. TYPE-LOC: Calcutta (West Bengal), India (BMNH).

error Theobald 1903, **3**: 353 (*Aldrichia*). TYPE-LOC: Calcutta (west Bengal), India (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae collected in excavations, borrow pits, buffalo wallows, rice fields, drains, pools, water tanks, etc; may be found in polluted water. ♀♀ apparently do not prefer human blood (Indonesia), but can be found indoors.

DISTRIBUTION: India, Pakistan, Afghanistan, Iran, Ceylon, Nepal, Burma, Thailand, Malaya, China, Indonesia, Maldives Is., Bismarck Arch., New Guinea.

A. (C.) tessellatus Theobald

1901, **1**: 75. TYPE-LOC: Taipang, Perak, Malaya (BMNH).

formosae Hatori 1901, 5534:275. TYPE-LOC: Taihoku, Kielun, and Tansui, Formosa (LU).

deceptor Dönitz 1902, **41**: 60. TYPE-LOC: Sumatra (TL).

thorntonii Ludlow 1904, **36**: 69. TYPE-LOC: Cottabato (Cotabato), Mindanao, Philippines (USNM).

ceylonica Newstead & Carter 1910, **4**: 377 (*Dactylo-myia*). TYPE-LOC: Trincomalee, Ceylon (BMNH).

kinoshitai Koizumi 1917, **29**: 135. TYPE-LOC: Hokuto, nr Taihoku, Formosa (LU).

taiwanensis Koizumi 1917, **29**: 135. TYPE-LOC: Garden of Central Inst., Formosan Government and Banshoryo, Ako Pref., Formosa (LU).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae collected in rice fields, in shaded jungle pools, and along grassy margins of streams or swamps; also in small brackish pools. ♀♀ attack man but prefer buffalo; adults taken on river banks.

DISTRIBUTION: Oriental Region, Indonesia, Moluccas, New Guinea.

VAR. A. (C.) orientalis Swellengrebel and Swellengrebel de Graaf

1919 (1920): 3 (*punctulata* var.). TYPE-LOC: N. Celebes, Moluccas, and E Java (TL).

STAGES DESCRIBED: ♀, L.

BIONOMICS: Larvae found in ditches and pools with grassy vegetation and clear water; also along grassy stream margins, exposed or shaded.

DISTRIBUTION: Celebes, Moluccas, Java.

A. (C.) vagus Dönitz

1902, **41**: 80. TYPE-LOC: Fort de Kock, (West Coast), Sumatra; Banjoe-Biroe, Java; and numerous other Indonesian localities (ZM).

formosaensis II Tsuzuki 1902, **75**: 28. TYPE-LOC: Formosa (LU).

immaculata James 1902, **2**: 35. TYPE-LOC: Ennour, Madras, India (BMNH).

immaculatus Theobald 1903, **3**: 23. TYPE-LOC: "Evidently from Goa, India" (BMNH, same type as for *immaculata* James).

trimaculatus Tsuzuki 1907, **25**: 549 (*formosaensis II* var.). TYPE-LOC: Formosa (LU).

flava Swellengrebel 1917, **57**: 807 (*Myzomyia indefinita* var.). TYPE-LOC: Soerabaia, Java (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae found almost anywhere but generally avoiding salt water. ♀♀ primarily zoophilic, adults found in houses and cattle dwellings, also found resting on stream banks.

DISTRIBUTION: Oriental Region, New Guinea, Moluccas.

Genus **TOXORHYNCHITES** Theobald

Subgenus **Toxorhynchites** Theobald

T. (T.) amboinensis (Doleschall)

1857, **14**: 381 (*Culex*). TYPE-LOC: Amboina Is., Moluccas (NMW).

lewaldii Ludlow 1904, **36**: 233 (*Megarhinus*).

TYPE-LOC: Salong, Guimaras Is., (Iloilo), Philippines (USNM).

argenteotarsis Ludlow 1906, **38**: 367. TYPE-LOC: Margosatubig, (Zamboanga), Mindanao, Philippines (USNM).

grata Banks 1906, **1**: 780 (*Worcesteria*). TYPE-LOC: Bago, Hacienda "Louisiana", Mailum;

Negros Occidental, and Cebu, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P.

BIONOMICS: Unknown.

DISTRIBUTION: Moluccas, Java, New Guinea, Philippines, Thailand.

T. (T.) inornatus (Walker)

1865, **8**: 102 (*Megarhina*). TYPE-LOC: New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in small artificial or natural containers and are predaceous on other mosquito larvae.

DISTRIBUTION: New Guinea, Australia, Bismarck Arch., Fiji Is.

T. (T.) speciosus (Skuse)

1889, **3**(2): 1722 (*Megarhina*). TYPE-LOC: Port Denison, Q., Australia (MM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae breed in natural and artificial containers—tree holes, tanks, barrels, and small wells; they are predaceous on other mosquito larvae.

DISTRIBUTION: Australia, Singapore, New Guinea, Fiji Is.

T. (T.) splendens (Wiedemann)

1819, **1**(3): 2 (*Culex*). TYPE-LOC: Java (ZMC and NMW)

regius Tennent 1859, **1**: 268 (*Culex*). TYPE-LOC: Kandy, (central), Ceylon (TL).

sikkimensis Giles 1901, **13**: 604 (*Megarhina*). TYPE-LOC: Sikkim, India (BMNH).

gilesii Theobald 1901, **1**: 227 (*Megarhinus*). TYPE-LOC: Upper Burma, and Sikkim, India (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae breed in natural and artificial containers and prey on other mosquito larvae.

DISTRIBUTION: Oriental Region, Indonesia, New Guinea, Fiji Is., Rotuma I., Samoa, Hawaiian Is.

T. (T.) splendens ssp. **subulifer** (Doleschall)

1857, **14**: 382 (*Culex*; as sp.). TYPE-LOC: Amboina I., Moluccas (NMW).

immisericors Walker 1860, **4**: 90 (*Megarhina*).

TYPE-LOC: Makassar, Celebes (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Moluccas, Borneo, New Guinea.

Genus **TRIPTEROIDES** Giles

Lee 1946, **70**: 219–75 (bionomics, descriptions, and

keys to adults and 4th stage larvae, Australasian Region); Belkin 1950, **100**: 201–74 (bionomics, descriptions, and keys to adults, ♂ genitalia, pupae, and 4th instar larvae, Solomon Is.); Peters 1959, **28**: 135–54 (distribution records, additions to larva and adult key of Lee 1946, and key to pupae, New Guinea); Belkin 1962, **1**: 487–88, 495–526 (keys to adults, ♂ genitalia, larvae & pupae, South Pacific); Peters 1963, **32**: 89–100 (key to pupae, New Guinea, Solomon Is.).

Subgenus **Tripteroides** Giles

T. (T.) alboscuteclatus Lee

1946, **70**: 235. TYPE-LOC: Hollandia, NW New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in log hole in sago swamp and tree holes in rainforest.

DISTRIBUTION: New Guinea.

T. (T.) bimaculipes (Theobald)

1905, **3**: 114 (*Phoniomyia*). TYPE-LOC: Moroka, SE New Guinea, and Friedrich-Wilhelmshafen, NE New Guinea (TL).

ornata Taylor 1914, 189 (*Stegomyia*). TYPE-LOC: Milna Bay, SE New Guinea (LU).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae breed in hollow logs, tree holes, coconut shells, and artificial containers, in sago swamps and rainforests. The ♀ bites freely throughout the day in scrub and around jungle margins.

DISTRIBUTION: New Guinea, Moluccas, Bismarck Arch.

T. (T.) binotatus Belkin

1950, **100**: 264. TYPE-LOC: Bougainville, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures generally taken in tree holes, occasionally in leaf axil of taro, ground pools and artificial containers.

DISTRIBUTION: Solomon Is.

T. (T.) brevipalpis Brug

1934, **25**: 508. TYPE-LOC: Warasiwa, Oewin, or Hoelong, Ceram, Moluccas (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in bamboo stumps and cut bamboo.

DISTRIBUTION: Moluccas, New Guinea.

T. (T.) distigma Edwards

1925, **15**: 257 (*Rachionotomyia*). TYPE-LOC: Tulagi, Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures collected in tree hole.

DISTRIBUTION: Solomon Is.

T. (T.) elegans Brug

1934, **25**: 507. TYPE-LOC: Torpedoboot R., NW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Adults taken in light traps.

DISTRIBUTION: New Guinea.

T. (T.) lipovskyi Belkin

1950, **100**: 256. TYPE-LOC: Sprague Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes, coconut shells, bamboo, frond axils of sago palm, and sometimes in artificial containers

DISTRIBUTION: Solomon Is.

T. (T.) littlechildi (Edwards)

1930, **21**: 544 (*Rachionotomyia*). TYPE-LOC: Tauri R., Tapala, SE New Guinea (BMNH).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

T. (T.) lorengau Peters

1963, **32**: 67. TYPE-LOC: Lorengau R., Manus I. (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in tree hole along shaded riverside, adults reared.

DISTRIBUTION: Bismarck Arch.

T. (T.) nissanensis Lee

1946, **70**: 239. TYPE-LOC: Nissan I., Green Is., Bismarck Arch. (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in tree holes.

DISTRIBUTION: Bismarck Arch.

T. (T.) novohanoverae Peters

1963, **32**: 63. TYPE-LOC: Noipuas, New Hanover, Bismarck Arch. (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in tree holes and bamboo stumps; adults reared.

DISTRIBUTION: Bismarck Arch.

T. (T.) quasiornatus (Taylor)

1915, **40**: 177 (*Stegomyia*). TYPE-LOC: Innisfail, Q., Australia (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes.

DISTRIBUTION: Australia, ? Bismarck Arch., ? New Guinea.

T. (T.) splendens Lee

1946, **70**: 233. TYPE-LOC: Dobodura, SE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

Subgenus **Rachisoura** Theobald

T. (R.) adentata Assem

1959, **102**: 48. TYPE-LOC: Cyclops Mts, NW New Guinea (LM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in climbing *Nepenthes* sp. in virgin rainforest at 457 m; adults reared.

DISTRIBUTION: New Guinea.

T. (R.) bisquamatus Lee

1946, **70**: 252. TYPE-LOC: Hollandia, NW New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in pitcher plants, including climbing *Nepenthes*; adults reared.

DISTRIBUTION: New Guinea.

T. (R.) brevirhynchus Brug

1934, **25**: 503. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in *Nepenthes*.

DISTRIBUTION: New Guinea, Australia.

T. (R.) confusus Lee

1946, **70**: 251. TYPE-LOC: Milne Bay, SE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in artificial containers (tins) and coconut shells; adults reared.

DISTRIBUTION: New Guinea.

T. (R.) cuttsi Assem

1959, **102**: 46. TYPE-LOC: Homejo, Kemabu Vy, NW New Guinea (LM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in *Nepenthes* sp. in moss forest (1,829 m). ♀♀, presumably this species, reported to be annoying daytime biters.

DISTRIBUTION: New Guinea.

T. (R.) exnebulis Bonne-Wepster

1948, **19**: 308. TYPE-LOC: Mist Camp, NW New Guinea (LM).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

- T. (R.) felicitatis** Bonne-Wepster
1948, **19**: 307. TYPE-LOC: Mist Camp, NW New Guinea (LM).
STAGES DESCRIBED: ♀.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea.
- T. (R.) filipes** (Walker)
1861, **5**: 229 (*Culex*). TYPE-LOC: Dorey, NW New Guinea (BMNH).
sylvestris Theobald 1910, **5**: 208 (*Rachisoura*).
TYPE-LOC: Kuranda, Q., Australia (BMNH).
hilli Taylor 1914, **39**: 456 (*Stegomyia*). TYPE-LOC: Melville I., Australia (LU).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae breed in pitcher plants, including climbing *Nepenthes* spp., generally associated with grassy swamps. Adults recorded biting.
DISTRIBUTION: New Guinea, Australia, Bismarck Arch.
- T. (R.) flabelliger** Bonne-Wepster
1948, **19**: 308. TYPE-LOC: Mist Camp, NW New Guinea (LM).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae, presumably this species, were collected in climbing *Nepenthes* species in mossy forest, 1,829 m.
DISTRIBUTION: New Guinea.
- T. (R.) fuliginosus** Lee
1946, **70**: 248. TYPE-LOC: Hollandia, NW New Guinea (CSIR).
STAGES DESCRIBED: ♂.
BIONOMICS: Adult taken in flight at buttress of a large rainforest tree.
DISTRIBUTION: New Guinea.
- T. (R.) fuscipleura** Lee
1946, **70**: 246. TYPE-LOC: Doromena, near Hollandia, NW New Guinea (CSIR).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae bred from leaf axils of taro and from a small stump hole.
DISTRIBUTION: New Guinea.
- T. (R.) kingi** Lee
1946, **70**: 256. TYPE-LOC: Mt Dafonsero, NW New Guinea, 1,230–1,450 m (CSIR).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae taken in pitcher plants. Females recorded biting during daytime.
DISTRIBUTION: New Guinea.
- T. (R.) latisquama** (Edwards)
1927, **15**: 354 (*Rachionotomyia*). TYPE-LOC: Nassau Mts, 1,500 m, NW New Guinea (BMNH).
STAGES DESCRIBED: ♀.
BIONOMICS: ♀ collected biting.
DISTRIBUTION: New Guinea.
- T. (R.) leei** Peters
1959, **28**: 141. TYPE-LOC: Maprik, Sepik Dist., NE New Guinea (CSIR).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae taken in axils of *Curcuma* sp. and in tree holes. Adults reared.
DISTRIBUTION: New Guinea.
- T. (R.) longipalpatus** Lee
1946, **70**: 249. TYPE-LOC: Hollandia, NW New Guinea (CSIR).
STAGES DESCRIBED: ♂, L.
BIONOMICS: Larvae found in cut bamboo.
DISTRIBUTION: New Guinea.
- T. (R.) mathesoni** Belkin
1950, **100**: 219. TYPE-LOC: Matanikau R. Vy, Guadalcanal, Solomon Is. (USNM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae collected in leaf axils of wild and cultivated taro; they frequently prey upon larvae of *Uranotaenia quadrimaculata*.
DISTRIBUTION: Solomon Is.
- T. (R.) pallidus** Lee
1946, **70**: 255. TYPE-LOC: Hollandia, NW New Guinea (CSIR).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae breed in climbing pitcher plants. Adults were collected biting in sago swamps and rainforest.
DISTRIBUTION: New Guinea.
- T. (R.) papua** Brug
1934, **25**: 505. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).
STAGES DESCRIBED: ♂, ♀.
BIONOMICS: ? nepenthicolous species.
DISTRIBUTION: New Guinea.
- T. (R.) pilosus** Lee
1946, **70**: 255. TYPE-LOC: Mt Dafonsero, 1,250 m, nr Hollandia, NW New Guinea (CSIR).
STAGES DESCRIBED: ♀.
BIONOMICS: The type was bred from a larva taken in a pitcher plant, the larva skin was subsequently lost.
DISTRIBUTION: New Guinea.

- T. (R.) plumiger** Bonne-Wepster
1948, **19**: 310. TYPE-LOC: Rattan Camp, NW New Guinea (LM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea.
- T. (R.) simplex** Brug
1934, **25**: 507. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).
STAGES DESCRIBED: ♂.
BIONOMICS: ? nepenthicolous species.
DISTRIBUTION: New Guinea.
- T. (R.) stonoi** Belkin
1950, **100**: 228. TYPE-LOC: Poha R. Vy, Guadalcanal, Solomon Is. (USNM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae taken in tree holes, bamboo stubble and coconut shells, husks and fallen spathes; also found in small artificial containers.
DISTRIBUTION: Solomon Is.
- T. (R.) tityae** Sloof
1961, **21**: 22. TYPE-LOC: Wasirawa R., Arfak Mts, Vogelkop Peninsula, NW New Guinea (BMNH).
STAGES DESCRIBED: ♀.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea.
- T. (R.) torokinae** Belkin
1950, **100**: 236. TYPE-LOC: Torokina, Bougainville, Solomon Is. (USNM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae found in tree holes.
DISTRIBUTION: Solomon Is.
- T. (R.) vanleeuweni** (Edwards)
1927, **15**: 355 (*Rachionotomyia*). TYPE-LOC: Rouffaer R., tributary of Mamberano R., NW New Guinea (BMNH).
STAGES DESCRIBED: ♀.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea
- Subgenus **Rachionotomyia** Theobald
- T. (R.) altivallis** Bonne-Wepster
1948, **19**: 311. TYPE-LOC: Moss Forest Camp, 2,800 m, nr L. Habbema, NW New Guinea. (LM).
STAGES DESCRIBED: ♀.
BIONOMICS: Unknown.
DISTRIBUTION: New Guinea.
- T. (R.) argenteiventris** (Theobald)
1905, **3**: 118 (*Polylepidomyia*). TYPE-LOC: Puumomu R., SE New Guinea (HNM).
ater Taylor 1914, 190 (*Stegomyia*). TYPE-LOC: Lakekamu Gold Field, SE New Guinea (US).
brugi Edwards 1927, **15**: 356 (*Rachionotomyia*).
TYPE-LOC: Nessau Mts, NW New Guinea (BMNH).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae found in artificial containers (tins), coconuts and tree holes. ♀♀ collected biting. Mar., Apr., Sept., Oct.
DISTRIBUTION: New Guinea, Bismarck Arch.
- T. (R.) coheni** Belkin
1950, **100**: 250. TYPE-LOC: White R. Vy, Guadalcanal, Solomon Is. (USNM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae known from tree holes.
DISTRIBUTION: Solomon Is.
- T. (R.) digoelensis** Brug
1934, **25**: 506. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).
STAGES DESCRIBED: ♂.
BIONOMICS: A nepenthicolous species.
DISTRIBUTION: New Guinea.
- T. (R.) floridensis** Belkin
1950, **100**: 269. TYPE-LOC: Halavo, Florida, Solomon Is. (USNM).
STAGES DESCRIBED: L.
BIONOMICS: Larvae known only from axil of wild banana.
DISTRIBUTION: Solomon Is.
- T. (R.) microlepis** (Edwards)
1927, **15**: 353 (*Rachionotomyia*). TYPE-LOC: Nassau Mts, New Guinea (BMNH).
STAGES DESCRIBED: ♂, ♀, L,
BIONOMICS: ♀♀ collected biting during daytime. Mar., Apr.
DISTRIBUTION: New Guinea.
- T. (R.) obscurus** Brug
1934, **25**: 504. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).
STAGES DESCRIBED: ♂.
BIONOMICS: A nepenthicolous species.
DISTRIBUTION: New Guinea.
- T. (R.) perplexus** Peters
1963, **32**: 91. TYPE-LOC: Maprik, Sepik Dist., NE New Guinea (CSIR).
STAGES DESCRIBED: ♀, P.
BIONOMICS: Adult reared from pupa collected in tree hole. Mar.

DISTRIBUTION: New Guinea.

T. (R.) punctolateralis (Theobald)

1903, **36**: 156 (*Stegomyia*). TYPE-LOC: S Queensland, Australia (BMNH).

occidentalis Brug 1934, **25**: 506 (*atripes* var.). TYPE-LOC: Atapoepoe, Oebe, Timor (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Larvae recorded from water butts and tanks and rot holes in fallen logs. ♀ reported biting. Nov.

DISTRIBUTION: Australia, New Guinea, Timor.

T. (R.) solomonis (Edwards)

1924, **14**: 363 (*Rachionotomyia*). TYPE-LOC: Tulagi (Florida group), Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in tree holes, bamboo stubble, papaya stumps, and various large and small artificial containers.

DISTRIBUTION: Solomon Is., New Caledonia.

T. (R.) standfasti Peters

1959, **28**: 148. TYPE-LOC: Maprik Sepik Dist., NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae from axils of *Curcuma* sp. and coconut shells. Adults reared. Jan., Feb.

DISTRIBUTION: New Guinea.

T. (R.) subobscurus Lee

1946, **70**: 273. TYPE-LOC: Jacky Jacky, Cape York, Q., Australia (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: The type was bred from larvae found in *Nepenthes* species.

DISTRIBUTION: Australia, New Guinea.

Subgenus **Uncertain**

T. concinnus Lee

1946, **70**: 260. TYPE-LOC: Mt Dafonsero, 1,400 m, NW New Guinea (CSIR).

STAGES DESCRIBED: ♀.

BIONOMICS: Females captured biting. Mar.

DISTRIBUTION: New Guinea.

T. subnudipennis (Edwards)

1927, **15**: 355 (*Rachionotomyia*). TYPE-LOC: Nasau Mts, 2,400 m (western) New Guinea (BMNH).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

Genus **MALAYA** Leicester

Wharton 1947, **72**: 58-68 (keys to adults and larvae, Australasian and Oriental Regions).

M. genurostris Leicester

1908, **3**: 258. TYPE-LOC: Malaya (BMNH).

caeruleovittata Ludlow 1911, **18**: 131 (*Harpogomyia*). TYPE-LOC: Ludlow Barrack (Parang, Cotabato), Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in leaf axils of large *Arum*, in cunjevoi, *Colocasia*, *Colocasia antiquorum* and *Rhynchospora aurea*.

DISTRIBUTION: Malaya, India, Ceylon, Burma, Thailand, Maldives, Indonesia, Singapore, Philippines, Rykyu-Retto, China, Formosa, Australia, New Guinea.

M. leei (Wharton)

1947, **72**: 60 (*Harpogomyia*). TYPE-LOC: Madang, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken in leaf axils of *Colocasia* spp. Jan.

DISTRIBUTION: New Guinea.

M. solomonis (Wharton)

1947, **72**: 63 (*Harpogomyia*). TYPE-LOC: Bougainville, Solomon Is., (UQ).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken from axils of lily-like plant, possibly *Sararanga* sp.

DISTRIBUTION: Solomon Is.

Genus **TOPOMYIA** Leicester

Subgenus **Suaymyia** Thurman

T. (S.) papuensis Marks

1960, **2**: 91. TYPE-LOC: Koipa, 6-8 km from Saiho (8° 51' S, 148° 05' E) on the Popondetta road, SE New Guinea (UQ).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected from axils of a crinum-like plant growing in deep shade. Adults reared. Apr.

DISTRIBUTION: New Guinea.

Genus **FICALBIA** Theobald

Lee 1944, 43 (key to larvae of matellica and elegans); Mattingly 1957, **1**: 1-61 (keys to adults, pupae, and larvae, Indomalayan area).

Subgenus **Ficalbia** Theobald

F. (F.) minima (Theobald)

1901, **2**: 262 (*Uranotaenia*). TYPE-LOC: Quilon,

Travancore, India (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae always found in water collections with *Pistia*.

DISTRIBUTION: India, Ceylon, Malaya, Singapore, Java, Borneo, New Guinea, Thailand, Indochina, China.

Subgenus **Mimomyia** Theobald

F. (M.) chamberlaini *issp. metallica* (Leicester) 1908, **3**: 113 (*Conopomyia*). TYPE-LOC: Barrack Pool., Kuala Lumpur (Selangor), Malaya (BMNH).

(?) *flavens* King & Hoogstraal 1946, **48**: 188.

TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in ground pools and ponds, usually with abundant vegetation, often among *Pistia*, but without an obligatory association with this or other plants.

DISTRIBUTION: Malaya, Singapore, Thailand, Indochina, Formosa, Philippines, New Guinea, Australia, Java, Sumatra.

F. (M.) flavens King & Hoogstraal

1946, **48**: 188. TYPE-LOC: Hollandia, NW New Guinea (USNM).

(?= *chamberlaini* var. *metallica*.)

STAGES DESCRIBED: ♂.

BIONOMICS: ♂ taken in a light trap. Apr.

DISTRIBUTION: New Guinea.

F. (M.) gurneyi Belkin

1962, **1**: 296. TYPE-LOC: Bougainville, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Pupae and larvae collected in fresh water lagoon floating near small aquatic plants, some larvae were removed from the roots of a swamp fern. Adults reared. Apr.

DISTRIBUTION: Solomon Is.

F. (M.) modesta King & Hoogstraal

1946, **48**: 186. TYPE-LOC: Hollandia, NW New Guinea (USNM).

(?= *hybrida* [Leicester])

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults taken in light traps. Jan., Mar., Apr.

DISTRIBUTION: New Guinea.

Subgenus **Etorleptomyia** Theobald

F. (E.) bougainvillensis Belkin

1962, **1**: 294. TYPE-LOC: Bougainville, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in ground pools frequently with emergent vegetation, once in a swamp pocket of moss and mud.

DISTRIBUTION: Solomon Is.

F. (E.) elegans (Taylor)

1914, 1913: 703 (*Dioxomyia*). TYPE-LOC: Townsville, Q., Australia (US).

STAGES DESCRIBED: ♀.

BIONOMICS: Larvae found in hoof prints with decaying vegetation at edge of swamp, in fresh water hole and in damp, swampy area. Adults taken in light traps.

DISTRIBUTION: Australia, Solomon Is., Bismarck Arch., New Guinea, Philippines, Sumatra, Malaya, Thailand.

F. (E.) solomonis Belkin

1962, **1**: 292. TYPE-LOC: Chacon Swamp, Lunga area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immature stages found in undisturbed jungle swamps with very dense vegetation. Adults occasionally taken at light.

DISTRIBUTION: Solomon Is.

Genus **MANSONIA** Blanchard

Bonne-Wepster 1930, **19**: 196-212 (key to adults, *Mansonioides*, Dutch East Indies); Lee 1944, 36-42 (key to larvae, Australasian Region); Knight, Bohart & Bohart 1944, 22-24 (key to adults, Australasian Region).

Subgenus **Mansonioides** Theobald

M. (M.) africana (Theobald)

1901, **4**: 12 (*Panoplites*). TYPE-LOC: Asaba (Eastern Provinces), Nigeria (BMNH).

major Theobald 1903, **3**: 270. TYPE-LOC: Bahr el Ghazal, (Sudan) (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually attached to roots of *Pistia stratiotes*; also found on roots of *Impatiens irvingii* Hook and *Hydrolea glabra* Schum. Both larvae and pupae will attach to the lower surfaces of Duck Weed (Africa). ♀ bites chiefly at night, readily attacking man.

DISTRIBUTION: Tropical Africa, ? New Guinea.

M. (M.) annulifera (Theobald)

1901, **2**: 183 (*Panoplites*). TYPE-LOC: Madra and Quilon, Travancore, India (BMNH).

seguini Laveran 1901, **53**: 992 (*Panoplites*). TYPE-LOC: Hanoi, Tonkin, Indochina (PIP).

septemguttata Theobald 1907, 4: 499 (*Mansonioides*).

TYPE-LOC: Sarawak, Borneo (BMNH).

STAGES DESCRIBED: ♂, ♀, P, R.

BIONOMICS: Larvae associated with *Pistia stratiotes*; eggs are found cemented to leaf edges of this plant. ♀♀ will readily bite man.

DISTRIBUTION: Oriental Region, New Guinea.

M. (M.) bonnewepsterae Assem

1958, 10: 205. TYPE-LOC: L. Sentani, NW New Guinea (LM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected from roots of *Pistia stratiotes* and *Hydrocharis asiatica* in areas heavily polluted with waste from nearby native houses. Adults readily bite man, usually after sunset but also in daytime in wet, shady areas.

DISTRIBUTION: New Guinea.

M. (M.) dives (Schiner)

1868, 2: 31 (nom. nov. for *annulipes* Walker, non Meigen 1830; *Culex*).

annulipes Walker 1857, 1: 6 (*Culex*). TYPE-LOC: Singapore (BMNH).

longipalpis Van der Wulp 1881, : 9 (*Culex*). TYPE-LOC: Alahan panjang, nr Soeroelangoen (Benkoelen), Sumatra (LM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae taken from fibrous roots of trees to depth of 1 m.

DISTRIBUTION: Singapore, Malaya, Thailand, India, Indonesia, Hainan Is., New Guinea, Bismarck Arch., Philippines, Australia.

M. (M.) indiana Edwards

1930, 21: 541. TYPE-LOC: Bandjarna, South Preanger, Java (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae always associated with *Pistia*, generally more abundant in parts of lakes fouled by discarded coconut husks. ♀♀ readily enter dwellings and bite man.

DISTRIBUTION: Java, India, Ceylon, Burma, Malaya, Singapore, Sumatra, Thailand, Indochina, New Guinea.

M. (M.) melanesiensis Belkin

1962, 1: 314. TYPE-LOC: Doma Cone area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures, presumably of this species, collected from roots of a "swamp fern". ♀♀ generally night biters but will bite readily during daylight.

DISTRIBUTION: Solomon Is.

M. (M.) papuensis (Taylor)

1914, : 200 (*Taeniorhynchus*). TYPE-LOC: Lakekamu Gold Field, SE New Guinea (LU).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: ♀♀ are annoying biters, usually early in the evening.

DISTRIBUTION: New Guinea.

M. (M.) septempunctata Theobald

1905, 3: 107. TYPE-LOC: Friedrich-Wilhelmshafen, NE New Guinea (HNM).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea, Bismarck Arch.

M. (M.) uniformis (Theobald)

1901, 2: 180 (*Panoplites*). TYPE-LOC: Quilon, Travancore, India (BMNH).

reversus Theobald 1901, 2: 189 (*Panoplites africanus* var.). TYPE-LOC: Zomba, Nyasaland (BMNH).

australiensis Giles 1902, 355 (*Panoplites*). TYPE-LOC: Burpengary, Q., Australia (BMNH).

marquesensis Dyar 1925, 13: 43. TYPE-LOC: Lorengo, Marques, Mozambique (USNM).

STAGES DESCRIBED: ♀.

BIONOMICS: Larvae found on several aquatic plants, in Indonesia on water hyacinth, *Eichornia* and swamp grass, *Isachne*. In New Guinea larvae were found attached to roots of giant grasses in soft-bottom marshes. ♀♀ are nocturnal feeders and readily bite man.

DISTRIBUTION: Ethiopian, Oriental, and Australasian Regions, east to Solomon Is., Japan, Ryukyu-Retto.

Genus **COQUILLETIDIA** Dyar

Subgenus **Coquillettidia** Dyar

C. (C.) crassipes (Van der Wulp)

1881, :9 (*Culex*). TYPE-LOC: Soeroelangoen (Benkoelen), Sumatra (LM).

brevicellulus Theobald 1901, 2: 212 (*Taeniorhynchus*). TYPE-LOC: Selangor, Malaya, and Thayetmyo (Magwe), Burma (BMNH).

pygmaeus Theobald 1908, 2: 300 (*Chrysoconops*). TYPE-LOC: Sylhet, Assam, India (IM).

fuscopteron Theobald 1911, 54: 239 (*Chrysoconops*). TYPE-LOC: Digoel R., SW New Guinea (AM).

diaeretus Dyar 1920, 8: 181. TYPE-LOC: Los Baños, (Laguna, Luzon) Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae are always associated with aquatic plants. They were collected from *Ipomoea*

aquatica and from grass roots in a dirty, water-filled pit. Adults bite readily and occasionally enter houses.

DISTRIBUTION: Indonesia, India, Ceylon, Burma, Thailand, China, Malaya, Philippines, Ryukyu-Retto, New Guinea, Bismarck Arch., Solomon Is., Australia, New Caledonia, Fiji, ? New Hebrides, ? Mariana Is.

C. (C.) giblini (Taylor)

1914, :198 (*Pseudotaeniorhynchus conopas* var.). TYPE-LOC: Lakekamu Gold Field, SE New Guinea (US).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea, Indonesia, Australia, Bismarck Arch., Philippines, Formosa,

C. (C.) lutea Belkin

1962, 1: 309. TYPE-LOC: Burns C., Kunga area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from plant roots in a swamp; pupa taken in a fresh water lagoon. Adults found in wooded areas around swamps.

DISTRIBUTION: Solomon Is.

C. (C.) memorans (Bonne-Wepster)

1930, 19: 393 (*Taeniorhynchus*). TYPE-LOC: Upper Digoel R., SW New Guinea (GLB).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea

C. (C.) nigrochracea (Bonne-Wepster)

1930, 19: 392 (*Taeniorhynchus*). TYPE-LOC: Upper Digoel R., SW New Guinea, and Dramajoe, (=Dramajoe, Benkoelen), Sumatra (GLB)

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea, Sumatra.

C. (C.) ochracea (Theobald)

1903, 3: 263 (*Taeniorhynchus*). TYPE-LOC: Kuala Lumpur (Selangor), Malaya (BMNH).

chrysogona Knab 1909, 20: 386. TYPE-LOC: Parang (Cotabato, Mindanao), Philippines (USNM).

shakujiiensis Ogasawara 1939, 7: 238. TYPE-LOC: Shakujii, Tokyo, Honshu, Japan (LU).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae taken from the under water portions of the stems and roots of *Zuzania latifolia* Turcz in stagnant natural ponds (Japan). Adults were collected biting man.

DISTRIBUTION: Malaya, India, Thailand, Indochina, China, Japan, Ryukyu-Retto, Philippines,

New Guinea, Indonesia.

C. (C.) xanthogaster (Edwards)

1924, 14: 366 (*Taeniorhynchus*). TYPE-LOC: Burpengary, Q., Australia (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from small swamps covered with various water weeds.

DISTRIBUTION: Australia, New Hebrides, New Caledonia, ? New Guinea.

Genus **URANOTAENIA** Lynch Arribalzaga

Lee 1944, 29 (key to larvae, Australasian Region); King & Hoogstraal 1946, 39: 596 (key to ♂♂ of *tibialis* group, New Guinea); Belkin 1953, 7: 321 (key to ♂♂, ♀♀, P, L, Solomon Is.); Belkin 1962, 1: 152-176 (keys to adults, ♂ genitalia, pupa, & larvae, South Pacific); Sloof 1963, 56: 86 (key to ♂♂ of *tibialis* group, New Guinea); Peters 1964, 33: 27 (checklist of South Pacific *Uranotaenia*).

U. albescens Taylor

1914, 4: 705. TYPE-LOC: Townsville, Q., Australia (LU).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Adults found in kerosene tins and water butts. Larvae in clear, shallow grassy pools of water, wheel ruts. Mar., Aug.

DISTRIBUTION: Australia, Bismarck Arch.

U. albosternopleura Peters

1963, 32: 203. TYPE-LOC: Maprik, Sepik Dist., NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults resting at edge of small rock pool; also taken in light traps. May, Aug.

DISTRIBUTION: New Guinea.

U. amiensis Peters

1963, 32: 207. TYPE-LOC: Ami, 16 km NW Maprik, Sepik Dist., NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Pupa found at river edge; adults reared. Mar., Apr., Nov.

DISTRIBUTION: New Guinea.

U. antennalis Taylor

1919, 43: 840. TYPE-LOC: Cairns, Q., Australia (US).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Australia, New Guinea.

U. argyrotarsis Leicester

1908, 3: 214. TYPE-LOC: Gombak Road, Kuala

Lumpur, Malaya (BMNH).

parangensis Ludlow 1909, **41**: 24 (*Pseudouranotaenia*).

TYPE-LOC: Parang, Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in ground pools, sago swamp pools, and occasionally in artificial containers.

DISTRIBUTION: Malaya, Moluccas, New Guinea, Bismarck Arch., Solomon Is., Philippines.

U. atra Theobald

1905, **3**: 114. TYPE-LOC: Muina, New Guinea (HNM).

nigerrima Taylor 1914, :203. TYPE-LOC: Milne Bay and Lakekamu Gold Field, SE New Guinea (LU).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae bred in fallen leaves, fallen coconut bracts, coconut shells, tree holes, and artificial containers; also in sago swamp ground pools and crab holes.

DISTRIBUTION: New Guinea, Bismarck Arch., Australia.

U. barnesi Belkin

1953, **7**: 332. TYPE-LOC: Togirie Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immature breed in fresh water swamp but are occasionally found in small pools, rock and side pools of small densely shaded streams.

DISTRIBUTION: Solomon Is., New Hebrides.

U. civinskii Belkin

1953, **7**: 341. TYPE-LOC: Bonegi R. Vy, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually in side and rock pools of jungle streams.

DISTRIBUTION: Solomon Is.

U. diagonalis Brug

1934, **25**: 510. TYPE-LOC: Tanah Merah, Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in axils of small leaves at base of the flowers of *Curcuma* sp. (Zingiberaceae).

DISTRIBUTION: New Guinea, Bismarck Arch.

U. fimbriata King & Hoogstraal

1946 (1947), **39**: 592. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: ♂♂ taken in light traps. Mar.

DISTRIBUTION: New Guinea.

U. gerdae Slooff

1963, **56**: 84. TYPE-LOC: Sorong, Klademak, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in a large rock pool with very cool, clear water. Adults reared. Jan.

DISTRIBUTION: New Guinea.

U. hirsutifemora Peters

1964, **33**: 21. TYPE-LOC: Port Moresby, SE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown. Feb., Nov.

DISTRIBUTION: New Guinea.

U. lateralis Ludlow

1905, **37**: 385 (*caeruleocephala* var.). TYPE-LOC: Cotabato, Mindanao, Philippines (USNM).

cancer Leicester 1908, **3**: 215. TYPE-LOC: Port Swettenham and Klang (Selangor), Malaya (BMNH).

ceylonica Theobald 1910, **5**: 503. TYPE-LOC: Galle, Ceylon (BMNH).

propria Taylor 1914, 1913, : 704. TYPE-LOC: Townsville, Q., Australia (LU).

cairnsensis Taylor 1919, **43**: 839. TYPE-LOC: Cairns, Q., Australia (LU).

innotata Dyar & Shannon 1925, **13**: 69. TYPE-LOC: Camp Nichols, Rizal, Luzon, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in slightly brackish water pools behind the beach in open areas.

DISTRIBUTION: Philippines, India, Ceylon, Andaman Is., Malaya, Thailand, Indonesia, New Guinea, Bismarck Arch., Solomon Is., Australia.

U. moresbyensis Peters

1963, **32**: 204. TYPE-LOC: Port Moresby, SE New Guinea (CSIR).

STAGES DESCRIBED: ♂.

BIONOMICS: ♂ collected at night. Feb.

DISTRIBUTION: New Guinea.

U. neotibialis King & Hoogstraal

1946 (1947), **39**: 590. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, P, L.

BIONOMICS: Larvae found in swamp ground pools. Adults reared and collected at light. Mar., Apr.

DISTRIBUTION: New Guinea.

U. novaguinensis Peters

1963, **32**: 141. TYPE-LOC: Ami, 16 km NW Maprik, Sepik Dist, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found at edge of slow running stream in partial shade. Adults reared from larvae and collected from resting site in shaded hole in river bank; also taken in light trap. Oct., Jan., Apr.

DISTRIBUTION: New Guinea.

U. novaguinensis alticola Peters

1963, **32**: 142. TYPE-LOC: Goroka, Eastern Highlands Dist., 1,524 m, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults taken resting outdoors and in light traps. May.

DISTRIBUTION: New Guinea.

U. obscura Edwards

1915, **5**: 285. TYPE-LOC: Kuching, Sarawak, Borneo (BMNH).

STAGES DESCRIBED: A, L.

BIONOMICS: Larvae in fallen leaves in the jungle.

DISTRIBUTION: Borneo, Malaya, Singapore, Moluccas, Hainan I.

U. papua Brug

1924, **14**: 441. TYPE-LOC: Pionierbivak, Mamberano R., NW New Guinea (BMNH).

STAGES DESCRIBED: ♀, P, L.

BIONOMICS: Larvae collected from a cup fungus, artificial containers, spathes, leaves, and from inflorescences of *Curcuma* spp; also from sago swamp ground pools.

DISTRIBUTION: New Guinea.

U. paralateralis Peters

1964, **33**: 19. TYPE-LOC: Kavieng, New Ireland, Bismarck Arch. (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults taken in light traps. May, June.

DISTRIBUTION: Bismarck Arch.

U. paranovaguinensis Peters

1963: **32**: 135. TYPE-LOC: Maprik, Sepik Dist., NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found at edge of slow running stream in partial shade. Adults taken in light traps and found resting in a large shaded hole in river bank. Apr., Sept., Oct.

DISTRIBUTION: New Guinea.

U. quadrimaculata Edwards

1929, **20**: 313. TYPE-LOC: Rere, Guadalcanal, Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in small water collections in living and dead plants and plant material; also in small artificial containers. They are commonly found in axils of *Colocasia* and *Alocasia*.

DISTRIBUTION: Solomon Is.

U. setosa King & Hoogstraal

1946 (1947), **39**: 585. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in ground pools at edge of sago swamps and in swamps; also in grassy ditches. Adults were collected by light traps. Jan., Feb., Apr., May.

DISTRIBUTION: New Guinea.

U. sexauri Belkin

1953, **7**: 359. TYPE-LOC: West Poha Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures collected in dense jungle swamps.

DISTRIBUTION: Solomon Is.

U. solomonis Belkin

1953, **7**: 350. Lunga area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae generally found in temporary pools, ruts, springs, and in open parts of jungle swamps. Adults observed on jungle vegetation near breeding sites.

DISTRIBUTION: Solomon Is.

U. subtibioclada King & Hoogstraal

1946 (1947), **39**: 595. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Adults taken at light traps. Apr.

DISTRIBUTION: New Guinea.

U. tibialis Taylor

1919, **43**: 839. TYPE-LOC: Cairns, Q., Australia (US).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Unknown.

DISTRIBUTION: Australia, ? New Guinea, ? New Hebrides.

U. tibioclada King & Hoogstraal

1946 (1947), **39**: 593. TYPE-LOC: Samboga R.,

Dobodura, SE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae bred in swamp ground pools. Adults reared and taken in light trap. Feb., Aug., Dec.

DISTRIBUTION: New Guinea.

U. wysockii Belkin

1953, **7**: 366. TYPE-LOC: Tenaru area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from leaf axils of pondorus species.

DISTRIBUTION: Solomon Is.

Genus **HODGESIA** Theobald

H. cairnsensis Taylor

1919, **43**: 842. TYPE-LOC: Cairns, Q., Australia (LU).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Australia, New Guinea, Bismarck Arch., Solomon Is.

H. malayi Leicester

1908, **3**: 231. TYPE-LOC: Nr Kuala Lumpur (Selangor), Malaya (BMNH).

ampyx Dyar 1920, **8**: 176. TYPE-LOC: College Agr., Los Baños (Laguna, Luzon), Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in jungle pools.

DISTRIBUTION: Malaya, Indochina, Philippines, Ceylon, Moluccas.

H. quasisanguinae Leicester

1908, **3**: 230. TYPE-LOC: Nr Kuala Lumpur (Selangor), Malaya (BMNH).

niveocaputis Ludlow 1911, **18**: 130. TYPE-LOC: Fort Pikit, Malabang (Lanao, Mindanao), Philippines (USNM).

triangulatus Taylor 1914, 204. TYPE-LOC:

Lakekamu Gold Field, SE New Guinea (LU).

STAGES DESCRIBED: ♀.

BIONOMICS: Adults are vicious biters.

DISTRIBUTION: Malaya, New Guinea, Celebes, Moluccas, Australia, Philippines, ? Bismarck Arch.

H. solomonis Belkin

1962, **1**: 280. TYPE-LOC: West Poha Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures found in small pockets of water at the edges of dense jungle swamps.

DISTRIBUTION: Solomon Is.

H. spoliata Edwards

1923, **14**: 8. TYPE-LOC: Mekeo Dist., SE New Guinea (BMNH).

STAGES DESCRIBED: ♀, P.

BIONOMICS: Immatures taken in open swamp.

DISTRIBUTION: New Guinea.

Genus **ORTHOPODOMYIA** Theobald

Knight & Mattingly 1950, **52**: 1-20 (keys to adults and 4th stage larvae, *anopheloides* subgroup).

O. andamanensis Barraud

1934, **5**: 102 (*anopheloides* var.). TYPE-LOC: Andaman Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes, bamboo stumps, and in a packing container in the forest. ♀♀ have been taken biting during daytime.

DISTRIBUTION: Andaman Is., India, Malaya, Singapore, Indonesia, New Guinea, Philippines.

Genus **AEDEOMYIA** Theobald

Mackerras 1937, **62**: 259-262.

A. castasticta Knab

1909, **20**: 287. TYPE-LOC: Samal, Bataan (Luzon), Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in pools and swamps with much vegetation (*Pistia stratiates*, *Azolla* spec., *Utricularis* sp. and green filamentous algae).

DISTRIBUTION: Oriental Region, New Guinea, Australia, Solomon Is., Caroline Is., Mariana Is., Fiji Is.

Genus **HEIZMANNIA** Ludlow

H. aurea Brug

1932, **23**: 75. TYPE-LOC: Halmaheira, Moluccas (BMNH).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Moluccas.

Genus **AEDES** Meigen

Knight, Bohart & Bohart 1944, 24-40 (key to adults, Australasian Region); Lee 1944, 48-79 (key to 4th instar larvae, Australasian Region).

Subgenus **Mucidus** Theobald

Knight 1947, **37**: 315-25 (keys to adults and 4th stage larvae, Pacific).

A. (M.) alternans (Westwood)

1835, 4: 681 (*Culex*). TYPE-LOC: Nova Hollandia (Australia) (BMNH).

commovens Walker 1856, 432 (*Culex*). TYPE-LOC: New Holland (Australia) (BMNH).

hispidosus Skuse 1889, 3: 1726 (*Culex*). TYPE-LOC: Hexham Swamp, nr Newcastle, Richmond, Mt Kembla, and Illawarra, N. S. W., Australia (MM).

kermorganti Laveran 1901, 53: 568 (*Culex*). TYPE-LOC: Noumea, New Caledonia (PIP).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae are predaceous and are commonly found in high tide marshy pools but may be found in inland fresh water pools. ♀♀ bite man readily, chiefly at sundown.

DISTRIBUTION: Australia, Timor, New Guinea, New Caledonia.

A. (M.) aurantius (Theobald)

1907, 4: 280 (*Pardomyia*). TYPE-LOC: Kuching, Sarawak (Borneo) (BMNH).

aureostriata Leicester, 1908, 3: 71 (*Pardomyia*).

TYPE-LOC: Klang, nr Kuala Lumpur (Selangor), Malaya (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: The predaceous larvae were taken in pig wallows, small clear marshy pools, pot holes in mangrove swamps and grass-grown pools in swamps.

DISTRIBUTION: Sarawak, Malaya, Indonesia, New Guinea.

A. (M.) aurantius chrysogaster (Taylor)

1927, 18: 67 (*Mucidus*, as sp.). TYPE-LOC: Berner Cr., nr Innisfail, Q., Australia (US).

STAGES DESCRIBED: ♀, P.

BIONOMICS: Larvae found in shallow rock pool with large amount of decaying vegetable matter, also in puddles, a crab pot hole, a coral depression and a highly polluted artificial hole used as a urinal.

DISTRIBUTION: Australia, New Guinea.

A. (M.) painei Knight

1948, 50: 68 (nom. nov. for *nigrescens* Edwards, non Theobald 1907).

nigrescens Edwards 1929, 20: 314 (*Pardomyia auranitia* var.) TYPE-LOC: Lady Lever Plantation, Kulambangra, (=Kilombangara), Solomon Is., (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in temporary pools in forests and coconut plantations.

DISTRIBUTION: Solomon Is., Bismarck Arch. ? New Guinea.

Subgenus **Ochlerotatus** Lynch Arribalzaga

Marks 1957, 1: 71-83 (notes on taxonomy, Australian Region).

A. (O.) mcdonaldi Belkin

1962, 1: 396. TYPE-LOC: West Poha Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in shallow temporary pools in a densely shaded but open area near swamp.

DISTRIBUTION: Solomon Is.

A. (O.) purpuraceus Brug

1932, 23: 77. TYPE-LOC: Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (O.) vigilax (Skuse)

1889, 3: 1731 (*Culex*). TYPE-LOC: Gosford, and Kiama National Park, N. S. W., and Brisbane, Q., Australia (MM).

marinus Theobald 1901, 1: 396. (*Culex*). TYPE-LOC: Queensland, Australia (BMNH).

pseudovigilax Theobald 1907, 4: 382 (*Culicelsa*).

TYPE-LOC: Burpangary, Q., Australia (BMNH).

uniformis Strickland 1911, 44: 131 (*Culicelsa*).

TYPE-LOC: Kings Park, Perth, SW Australia (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually found in salt or brackish water, but may occur in fresh water; breeds in ground pools, tidal swamps, in holes in mangrove trees and large stone jugs. Adults attack man readily.

DISTRIBUTION: Coasts of Australia, New Guinea, New Hebrides, New Caledonia, Indonesia, Thailand, Indochina, Formosa, Seychelles, ? Malaya, Fiji, Solomon Is., Philippines.

Subgenus **Finlaya** Theobald

King & Hoogstraal 1946, 48: 135-57 (keys to ♂♂, ♀♀, and 4th stage larvae of *papuensis* group, Australasian Region); Knight & Laffoon 1946 72: 203-25 (keys to adults, pupae and larvae, *kochi* group, Oriental Region); Marks 1947, 2: 1-66 (keys to adults, ♂ genitalia and larvae, *kochi* group, Australasian Region); Belkin 1962, 1: 340-86 (keys to adults, ♂ genitalia, pupae and larvae, South Pacific).

A. (F.) albilabris Edwards

1925, 15: 258. TYPE-LOC: Tulagi I., Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in artificial containers, leaf axils of various plants, tree holes, bamboo, coconut shells and husks.

DISTRIBUTION: Solomon Is.

A. (F.) alticola Bonne-Wepster

1948, **19**: 313. TYPE-LOC: Scree Vy, at foot of Mt Wilhelmina, 3,800 m, NW New Guinea (ITH).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (F.) anggiensis Bonne-Wepster

1937, **26**: 97. TYPE-LOC: Anggi Lakes, 2,000 m, NW New Guinea (ITH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (F.) argenteitarsis Brug

1932, **23**: 76. TYPE-LOC: Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected from fallen palm leaves in shaded sago swamp and rain forest at altitudes from 60–90 m.

DISTRIBUTION: New Guinea.

A. (F.) argyronotum Belkin

1962, **1**: 354. TYPE-LOC: Matanikau Vy, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes, rock holes, and rock pools in small shaded streams.

DISTRIBUTION: Solomon Is.

A. (F.) aureostriatus (Doleschall)

1857, **14**: 385 (*Culex*). TYPE-LOC: Amboina Is., (Moluccas) (TL).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken in tree holes (Philippines).

DISTRIBUTION: Indonesia, New Guinea.

A. (F.) avistylus Brug

1939, **82**: 107 (*flavipennis* var.). TYPE-LOC: Baocbaoc, Boeton (=Butung I., Celebes) (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae reported from leaf axils of *Colocasia* and in bamboo stump.

DISTRIBUTION: Celebes, Moluccas, Malaya.

A. (F.) bougainvillensis Marks

1947 **2(5)**: 19. TYPE-LOC: Bougainville, Solomon

Is. (UQ).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from axils of lily-like plant, probably *Sararanga* sp.; also from pandanus axils. Adults reared.

DISTRIBUTION: Solomon Is.

A. (F.) buxtoni Belkin

1962, **1**: 356. TYPE-LOC: ? Bougainville, Solomon Is. (US).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: ? Solomon Is.

A. (F.) candidoscutellum Marks

1947, **2(6)**: 1. TYPE-LOC: Binna Burra, Lamington National Park, Q., Australia (UQ).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in tree cavities, adults reared.

DISTRIBUTION: Australia, New Guinea.

A. (F.) clintoni Taylor

1946, **70**: 211. TYPE-LOC: Lae, NE New Guinea (US).

(?= *hollandius*)

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (F.) derooki Brug

1932, **23**: 75. TYPE-LOC: Ternate, Moluccas (BMNH).

STAGES DESCRIBED: ♀.

BIONOMICS: Larvae reported from rock pools in stream bed.

DISTRIBUTION: Moluccas.

A. (F.) dobodurus King & Hoogstraal

1946, **48**: 37. TYPE-LOC: Dobodura, SE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae in fallen leaves, cup fungi and artificial containers.

DISTRIBUTION: New Guinea.

A. (F.) franclemonti Belkin

1962, **1**: 367. TYPE-LOC: Munda, New Georgia, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in leaf axils of a broad-leaf pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) fuscipalpis Belkin

1962, **1**: 370. TYPE-LOC: Tenaru area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in pandanus leaf axils.

DISTRIBUTION: Solomon Is.

A. (F.) fuscitarsis Belkin

1962, **1**: 371. TYPE-LOC: Poha area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in leaf axils of pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) gani Bonne-Wepster

1940, **29**: 158. TYPE-LOC: Jæpero, SW New Guinea (ITH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults reared from *Nepenthes*.

DISTRIBUTION: New Guinea.

A. (F.) gracilelineatus Bonne-Wepster

1937, **26**: 93. TYPE-LOC: Anggi Lakes, NW New Guinea (ITH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (F.) hollandius King & Hoogstraal

1946, **48**: 38. TYPE-LOC: Mt Dafonsero, Cyclops Range, Hollandia area, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in fallen palm leaves, tree holes, rock pools and artificial containers.

DISTRIBUTION: New Guinea.

A. (F.) hollingsheadi Belkin

1962, **1**: 372. TYPE-LOC: Poha area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae known only from leaf axils of pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) keefei King & Hoogstraal

1946, **36**: 311. TYPE-LOC: K. B. Mission, Milne Bay, SE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from stump hole, adults reared.

DISTRIBUTION: New Guinea, Australia.

A. (F.) knighti Stone & Bohart

1944, **46**: 210. TYPE-LOC: Rendova I., New Geor-

gia group, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in axils of broad-leaved pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) kochi (Dönitz)

1901, **18**: 38 (*Culex*). TYPE-LOC: Dreyer Hafen Bay, Cap Cretin, D'Entrecasteaux Is., New Guinea (ZM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in leaf axils of banana, taro, cunjevoi, pineapple, crinum and pandanus. ♀♀ bite man readily, day or night.

DISTRIBUTION: New Guinea, Australia, Bismarck Arch., Moluccas.

A. (F.) neogeorgianus Belkin

1962, **1**: 375. TYPE-LOC: Munda, New Georgia, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken both in pandanus and taro leaf axils.

DISTRIBUTION: Solomon Is.

A. (F.) notoscriptus (Skuse)

1889, **3**: 1738 (*Culex*). TYPE-LOC: Sydney and generally distributed in New South Wales, Australia (MM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in fallen palm leaves, coconut husks and shells, tree holes and artificial containers. In New Zealand ♀♀ reported entering houses and biting man.

DISTRIBUTION: Australia, New Zealand, New Caledonia, New Guinea, Moluccas, Bismarck Arch.

A. (F.) novalbitarsis King & Hoogstraal

1946, **48**: 146 (nom. nov. for *albitarsis* Taylor, non Ludlow 1905).

albitarsis Taylor 1914, :194 (*Leucomyia*). TYPE-LOC: Lakekamu Gold Field, SE New Guinea (US).

STAGES DESCRIBED: ♀, P.

BIONOMICS: Larvae taken in shaded tree holes, log holes, fallen palm bracts, coconut leaves and husks, and artificial containers.

DISTRIBUTION: New Guinea.

A. (F.) papuensis (Taylor)

1914, :193 (*Leucomyia australiensis* var.). TYPE-LOC: Milne Bay, SE New Guinea (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in tree holes, rock pools, drum heads, on paper, sunlit ruts and sunlit coral pools.

DISTRIBUTION: New Guinea, Bismarck Arch., Solomon Is.

A. (F.) plumiferus King & Hoogstraal
1946, **36**: 306. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in buttress of large rain forest tree and in tree holes. Adults taken resting in a tree hole and reared.

DISTRIBUTION: New Guinea.

A. (F.) poicilius (Theobald)
1903, **3**: 283 (*Finlaya poicilia*, emend. by Barraud 1934, 157). TYPE-LOC: Pulau Jerezak, Penang, Malaya (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in axils of aroid-type plants, banana, and abaca plants, occasionally in pandanus. Adults frequently rest in deep shaded thickets and ravines; females bite man readily, day or night.

DISTRIBUTION: Malaya, India, Burma, Thailand, Indonesia, Philippines, New Guinea.

A. (F.) quasirubithorax (Theobald)
1910, **5**: 327, 348 (*Culex*). TYPE-LOC: Kuranda, Q., Australia (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes and old tanks.

DISTRIBUTION: Australia, New Guinea.

A. (F.) roai Belkin
1962, **1**: 353. TYPE-LOC: Wrights Cr., Matanikau Vy, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults reared from larvae and pupae taken in tree holes.

DISTRIBUTION: Solomon Is.

A. (F.) rubiginosus Belkin
1962, **1**: 346. TYPE-LOC: ? Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Solomon Is.

A. (F.) schlosseri Belkin
1962, **1**: 382. TYPE-LOC: Poha area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in leaf axils of pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) solomonis Stone & Bohart
1944, **44**: 208. TYPE-LOC: Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in leaf axils of pandanus.

DISTRIBUTION: Solomon Is.

A. (F.) stanleyi Peters
1963, **32**: 1. TYPE-LOC: Mt Minj, 1,566 m, Western Highlands Dist, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Adults reared from larvae found in tree hole.

DISTRIBUTION: New Guinea.

A. (F.) subalbitarsis King & Hoogstraal
1946, **48**: 144. TYPE-LOC: Mt Dafonsero, 910 m, Cyclops Mts, Hollandia area, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae breed in shaded rock pools and log holes, adults reared.

DISTRIBUTION: New Guinea.

A. (F.) toxopeusi Bonne-Wepster
1948, **19**: 315. TYPE-LOC: Scree Vy, at foot of Mt Wilhelmina, NW New Guinea (ITH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (F.) tsiliensis King & Hoogstraal
1946, **36**: 305. TYPE-LOC: Tsili Tsili on Watut R., branch of Markham R., NE New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Adults reared from larvae collected in a tree hole.

DISTRIBUTION: New Guinea.

A. (F.) wallacei Edwards
1926, **17**: 105. TYPE-LOC: Kavieng (Kaewung), New Ireland, Bismarck Arch. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected generally from pandanus axils but found in axils of banana, taro and pineapples. ♀♀ enter houses and readily bite man at night.

DISTRIBUTION: Bismarck Arch., New Guinea, Australia (Queensland).

Subgenus **Macleaya** Theobald

A. (M.) littlechildi Taylor
1933, **7**: 370. TYPE-LOC: Kokoda Buna Dist., SE New Guinea (US).

STAGES DESCRIBED: ♀.
 BIONOMICS: Unknown.
 DISTRIBUTION: New Guinea.

A. (M.) tremulus (Theobald)
 1903, **36**: 155 (*Macleaya*). TYPE-LOC: S Q.,
 Australia (BMNH).

minuta Taylor 1912, **1a**: 30 (*Danielsa*). TYPE-
 LOC: Wandu, N. T., Australia (US.)

alboannulata Taylor 1912, **1a**: 31 (*Danielsa*).
 TYPE-LOC: Wandu, N. T., Australia (TL).

australis Taylor 1914, **39**: 457 (*Aedimorphus*).
 TYPE-LOC: Townsville, Q., Australia (US).

darwinii Taylor 1914, **39**: 458 (*Aedimorphus australis*
 var.). TYPE-LOC: Darwin, N. T., Australia
 (US).

doddi Taylor 1919, **43**: 831 (*Mimeteomyia*). TYPE-
 LOC: Hikinuma Plantation, SE New Guinea
 (US).

STAGES DESCRIBED: ♂, ♀, P, L.
 BIONOMICS: Larvae breed in tree holes.
 DISTRIBUTION: Australia New Guinea, Bis-
 marck Arch.

Subgenus **Pseudoskusea** Theobald

A. (P.) culiciformis (Theobald)
 1905, **3**: 77 (*Skusea*). TYPE-LOC: Paumotu R.,
 SE New Guinea (HNM).

STAGES DESCRIBED: ♀.
 BIONOMICS: Unknown.

DISTRIBUTION: New Guinea, Australia, Bis-
 marck Arch.

A. (P.) lunulatus King & Hoogstraal
 1946, **48**: 95. TYPE-LOC: Hollandia, NW New
 Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.
 BIONOMICS: Larvae breed in crayfish hole in
 shaded rainforest. ♂ was collected from crayfish hole,
 other adults taken at light.

DISTRIBUTION: New Guinea.

A. (P.) multiplex (Theobald)
 1903, **3**: 293 (*Skusea*). TYPE-LOC: Queensland,
 Australia (BMNH).

STAGES DESCRIBED: ♀, L.
 BIONOMICS: Unknown.

DISTRIBUTION: Australia, ? New Guinea.

Subgenus **Lorrianea** Belkin

A. (L.) dasyorrrhus King & Hoogstraal
 1946, **48**: 100. TYPE-LOC: Cape Tjweri, Jefuta
 Bay, Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.
 BIONOMICS: Larvae found in artificial con-

tainers and in holes in tree trunks projecting out into
 or over ocean water.

DISTRIBUTION: New Guinea, Solomon Is.

Subgenus **Christophersiomia** Barraud

A. (C.) chionodes Belkin
 1962, **1**: 434. TYPE-LOC: Torokina, Bougainville,
 Solomon Is. (US).

STAGES DESCRIBED: ♂, ♀.
 BIONOMICS: Unknown.
 DISTRIBUTION: Solomon Is.

Subgenus **Geoskusea** Edwards

Belkin 1962, **1**: 332-39 (keys to adults, ♂ genitalia,
 L, P, Solomon Is.)

A. (C.) becki Belkin
 1962, **1**: 334. TYPE-LOC: Roviana, Solomon Is.
 (USNM).

STAGES DESCRIBED: ♂, ♀.
 BIONOMICS: Adults were either collected in or
 reared from immatures found in crab holes.
 DISTRIBUTION: Solomon Is.

A. (C.) fimbripes Edwards
 1924, **14**: 390. TYPE-LOC: Rabaul, New Britain,
 Bismarck Arch. (BMNH).

STAGES DESCRIBED: ♂, ♀.
 BIONOMICS: Adults found in crab holes.
 DISTRIBUTION: Bismarck Arch., New Guinea.

A. (C.) longiforceps Edwards
 1929, **20**: 315. TYPE-LOC: Kaylan, Cape Marsh,
 Pavuvu (Russell), Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.
 BIONOMICS: Adults and immatures taken in
 crab holes, on Guadalcanal is a dominant night-biting
 mosquito.
 DISTRIBUTION: Solomon Is.

A. (C.) perryi Belkin
 1962, **1**: 336. TYPE-LOC: Naro Village, Guadal-
 canal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀.
 BIONOMICS: Adults taken in crab holes and
 rarely in biting collections.
 DISTRIBUTION: Solomon Is.

A. (C.) tonsus Edwards
 1924, **14**: 390. TYPE-LOC: Saparoea, Amboina I.,
 Moluccas (BMNH).

STAGES DESCRIBED: ♂.
 BIONOMICS: Unknown.
 DISTRIBUTION: Moluccas.

Subgenus **Rhinoskusea** Edwards

Mattingly 1958, **3**: 35-41 (keys to ♂♂, ♀♀, and 4th stage larvae, Indomalayan area).

A. (R.) longirostris (Leicester)

1908, **3**: 228 (*Ficalbia*). TYPE-LOC: Kuala Klang, Malaya (BMNH).

hilli Taylor 1919, **43**: 841 (*Uranotaenia*). TYPE-LOC: Darwin, N. Territory, Australia (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in crab holes in mangrove swamps, brackish rock pools, small shady ground pools, and artificial containers.

DISTRIBUTION: Malaya, Singapore, Andaman Is., Thailand, Indochina, Borneo, Philippines, Ceylon, Australia, New Guinea.

Subgenus **Stegomyia** Theobald

Marks 1954, **3**: 349-414 (key to adults, *scutellaris* group). Belkin 1962, **1**: 436-80 (key to adults, ♂ genitalia, pupae, and 4th stage larvae).

A. (S.) aegypti (Linnaeus)

1792, :470 (*Culex*). TYPE-LOC: Egypt (TL).

Synonyms: see Stone, Knight & Starcke 1959, pp. 178-180.

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae usually breed in artificial containers, rarely found in tree holes. ♀♀ prefer human blood and usually bite indoors.

DISTRIBUTION: Cosmotropical (within the 20°C isotherms).

A. (S.) albolineatus (Theobald)

1904, **37**: 77 (*Scutomyia*). TYPE-LOC: (Ampang Jungle), nr Kuala Lumpur (Selangor), Malaya (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in tree holes, coconut shells and husks, bamboo stumps, and occasionally in fallen leaves and artificial containers. ♀♀ seldom attracted to man.

DISTRIBUTION: Malaya, India, Indonesia, Philippines, Indochina, Hainan I., Formosa, Solomon Is., Bismarck Arch., New Guinea, Mariana Is.

A. (S.) albopictus (Skuse)

1894 (1895), **3**(5): 20 (*Culex*). TYPE-LOC: Calcutta (West Bengal), India (US).

samarensis Ludlow 1903, **11**: 138. TYPE-LOC: Samar, Philippines (USNM).

lamberti Ventrillon 1904, **10**: 552 (*Stegomyia*). TYPE-LOC: Ankazobe, Diego-Suarez, Majunga, Madagascar (LU).

nigritia Ludlow 1910, **42**: 194 (*Stegomyia*). TYPE-LOC: Cotabato, Mindanao, Philippines (USNM).

quasinigritia Ludlow 1911, **18**: 129 (*Stegomyia*). TYPE-LOC: Turucan, Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae collected from tree holes, bamboo, leaf axils of several plants, rock pools and rarely from *Nepenthes* pitchers; also may be found in artificial containers. ♀♀ readily bite man.

DISTRIBUTION: Oriental Region, Australia, New Guinea, Mariana Is., Hawaiian Is., Japan, French Somaliland, Malagasy.

A. (S.) annandalei (Theobald)

1910, **4**: 10 (*Stegomyia*). TYPE-LOC: Sukna, Darjeeling Dist. (base of eastern Himalayas, 150 m) (West Bengal), India (IM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Immatures taken in tree holes and bamboo.

DISTRIBUTION: India, Andaman Is., Thailand, Indochina, China, Formosa, Indonesia, ? New Guinea.

A. (S.) gardnerii (Ludlow)

1905, **37**: 99 (*Stegomyia*). TYPE-LOC: Bulacao, Mindoro Is., Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken from bamboo and hollow palm stump. Adults collected hovering around humans and resting in woods and in nipa-palms area.

DISTRIBUTION: Philippines, Moluccas, Borneo.

A. (S.) gurneyi Stone & Bohart

1944, **46**: 217. TYPE-LOC: Bougainville, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually in tree holes and tree stumps, occasionally in leaf axils and artificial containers. ♀♀ have not been reported biting man.

DISTRIBUTION: Solomon Is.

A. (S.) hebrideus (Edwards)

1926, **17**: 102 (*variegatus* var.). TYPE-LOC: Hog Harbor, Espiritu Santo, New Hebrides Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes, coconut shells and husks, and artificial containers. ♀♀ persistent diurnal biters of man.

DISTRIBUTION: New Hebrides, Wuvulu I., Nuguria I., Solomon Is. (outlying), Santa Cruz Is., Torres Is., Banks Is.

A. (S.) hoguei Belkin
1962, **1**: 460. TYPE-LOC: Hutuna, Rennell I.,
Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in coconut shells.

DISTRIBUTION: Solomon Is.

A. (S.) paullusi Stone & Farner
1945, **58**: 155. TYPE-LOC: San Antonio, Samar,
Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in rock pools of
drying stream beds, also from coconut shells and husks,
fallen coconut fronds, rot holes on fallen logs, bamboo
and a hollow on a palm trunk. Adults taken hovering
about humans in forest.

DISTRIBUTION: Philippines, Taroena, Sangir
I., ? Celebes, ? Moluccas, ? Sumatra.

A. (S.) quasiscutellaris Farner & Bohart
1944, **57**: 120. TYPE-LOC: Guadalcanal, Solomon
Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in tree holes, coco-
nut husks and shells and artificial containers, some
found in pandanus leaf axils. Females reported biting
man in some areas, but in Solomons they rarely attack
man.

DISTRIBUTION: Solomon Is., Bismarck Arch.

A. (S.) scutellaris (Walker)
1859, **3**: 77 (*Culex*). TYPE-LOC: Aroe Is., (New
Guinea) (BMNH).

variegatus Doleschall 1859, **17**: 77 (*Culex*). TYPE-
LOC: Amboina I. (Moluccas) (TL).

zonatipes Walker 1861, **5**: 229 (*Culex*). TYPE-
LOC: Dorey, NW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae, presumably this species,
collected from artificial containers, coconut shells and
husks, fallen coconut fronds, tree holes and rot holes
on logs, and in split bamboo.

DISTRIBUTION: New Guinea, Moluccas, New
Hebrides, Philippines, Bismarck Arch., Solomon Is.,
Palau Is., Caroline Is.

A. (S.) varuae Belkin
1962, **1**: 478. TYPE-LOC: Hawaii, Graciosa Bay,
Santa Cruz I. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in tree fern
stump, in log hole, coconut half, fallen pandanus leaf,
tidacna shell and in rain barrels.

DISTRIBUTION: Solomon Is., Santa Cruz Is.

Subgenus **Aedimorphus** Theobald

A. (A.) alboscuteUellatus (Theobald)
1905, **3**: 80 (*Lepidotomyia*). TYPE-LOC: Simbang,
Huon Gulf, NE New Guinea (HNM).

argenteinotus Banks 1909, **4**: 547 (*Culex*). TYPE-
LOC: Pinagsalaan Well, Taytay, Rizal, Luzon,
Philippines (TL).

omurensis Yamada 1921, **10**: 73. TYPE-LOC:
Omura, Kyushu, Japan (IID).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in shallow pools on
the edge of the jungle, in the open and in wheel ruts.
♀♀ are annoying biters during the evening, they have
also been taken in carabao baited traps.

DISTRIBUTION: New Guinea, Bismarck Arch.
Solomon Is., Australia, India, Ceylon, Burma, Thai-
land, Philippines, Japan.

A. (A.) caecus (Theobald)
1901, **1**: 413 (*Culex*). TYPE-LOC: Klang mangrove
swamps, Selangor, Malaya (BMNH).

suknaensis Theobald 1910, **4**: 21 (*Culicada*).
TYPE-LOC: Sukna, Darjeeling Dist., Eastern
Himalayas, West Bengal, India (IM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Immature found in natural pools
in open jungle.

DISTRIBUTION: Malaya, India, Burma, Thai-
land, Indochina, Singapore, Sumatra, Java, New
Guinea, China, Mariana Is., ? Philippines.

A. (A.) inexpectatus Bonne-Wepster
1948, **19**: 318. TYPE-LOC: Baliem Vy, NW New
Guinea (LM).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (A.) lowisii (Theobald)
1910, **5**: 257 (*Reedomyia*). TYPE-LOC: Andaman
Is. (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Andaman Is., Moluccas.

A. (A.) nocturnus (Theobald) = *vexans* (Meigen)
1903, **3**: 159 (*Culex*; as sp). TYPE-LOC: Ba, Fiji
Is. (BMNH).

niger Theobald 1913, **1**: 164 (*Culex nocturnus* var.).
TYPE-LOC: Canada, New Caledonia (B).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in artificial con-
tainers, temporary grassy ground pools, puddles, and
hoof prints or in ponds and ditches following rains.

Females bite man readily.

DISTRIBUTION: Fiji Is., Indonesia, Philippines, Mariana Is., Palau Is., Caroline Is., New Guinea, Marshall Is., Ellice Is., New Caledonia, New Hebrides, Samoa Is., Friendly Is., Hawaii.

Subgenus **Edwardsaedes** Belkin

A. (E.) imprimens (Walker)

1861, 5: 144 (*Culex*). TYPE-LOC: Amboina I., (Moluccas) (BMNH).

auratus Leicester 1908, 3: 153 (*Culex*). TYPE-LOC: Malaya (TL).

brugi Edwards 1924, 14: 371. TYPE-LOC: Me-
rauke, SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in temporary pools and in flowing water in flooded areas, in deep or partial shade. ♀♀ bite man readily during the daytime.

DISTRIBUTION: Indonesia, New Guinea, Bismarck Arch., Solomon Is., Malaya, Thailand, Philippines, Japan.

Subgenus **Verrallina** Theobald

Laffoon 1946, 36: 228-45 (key to ♂♂, ♀♀, and 4th stage larvae, subgenus *Aedes*, Philippine Islands); King & Hoogstraal 1947, 37: 113-34 (keys to adults, ♂ genitalia and 4th stage larvae, subgenus *Aedes*, New Guinea); Belkin 1962, 1: 412-21 (keys to adults, ♂ genitalia, pupae, and 4th stage larvae, South Pacific).

A. (V.) azureosquamatus Bonne-Wepster

1948, 19: 320. TYPE-LOC: Bernhard Camp, NW New Guinea (LM).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (V.) bifoliatus King & Hoogstraal

1947, 37: 120. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. Adult taken in light trap. May.

DISTRIBUTION: New Guinea.

A. (V.) carmentis Edwards

1924, 14: 388. TYPE-LOC: Maravovo, Guadalcanal, Solomon Is., (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in heavily shaded, shallow, temporary jungle pools. ♀♀ are vicious biters in forested areas during the daytime.

DISTRIBUTION: Solomon Is., Bismarck Arch., New Guinea, Moluccas, Australia.

A. (V.) ceramensis Brug

1934, 25: 512. TYPE-LOC: Oewin and Warasiwa, Ceram, Moluccas (BMNH).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: Moluccas.

A. (V.) cuccioi Belkin

1962, 1: 420. TYPE-LOC: Matanikau Vy, Guadalcanal, Solomon Is., (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in rot hole at base of tree growing in stream bed, in rock pools and pot holes in stream bed, in flooded streams, in small, clear swampland streams and in flooded areas along creeks. A male was taken resting near a sandy pool in a stream bed.

DISTRIBUTION: Solomon Is.

A. (V.) foliformis King & Hoogstraal

1947, 37: 121. TYPE-LOC: Gusika, Finschhafen area, NE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown. Adults have been collected in light traps. Apr., May, Aug., Dec.

DISTRIBUTION: New Guinea.

A. (V.) funereus (Theobald)

1903, 3: 292 (*Skusea*). TYPE-LOC: Queensland, Australia (BMNH).

basalis Taylor 1912.

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in fresh water swamps. ♀♀ have been taken biting man.

DISTRIBUTION: Australia, New Guinea, Bismarck Arch., Solomon Is.

A. (V.) incertus (Edwards)

1922, 10: 264-468 (nom. nov. for *taeniata* Leicester 1908, non Wiedemann 1828).

taeniata Leicester 1908, 3: 190 (*Aioretomyia*).

TYPE-LOC: Kuala Lumpur (Selangor Malaya), (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Malaya, Borneo, ? New Guinea.

A. (V.) leilae King & Hoogstraal

1947, 37: 121. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. Adults taken in light traps. Mar., Apr.

DISTRIBUTION: New Guinea.

A. (V.) lineatus (Taylor)

1914, :191 (*Lepidotomyia*). TYPE-LOC: Lakekamu Gold Field and Mekeo Dist., SE New Guinea (US).
ornata Theobald 1905, 3: 79 (non Meigen 1818) (*Skusea funerea* var.). TYPE-LOC: Sattelberg, Huon Gulf, and Friedrich-Wilhelmshafen, NE New Guinea (HNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae generally found in temporary ground pools in cleared and partially shaded areas, rarely occur in undisturbed jungle areas. ♀♀ are voracious daytime biters in shaded areas.

DISTRIBUTION: New Guinea, Bismarck Arch., Solomon Is., Moluccas, New Hebrides, Java.

A. (V.) mccormicki Belkin

1962, 1: 420. TYPE-LOC: Lunga area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in temporary ground pools, in deeply shaded jungle and in partially open areas. ♀♀ apparently do not attack man normally.

DISTRIBUTION: Solomon Is.

A. (V.) milnensis King & Hoogstraal

1947, 37: 122. TYPE-LOC: Milne Bay, SE New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (V.) multifolium King & Hoogstraal

1947, 37: 122. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. Adults taken in light trap. Jan., May.

DISTRIBUTION: New Guinea.

A. (V.) neomacrodixoa King & Hoogstraal

1947, 37: 124. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown. Adults taken in light traps.

DISTRIBUTION: New Guinea.

A. (V.) panayensis Ludlow

1914, 21: 159. TYPE-LOC: Iloilo, Panay, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Larvae collected in slightly brackish water in beached canoe and in shaded, leafy, slightly brackish pool in a nipa palm swamp at extreme upper limit of tidal zone. Adults taken biting man in man-

grove swamps during daytime and resting in a crab hole in a mangrove swamp.

DISTRIBUTION: Philippines, Moluccas, New Guinea.

A. (V.) parasimilis King & Hoogstraal

1947, 37: 125. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken from a crayfish hole in rain forest and from pools at edge of a swamp. ♀♀ readily bite man during daytime.

DISTRIBUTION: New Guinea.

A. (V.) quadrifolium Brug

1934, 25: 512. TYPE-LOC: Torpedoboot R, SW New Guinea (BMNH).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (V.) quadrispinatus King & Hoogstraal

1947, 37: 126. TYPE-LOC: Toem, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (V.) reesi King & Hoogstraal

1947, 37: 127. TYPE-LOC: Vivigani, Goodenough Is., D'Entrecasteaux Is. (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (V.) sentanius King & Hoogstraal

1947, 37: 128. TYPE-LOC: Poe Village, south side of L. Sentani, Hollandia area, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in hog wallow in a sago swamp and shallow boot prints in dense forest. Adults taken in light traps. Apr., May, June, Dec.

DISTRIBUTION: New Guinea.

A. (V.) similis (Theobald)

1910, 5: 189 (*Pseudoskusea*). TYPE-LOC: Kuranda, Q., Australia (BMNH).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Australia, Bismarck Arch., ? Moluccas, ? New Guinea.

A. (V.) simplicus King & Hoogstraal

1947, 37: 130. TYPE-LOC: Hollandia area, NW

New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. Adult taken in light trap at edge of forest.

DISTRIBUTION: New Guinea.

A. (V.) trispinatus King & Hoogstraal

1947, **37**: 130. TYPE-LOC: Milne Bay, SE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

Subgenus **Leptosomatomyia** Theobald

A. (L.) aurimargo Edwards

1922, **13**: 94. TYPE-LOC: Moa I., northern Australia (US).

lateralis Theobald 1905, **3**: 110 (*Leptosomatomyia*).

TYPE-LOC: Muina, NE New Guinea (HNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes and coconut shells.

DISTRIBUTION: Australia, New Guinea.

A. (L.) medialis Brug

1932, **23**: 79. TYPE-LOC: Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

A. (L.) variepictus King & Hoogstraal

1946, **48**: 98. TYPE-LOC: 1,430 m, Mt Dafonsero, Cyclops Range, Hollandia area, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Larvae collected in tree holes.

DISTRIBUTION: New Guinea.

Genus **ARMIGERES** Theobald

Subgenus **Armigeres** Theobald

Lee 1944, 80 (key to Australasian species, larvae); Lee 1944, **69**: 220 (key to Australasian species, adults); Penn 1949, **3**: 64 (key to pupae of *breinli* and *milnensis*, New Guinea); Peters 1963, **32**: 10 (distribution and diagnosis of New Guinea species).

A. (A.) breinli (Taylor)

1914, :186 (*Neosquamomyia*). TYPE-LOC: Milne Bay, SE New Guinea (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from pools and hollow logs near native villages; also in putrid water in pig wallows, coconut shells and bamboo stumps.

Adults reared and taken biting man outdoors during daytime, resting in crab holes, and captured in light traps.

DISTRIBUTION: New Guinea, Bismarck Arch., Solomon Is.

A. (A.) denbesteni Brug

1925, **15**: 345. TYPE-LOC: Piroe, Ceram, Moluccas (BMNH).

spathulatus Brug 1939, **82**: 101. TYPE-LOC:

Ralio Sawalit, Ceram, Moluccas (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae breeding in ditches carrying refuse water of the sago preparation in various villages.

DISTRIBUTION: Moluccas, New Guinea.

A. (A.) lacuum Edwards

1922, **13**: 97. TYPE-LOC: Ile des Lacs (now Garove, Vitu Is.), Bismarck Arch. (BMNH).

STAGES DESCRIBED: ♂.

BIONOMICS: Larvae found in putrid water in tree holes and coconuts.

DISTRIBUTION: Bismarck Arch., New Guinea.

A. (A.) malayi (Theobald)

1901, **2**: 258 (*Uranotaenia*). TYPE-LOC: Mang Jungle, Selangor, Malaya (BMNH).

fusca Theobald 1903, **3**: 135 (*Desvoidea*). TYPE-LOC: Jugra, Malaya (BMNH).

russelli Baisas 1935, **56**: 490. TYPE-LOC: Ma-siit, Calauan, Laguna, Luzon, Philippines (PBH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Unknown. Sept.

DISTRIBUTION: Malaya, Thailand, China, Indonesia, New Guinea.

A. (A.) milnensis Lee

1944, **69**: 215. TYPE-LOC: Milne Bay, SE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae in putrid water in tree holes, septic tanks and drains. Adults were taken resting outdoors and biting man during daytime.

DISTRIBUTION: New Guinea.

A. (A.) papuensis Peters

1963, **32**: 4. TYPE-LOC: Maprik, Sepik Dist., NE New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in foul water in sago palms, banana stumps, drains, septic tanks and small collections of surface water.

DISTRIBUTION: New Guinea.

Genus **CULEX** Linnaeus

Knight, Bohart & Bohart 1944, 41-48, 60-63 (keys to adults, distribution and larval habitat, Australasian Region); Lee 1944, 86-104 (key to larvae, Australasian Region).

Subgenus **Lutzia** Theobald**C. (L.) halifaxii** Theobald

1903, **3**: 231. TYPE-LOC: Dindings, Straits Settlements, Malaya (BMNH).

multimaculosus Leicester 1903, **3**: 155. TYPE-LOC: Malaya (BM).

aureopunctis Ludlow 1910, **42**: 195. TYPE-LOC: Cottabato, Mindanao, Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in various permanent or temporary ground pools and in artificial containers; also collected in rock pools, stream margins, and tree holes. Larvae are predaceous on other mosquitoes and insects and are cannibalistic. Females are rarely attracted to man.

DISTRIBUTION: Malaya, India, Ceylon, Thailand, China, Indonesia, Philippines, New Guinea, Bismarck Arch., Solomon Is., Australia.

Subgenus **Neoculex** Dyar**C. (N.) brevipalpis** (Giles)

1902, :384 (*Stegomyia*). TYPE-LOC: Shahjahanpur (United Provinces), India (BMNH).

longipes Theobald 1901, **2**: 68. TYPE-LOC: Singapore (BMNH).

macropus Blanchard 1905 :327 (nom. nov. for *longipes* Theobald, non Fabricius 1850).

uniformis Leicester 1908, **3**: 136 (*Melanoconion*). TYPE-LOC: Malaya (BMNH).

fidelis Dyar 1920, **8**: 180. TYPE-LOC: Los Baños (Laguna, Luzon), Philippines (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken in tree holes, bamboo, and occasionally in artificial containers.

DISTRIBUTION: India, Ceylon, Thailand, Indochina, China, Formosa, Ryukyu-Retto, Philippines, Malaya, Singapore, Indonesia, New Guinea, Bismarck Arch.

C. (N.) caeruleus King & Hoogstraal

1947, **49**: 67. TYPE-LOC: Samboga R., Dobodura, SE New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in pools in flat swampy forest.

DISTRIBUTION: New Guinea.

C. (N.) crassistylus Brug

1934, **25**: 516. TYPE-LOC: Inawattan, NW New Guinea (BMNH).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

C. (N.) leonardi Belkin

1962, **1**: 245. TYPE-LOC: West Poha Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L,

BIONOMICS: Larvae collected in jungle swamps with dense vegetation.

DISTRIBUTION: Solomon Is.

C. (N.) pedicellus King & Hoogstraal

1947, **49**: 65. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

Subgenus **Mochthogenes** Edwards**C. (M.) cataractarum** Edwards

1923, **14**: 7. TYPE-LOC: Rabaul, New Britain, (Bismarck Arch.) (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Bismarck Arch., New Guinea.

C. (M.) malayi (Leicester)

1908, **3**: 184 (*Aedes*). TYPE-LOC: Kuala Lumpur, (Selangor), Malaya (BMNH).

nigrescens Theobald 1907, **4**: 540 (non Theobald 1907, 248) (1 ♂ only of type series; *Aedes*).

TYPE-LOC: Castle Rock (N Kanara, Bombay), India (BMNH).

aedes Leicester 1908 **3**: 189 (*Aioretomyia*). TYPE-LOC: Kuala Lumpur (Selangor), Malaya (BMNH).

laureli Baisas 1935, **57**: 176. TYPE-LOC: Malaya, Bukidnon, Mindanao, Philippines (PBH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Immatures found in small rock pools along mountain streams.

DISTRIBUTION: Malaya, India, Ceylon, Nepal, Maldives, Andaman Is., Burma, Thailand, Indochina, China, Indonesia, Philippines, Formosa, New Guinea.

Subgenus **Lophoceraomyia** Theobald

Edwards 1928, **18**: 275-79 (keys to 4th instar larvae); Mattingly, 1949, **18**: 225-72 (keys to 4th instar larvae); Belkin 1962, **1**: 248-72 (keys to adults, ♂ genitalia, pupae and larvae, South Pacific).

C. (L.) atracus Colless

1960, **84**: 385. TYPE-LOC: Kavieng, New Ireland, Bismarck Arch. (CSIR).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: Bismarck Arch.

C. (L.) becki Belkin

1962, **1**: 265. TYPE-LOC: Sprague Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from crab holes. Adults reared and taken in crab holes.

DISTRIBUTION: Solomon Is.

C. (L.) bergi Belkin

1962, **1**: 258. TYPE-LOC: Poha R. about 5 km from coast, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in rock pools and pools in blocked stream beds. Adults taken resting on moist rocky banks of stream in vicinity of breeding site.

DISTRIBUTION: Solomon Is.

C. (L.) christiani Colless

1960, **84**: 389. TYPE-LOC: Minj, 1,570 m, Western Highlands, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Type series bred from larvae collected in shallow pools with emergent vegetation.

DISTRIBUTION: New Guinea.

C. (L.) cylindricus Theobald

1903, **3**: 202. TYPE-LOC: S Queensland, Australia (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in shallow ground pools.

DISTRIBUTION: Australia, Bismarck Arch.

C. (L.) digoelensis Brug

1932, **23**: 81. TYPE-LOC: Upper Digoel R., SW New Guinea (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown. Some adults collected in light trap. Jan.

DISTRIBUTION: New Guinea.

C. (L.) franclemonti Belkin

1962, **1**: 256. TYPE-LOC: Munda, New Georgia, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in dense jungle swamps, in swamp pools and along margin of stream.

DISTRIBUTION: Solomon Is.

C. (L.) fraudatrix (Theobald)

1905, **3**: 94 (*Lophoceratomyia*). TYPE-LOC: Friedrich-Wilhelmshafen, NE New Guinea (HNM).

annulata Taylor 1916, **41**: 571. TYPE-LOC:

Stapleton and Daly R., N. T., Australia (LU).

cairnsensis Taylor 1919, **43**: 837 (*Lophoceratomyia*).

TYPE-LOC: Cairns, Q., Australia (US).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Larvae known from temporary ground pool, generally shaded.

DISTRIBUTION: New Guinea, Australia, Bismarck Arch.

C. (L.) hurlbuti Belkin

1962, **1**: 266. TYPE-LOC: Tenaru area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in leaf axils of a pandanaceous plant (probably *Sararanga*, sp.) growing in densely shaded nipa swamp, in typical pandanus and in leaf axils of an "arumlake" plant. Adults reared.

DISTRIBUTION: Solomon Is.

C. (L.) kuhnsi King & Hoogstraal

1955, **57**: 1. TYPE-LOC: Doromena, Hollandia area, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in tree holes, log holes, and fallen palm bracts. Adults reared. Feb., Mar., Dec.

DISTRIBUTION: New Guinea.

C. (L.) laffooni Belkin

1962, **1**: 261. TYPE-LOC: Halavo, Florida, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in rock crevices along jungle stream.

DISTRIBUTION: Solomon Is.

C. (L.) lairdi Belkin

1962, **1**: 257. TYPE-LOC: Poha Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually taken in jungle swamps, once each in tree hole and along stream. Adults taken in day and night catches (not biting man) and resting on tree trunks.

DISTRIBUTION: Solomon Is.

C. (L.) leei King & Hoogstraal

1955, **57**: 4. TYPE-LOC: "Rozeboom Pond", nr Pollimac road, Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in a pond and

large log hole. Adults reared. Feb., May.

DISTRIBUTION: New Guinea.

C. (L.) marksae King & Hoogstraal

1955, **57**: 6. TYPE-LOC: Hollandia, 75 m, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. ♂ taken in light trap. Apr.

DISTRIBUTION: New Guinea.

C. (L.) ornatus (Theobald)

1905, **3**: 100 (*Melanoconion*). TYPE-LOC: Friedrich-Wilhelmshafen, NE New Guinea (HNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae taken from deep, well shaded hole; a partly shaded, muddy leaf-filled seepage pool at edge of sago swamp; and in a boar hoof print in a dark sago swamp. Adults collected resting on buttresses of rain forest trees. 2 ♀♀ were taken "while attempting to bite" (King & Hoogstraal, 1955). Adults also taken in light traps. Dec., June.

DISTRIBUTION: New Guinea, Bismarck Arch.

C. (L.) oweni Belkin

1962, **1**: 259. TYPE-LOC: Tributary of Matanikan R., Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in rock holes and in pools in rocky stream beds; one collection taken from a tree hole. Adults reared. Dec.

DISTRIBUTION: Solomon Is.

C. (L.) perryi Belkin

1962, **1**: 268. TYPE-LOC: Baiasuma area, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in leaf axils of pandanus. Adults reared. Apr.

DISTRIBUTION: Solomon Is.

C. (L.) petersi Colless

1960, **84**: 388. TYPE-LOC: Minj, 1,570 m, Western Highlands, NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in shallow pools with emergent vegetation. Adults reared.

DISTRIBUTION: New Guinea.

C. (L.) pseudornatus Colless

1960, **84**: 386. TYPE-LOC: Edie Cr., NE New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

C. (L.) solomonis Edwards

1929, **20**: 316 (*fraudatrix* var.). TYPE-LOC: Manaba, Malaita, Solomon Is. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in all types of ground water, from permanent jungle swamps to stream margins and temporary pools, also taken in tree hole and tin cans. Adults collected resting on tree trunk or other vegetation.

DISTRIBUTION: Solomon Is.

C. (L.) uniformis (Theobald)

1905, **16**: 245 (*Lophoceraomyia*). TYPE-LOC: Peradeniya (Central), Ceylon (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae (possibly *uniformis*) collected in artificial containers, tree hole and in a puddle.

DISTRIBUTION: Ceylon, India, Hainan I., New Guinea.

C. (L.) walukasi Belkin

1962, **1**: 264. TYPE-LOC: Sprague Swamp, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Immatures found in tree holes and artificial containers, occasionally in coconut shells.

DISTRIBUTION: Solomon Is.

C. (L.) winkleri Belkin

1962, **1**: 260. TYPE-LOC: Tributary of Matanikan R., Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in rock pools and rock holes.

DISTRIBUTION: Solomon Is.

Subgenus **Culiciomyia** Theobald

King & Hoogstraal 1947, **59**: 143-54 (keys to adults and 4th stage larvae, New Guinea); Belkin 1962, **1**: 228-34 (keys to adults, ♂ genitalia, pupae, larvae, South Pacific).

C. (C.) fragilis Ludlow

1903, **11**: 142. TYPE-LOC: Oras, Samar, Philippines (USNM).

fuscus Theobald 1905, **16**: 242 (*Trichorhynchus*).

TYPE-LOC: Peradeniya, Ceylon (BMNH).

inornata Theobald 1907, **4**: 227 (*Culiciomyia*).

TYPE-LOC: Kuching, Sarawak, (Borneo) (BMNH).

ceylonica Theobald 1907, **4**: 236 (*Culiciomyia*).

TYPE-LOC: Peradeniya (Central), and Maskeliya, Ceylon (BMNH).

graminis Leicester 1908, **3**: 158. TYPE-LOC: Malaya (TL).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in semipermanent or temporary ground pools, especially with algal-filled or foul water in various degrees of shade; also in large tree and log holes and artificial containers. Adults collected resting on large forest tree buttresses, also taken in light traps. Jan. through June.

DISTRIBUTION: Philippines, India, Ceylon, Thailand, Malaya, Indonesia, New Guinea, Solomon Is.

C. (C.) fuscicinctus King & Hoogstraal

1946, **59**: 145. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown. ♂ taken in light trap. Apr.

DISTRIBUTION: New Guinea.

C. (C.) nailoni King & Hoogstraal

1946, **59**: 143. TYPE-LOC: Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae found in crab hole in rain forest; adults reared.

DISTRIBUTION: New Guinea.

C. (C.) pallidothorax Theobald

1905, **1**: 32. TYPE-LOC: India (BMNH).

albopleura Theobald 1907, **4**: 456. TYPE-LOC: India (BMNH).

annuloabdominalis Theobald 1910, **5**: 236 (*Culicomyia*). TYPE-LOC: Peradeniya (Central) and Hakgala; Ceylon (TL).

STAGES DESCRIBED: ♂, ♀, P, L, E.

BIONOMICS: Larvae primarily collected in large artificial containers, occasionally in ground pools. Overwintering adults found in moist sand caves (Japan).

DISTRIBUTION: India, Ceylon, Nepal, Burma, Thailand, Malaya, China, Formosa, Ryukyu-Retto, Japan, Moluccas, New Guinea.

C. (C.) papuensis Taylor

1914, (62): 201 (*Melanoconion*). TYPE-LOC: Lakekamu Gold Field, SE New Guinea (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in tree holes, artificial containers and ground pools. A couple of collections were made in putrid water in hollow sago trunks. Adults have been collected resting on tree buttresses.

DISTRIBUTION: New Guinea, Bismarck Arch., Solomon Is.

C. (C.) pullus Theobald

1905, **3**: 87. TYPE-LOC: Muina, NE New Guinea (HNM).

muticus Edwards 1923, **14**: 6. TYPE-LOC: Rabaul, New Britain, Bismarck Arch. (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae are commonly found in many types of ground pools but utilize a wide range of breeding places including artificial containers, tree holes, coconut husks and shells. Adults taken resting on tree buttresses and in light traps.

DISTRIBUTION: New Guinea, Moluccas, Australia, Bismarck Arch., Solomon Is.

C. (C.) ruthi Peters

1958, **27**: 91. TYPE-LOC: Mapamoiwa, Fergusson I., D'Entrecasteaux Is., New Guinea (CSIR).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Adults captured flying in entrance of small crab holes in partial shade on the beach.

DISTRIBUTION: New Guinea.

C. (C.) spathifurca (Edwards)

1915, **5**: 284 (*Culicomyia*). TYPE-LOC: Kuching, Sarawak, Borneo (BMNH).

stylifurcatus Carter & Wijesundara 1948, **23**: 145.

TYPE-LOC: Ratmalana and Palwate Ganga Rs. at Dinipitiya, Ceylon (BMNH).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae of type series collected in pots of urine.

DISTRIBUTION: Borneo, Java, Singapore, Malaya, Thailand, Philippines, Ceylon, Maldives, New Guinea.

Subgenus **Acallyntrum** Stone & Penn

Stone & Penn 1948, **50**: 109-20 (keys to ♀♀, ♂ genitalia, 4th instar larvae and pupae) Belkin 1962, **1**: 223-27 (keys to adults, ♂ genitalia, pupae and larvae, Solomon Is.).

C. (A.) belkini Stone & Penn

1948, **50**: 114. TYPE-LOC: West Cape, Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in leaf axils of pandanus. Adults reared.

DISTRIBUTION: Solomon Is.

C. (A.) bicki Stone & Penn

1947, **37**: 89. TYPE-LOC: Toem, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in axils of sago palm and pandanus.

DISTRIBUTION: New Guinea.

C. (A.) binigrolineatus Knight & Rozeboom
1945, **47**: 289. TYPE-LOC: L Sentani, 75 m,
Hollandia, NW New Guinea (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken from leaf axils of sago
palm in a sago swamp.

DISTRIBUTION: New Guinea.

C. (A.) pallidiceps (Theobald)

1905, **3**: 101 (*Melanoconion*). TYPE-LOC: Fried-
rich-Wilhelmshafen, NE New Guinea. (HNM).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown

DISTRIBUTION: New Guinea.

C. (A.) perkinsi Stone & Penn

1948, **50**: 110. TYPE-LOC: Umasani R. Vy,
Guadalcanal, Solomon Is. (USNM).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae taken in leaf axils of various
Pandanaeae.

DISTRIBUTION: Solomon Is.

Subgenus **Culex** Linnaeus

Belkin 1962, **1**: 183-218 (keys to adults, ♂ genitalia,
pupae and larvae, South Pacific).

C. (C.) alis Theobald

1903, **3**: 167. TYPE-LOC: Christmas I. (BMNH).

STAGES DESCRIBED: ♂, ♀.

BIONOMICS: Unknown.

DISTRIBUTION: Christmas I., New Guinea,
Moluccas.

C. (C.) annulirostris Skuse

1889, (2)**3**: 1737. TYPE-LOC: Blue Mountains and
Berowra, N. S. W., Australia (MM).

bancroftii Theobald 1901, **1**: 367. TYPE-LOC:
Burdary, Q., Australia (BMNH).

jepsoni Bahr 1912, **1**: 18. TYPE-LOC: Fiji Is.
(BMNH).

palpalis Taylor 1912, **1a**: 29. TYPE-LOC: Um-
brawarra Cr., N. T., Australia (US).

somerseti Taylor 1912, :28. TYPE-LOC: Somer-
set, Q., Australia (US).

consimilis Taylor 1913, :8 (*Culicelsa*). TYPE-
LOC: Ayr, Q., Australia (US).

simplex Taylor 1914, (4): 698 (*Culicelsa*). TYPE-
LOC: Townsville, Queensland, Australia (US).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae breed in any type of water
on the ground and in various kinds of artificial con-
tainers. ♀♀ bite man readily from late afternoon
throughout the night, indoors and out.

DISTRIBUTION: Southern and western Aus-

tralasian Region, Indonesia, Philippines.

C. (C.) bihamatus Edwards

1926, **17**: 107. TYPE-LOC: Atamboea, Timor
(BMNH).

STAGES DESCRIBED: ♂.

BIONOMICS: Unknown.

DISTRIBUTION: Timor.

C. (C.) bitaeniorhynchus Giles

1901, **13**: 607. TYPE-LOC: Travancore, India (TL).
Synonyms: see Stone, Knight & Starck 1959,
p. 243.

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae usually found in ground
pools or ponds with mats of green algae. ♀♀ are re-
ported to attack man readily, especially at night.

DISTRIBUTION: Oriental Region, Australia,
New Caledonia, New Guinea, Palau Is., Rykyu-Retto,
Japan, Korea, Soviet Far East, China, Gambia, Senegal,
Liberia, Upper Volta, Dahomey, Middle Congo,
Ubangi-Shari, Sudan, Belgian Congo, Uganda, Kenya,
Natal, Tanganyika, Southern Rhodesia, Mozambique,
Madagascar.

C. (C.) gelidus Theobald

1901, **2**: 20. TYPE-LOC: Selangor, Malaya
(BMNH).

cuneatus Theobald 1901, **2**: 22 (as var.). TYPE-
LOC: Taipang, Perak, Malaya and Guilon, Tra-
vancore, India (BMNH).

bipunctata Theobald 1907, **4**: 374 (*Leucomyia*, as
var.). TYPE-LOC: India and Sarawak (Borneo)

(BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae found in ground pools
with emergent vegetation.

DISTRIBUTION: Malaya, Singapore, Indone-
sia, New Guinea, Philippines, Formosa, Japan, China,
Indochina, Thailand, Burma, Nepal, India, Pakistan,
Ceylon.

C. (C.) litoralis Bohart

1946, **59**: 43. TYPE-LOC: North shore of Rota Is.,
Mariana Is. (USNM).

STAGES DESCRIBED: ♂, ♀, L.

BIONOMICS: Larvae collected in brackish water
of coral rock holes and occasionally in artificial
containers along the beach.

DISTRIBUTION: Mariana Is., Singapore, New
Guinea, Samoa Is., Society Is.

C. (C.) mimulus Edwards

1915, **5**: 284. TYPE-LOC: Sarawak, Borneo (BMN
(BMNH).

- mossmani* Taylor 1915, **40**: 181. TYPE-LOC: Mossman, Q., Australia (US).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae taken from large artificial containers, grass covered ditches and puddles; occasionally from tree holes and bamboos.
DISTRIBUTION: Sarawak, Indonesia, New Guinea, Australia, Philippines, Singapore, Malaya, Indochina, China, Thailand, Burma, Nepal, India, Ceylon.
- C. (C.) miraculosus** Bonne-Wepster 1937, **26**: 92. TYPE-LOC: Anggi Lakes, 2300 m, NW New Guinea (LU).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae found in small artificial ponds and drainage ditches (partly grass-covered); also from open muddy pools without vegetation.
DISTRIBUTION: New Guinea.
- C. (C.) omani** Belkin 1962, **1**: 210. TYPE-LOC: Chacon Swamp, Guadalcanal, Solomon Is. (USNM).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae collected in ground pools in dense jungle swamps.
DISTRIBUTION: Solomon Is.
- C. (C.) pseudovishnui** Colless 1957, **51**: 88. TYPE-LOC: Singapore (BMNH).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae found in various ground pools and slow moving water. Females enter houses and bite at dusk.
DISTRIBUTION: Oriental Region, ? New Guinea.
- C. (C.) quinquefasciatus** Say 1823, **3**: 10. TYPE-LOC: Mississippi R., USA (TL).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae found near human habitations and breed in foul ground pools, large and small artificial containers and ditches. Females readily bite man at night.
REMARKS: *C. quinquefasciatus* is a member of the *pipiens* complex and considered a subspecies of *pipiens* by some authorities. Many workers still use the synonym *C. fatigans*. Wiedeman rejects this synonymy.
DISTRIBUTION: Cosmopolitan.
- C. (C.) sinensis** Theobald 1903, **3**: 180 (*gelidus* var.). TYPE-LOC: Shaohyling, China (BMNH).
sepositus Leicester 1908, **3**: 152. TYPE-LOC: Kuala Lumpur (Selangor), Malaya (TL).
tenax Leicester 1908, **3**: 167 (*Taeniorhynchus*).
TYPE-LOC: Kuala Lumpur (Selangor), Malaya (TL).
STAGES DESCRIBED: ♂, ♀, P, L, E.
BIONOMICS: Larvae occur in large pools with emergent vegetation, including rice paddies. ♀♀ have been taken biting horses and man at night.
DISTRIBUTION: China, USSR (Maritime Province), Korea, Japan, Ryukyu-Retto, Formosa, Philippines, Indonesia, Malaya, Thailand, Burma, India, Ceylon, New Guinea.
- C. (C.) sitiens** Wiedemann 1828, **1**: 542. TYPE-LOC: Sumatra (ZMC).
Synonyms: see Stone, Knight & Starcke, 1959, p. 260.
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae found in brackish and fresh water in ground pools, ponds, swamps, ditches and tidal marshes with clear water, occasionally muddy.
DISTRIBUTION: Coastal: Oriental Region to Okinawa, East Africa (Tanganyika to southern Arabian Peninsula), Madagascar, northern Australia and Pacific Is. to Samoa Is.
- C. (C.) solitarius** Bonne-Wepster 1938, **27**: 394. TYPE-LOC: Anggi Lakes, 250 m, NW New Guinea (LU).
STAGES DESCRIBED: ♂, ♀, L.
BIONOMICS: Larvae collected in slow, shallow streams.
DISTRIBUTION: New Guinea, ? Java.
- C. (C.) squamosus** (Taylor) 1914, **(4)**: 691 (*Culicada*). TYPE-LOC: Townsville, Q., Australia (US).
annulata Theobald 1905, **3**: 98 (*Trichopronomyia*).
TYPE-LOC: Friedrich-Wilhelmshafen, NE New Guinea (HNM).
annulirostris Taylor 1914, **(4)**: 696 (*Leucomyia*).
TYPE-LOC: Townsville and Ching Do, Q., Australia (US).
taylori Edwards 1921, **12**: 78 (nom. nov. for *annulirostris* Taylor, non skuse 1889).
STAGES DESCRIBED: ♂, ♀, P, L.
BIONOMICS: Larvae typically found in dense mats of filamentous green algae in fresh ground water pools and slow stream margins.
DISTRIBUTION: Australia, Moluccas, New Guinea, Solomon Is.
- C. (C.) vicinus** (Taylor) 1916, **41**: 569 (*Leucomyia*). TYPE-LOC: Stapleton, N. T., Australia (US).

annulata Taylor 1914, (4): 695 (*Leucomyia*). TYPE-LOC: Townsville, Q., Australia (US).
basicinctus Edwards 1921, 12: 78 (nom. nov. for *annulata* Taylor, non Schrank, 1776).
 STAGES DESCRIBED: ♂, ♀.
 BIONOMICS: Unknown.
 DISTRIBUTION: Australia, New Guinea.

C. (C.) whitmorei (Giles)

1904, 7: 367 (*Taeniorhynchus*). TYPE-LOC: Camp Statsenburg (Angeles), Pampanga (Luzon), Philippines (BMNH).

argenteus Ludlow 1905, 37: 98 (*Taeniorhynchus*).
 TYPE-LOC: Angeles, Pampanga, Luzon, Philippines (USNM).

plegepennis Theobald 1907, 4: 375 (*Leucomyia*).
 TYPE-LOC: Kobe (Honsu), Japan (BMNH).

albus Leicester 1908, 3: 148. TYPE-LOC: Kuala Lumpur (Selangor), Malaya (BMNH).

loricatus Leicester 1908, 3: 151. TYPE-LOC: Kuala Lumpur (Selangor), Malaya (BMNH).

STAGES DESCRIBED: ♂, ♀, P, L.

BIONOMICS: Larvae collected in ground pools, rice paddies, and along edges of slow moving streams.

DISTRIBUTION: Oriental Region, China, Korea, USSR (Maritime Province), Japan, New Guinea.

C. (C.) whittingtoni Belkin

1962, 1: 204. TYPE-LOC: Munda, New Georgia, Solomon Is. (USNM).

STAGES DESCRIBED: L.

BIONOMICS: Unknown.

DISTRIBUTION: Solomon Is.

NOMEN DUBIUM

ventralis Walker

1865, 8: 103 (*Culex*). TYPE-LOC: New Guinea (TL).

STAGES DESCRIBED: ♀.

BIONOMICS: Unknown.

DISTRIBUTION: New Guinea.

TYPE LOCALITIES

All type localities of mosquitoes originally described from the Papuan Subregion are given followed by a list of species from these localities. They are arranged alphabetically under major island divisions: Bismarck Archipelago, D'entrecasteaux Islands, Molucca Islands, New Guinea, Solomon Islands and Timor.

All nominal species, regardless of their present taxonomic status, are listed under each appropriate type locality and are arranged as in Stone, Knight & Starcke (1959). Senior synonyms are indicated by parentheses after their junior synonyms.

Species reported from the Papuan Subregion but

described from extralimital areas are listed under the following faunal areas: Australian, Ethiopian, Indomalayan, Oriental, Western Pacific Is., Palaearctic, and South Pacific. The limits of most of these areas, as used, follow those of Belkin (1962) except that the Ethiopian include Belkin's Malagasy area; his South and North Australian areas combined, and the Solomon Islands transferred from the South Pacific to the Papuan area.

Nominal species described from areas outside the Papuan Subregion are not segregated by type locality, but are listed under political or geographical divisions. Specific type localities can be found in the check list under the relevant valid species.

PAPUAN SUBREGION
 BISMARCK ARCHIPELAGO

Garove Is.

Ille des Caco (=Garove I.): *Armigeres (A.) lacuum* Edwards.

Green Is.

Nissan I.: *Tripterooides (T.) nissanensis* Lee.

Manus I.

Lorengau R.: *Tripterooides (T.) lorengau* Peters.

New Britain

Herbertshöhe: *Anopheles (C.) punctulatus* Dönitz.

Rabaul: *Aedes (G.) fimbripes* Edwards; *Culex (M.) cataractarum* Edwards.

New Hanover

Noipuas: *Tripterooides (T.) novahanoverae* Peters.

New Ireland

Kavieng: *Bironella hollandi* Taylor; *Uranotaenia paralaralis* Peters; *Aedes (F.) wallacei* Edwards; *Culex (L.) atracus* Colless.

D'ENTRECASTEAUX IS.

Fergusson I.

Mapamoiva: *Culex (C.) ruthi* Peters.

Goodenough I.

Vivigani: *Aedes (V.) reesi* King & Hoogstraal.

MOLUCCAS

Amboina I.

Amboina I.: *Toxorhynchites amboinensis* (Doleschall); *T. (T.) splendens* ssp. *subulifer* (Doleschall); *Aedes (F.) aureostriatus* (Doleschall); *A. (S.) variegatus* Doleschall (= *scutellaris*); *A. (N.) imprimens* (Walker); *Armigeres ventralis* (Walker).

Saparoea: *Aedes (G.) tonsus* Edwards.

Ceram I.

- Hoeloeng: *Tripteroides (T.) brevipalpis* Brug.
 Oewin: *Tripteroides (T.) brevipalpis* Brug; *Aedes (V.) ceramensis* Brug.
 Piroe: *Bironella travestita* (Brug); *Armigeres (A.) denbesteni* Brug.
 Ralio Sawalit: *Armigeres (A.) spathulatus* Brug (= *A. denbesteni*).
 Warasiwa: *Tripteroides (T.) brevipalpis* Brug; *Aedes (V.) ceramensis* Brug.

Halmaheira I.

- Halmaheira: *Heizmannia aurea* Brug.

Moluccas

- Moluccas: *Anopheles (C.) moluccensis* Swellengrebel & Swellengrebel de Graaf (= *farauti*); *A. (C.) tessellatus* var. *orientalis* Swellengrebel & Swellengrebel de Graaf.

Ternate I.

- Ternate: *Aedes (F.) derooki* Brug.

NEW GUINEA

NE New Guinea

- Ami: *Uranotaenia amiensis* Peters; *U. paranova-guinensis* Peters.
 Dreyden: *Aedes (F.) kochi* Dönitz.
 Edie Cr.: *Culex (L.) pseudornatus* Colless.
 Finschhafen: *Aedes (V.) foliformis* King & Hoogstraal.
 Goroka: *Uranotaenia novaguinensis alticola* Peters.
 Hikinumu Plantation: *Aedes (M.) doddi* Taylor (= *tremulus*).
 Lae: *Aedes (F.) clintoni* Taylor.
 Madang (Friedrich-Wilhelmshafen, Muina): *Bironella bironelli* Christophers; *B. gracilis* Theobald (= *bironelli*); *Tripteroides (T.) bimaculipes* Theobald; *Malaya leei* Wharton; *Mansonia (M.) septempunctata* Theobald; *Uranotaenia atra* Theobald; *Aedes (V.) ornata* Theobald (= *lineatus*); *A. (L.) lateralis* Theobald (= *aurimargo*); *Culex (L.) fraudatrix* Theobald; *C. (L.) ornatus* Theobald; *C. (C.) pullus* Theobald; *C. (C.) annulata* Theobald (= *squamosus*); *C. (A.) palli-deceps* Theobald.
 Maprik: *Tripteroides (R.) leei* Peters; *T. (R.) standfasti* Peters; *T. (P.) perplexus* Peters; *Uranotaenia albosternopleura* Peters; *U. novaguinensis* Peters; *Armigeres (A.) papuensis* Peters.
 Minj: *Anopheles (A.) papuensis* Dobrotworsky; *Aedes (F.) stanleyi* Peters; *Culex (L.) christiani* Colless; *C. (L.) petersi* Colless.
 NE New Guinea: *Culex ventralis* Walker (*Nomen Dubium*).
 Simbang: *Aedes (A.) alboscuteallatus* Theobald.
 Stephansort: *Anopheles punctulatus* Dönitz.

- Watut R., Tsilitsili: *Aedes (F.) tsiliensis* King & Hoogstraal.

NW New Guinea

- Anggi Lakes: *Aedes (F.) anggiensis* Bonne-Wepster; *A. (F.) gracilelineatus* Bonne-Wepster; *Culex (C.) miraculosus* Bonne-Wepster; *C. (C.) solitarius* Bonne-Wepster.
 Baliem Vy: *Aedes (A.) inexpectatus* Bonne-Wepster.
 Bernhard Camp: *Aedes (V.) azureosquamatus* Bonne-Wepster.
 Boemi Dist.: *Bironella derooki* Soesilo & Van Slooten (= *soesiloi*); *B. confusa* Bonne-Wepster; *B. brugi* Soesilo & Van Slooten.
 Cape Tjeweri, Jefuta Bay: *Aedes (S.) dasyorrhus* King & Hoogstraal.
 Cyclops Mts: *Tripteroides (R.) adentata* Assem.
 Dorey: *Tripteroides (R.) filipes* (Walker); *Aedes (S.) zonatipes* Walker (= *scutellaris*).
 Doromena: *Tripteroides (R.) fuscipleura* Lee; *Culex (L.) kuhnsi* King & Hoogstraal.
 Hollandia: *Tripteroides (T.) alboscuteallatus* Lee; *T. (R.) bisquamatus* Lee; *T. (R.) fuliginosus* Lee; *T. (R.) longipalpatum* Lee; *T. (R.) pallidus* Lee; *Ficalbia (M.) flavens* King & Hoogstraal; *F. (M.) modesta* King & Hoogstraal; *Uranotaenia fimbriata* King & Hoogstraal; *U. neotibialis* King & Hoogstraal; *U. setosa* King & Hoogstraal; *U. subtibioclada* King & Hoogstraal; *Aedes (F.) plumiferus* (King & Hoogstraal); *A. (P.) lunulatus* King & Hoogstraal; *A. (V.) bifoliatus* King & Hoogstraal; *A. (V.) leilae* King & Hoogstraal; *A. (V.) multifolium* King & Hoogstraal; *A. (V.) neomacrodixoa* King & Hoogstraal; *A. (V.) parasimilis* King & Hoogstraal; *A. (V.) simplus* King & Hoogstraal; *Culex (N.) pedicellus* King & Hoogstraal; *C. (L.) marksae* King & Hoogstraal; *C. (C.) fuscicinctus* King & Hoogstraal; *C. (C.) nailoni* King & Hoogstraal.
 Homejo, Kemabu Vy: *Tripteroides (R.) cuttsi* Assem.
 Humboldt Bay: *Anopheles (C.) clowi* Rozeboom & Knight.
 Inawattan: *Culex (N.) crassistylus* Brug.
 Lake Sentani: *Mansonia (M.) bonnewepsterae* Assem; *Culex (A.) binigrolineatus* Knight & Rozeboom.
 Mist Camp: *Tripteroides (R.) felicitatis* Bonne-Wepster; *T. (R.) flabelliger* Bonne-Wepster; *T. (R.) exnebulis* Bonne-Wepster.
 Moss Forest Camp: *Tripteroides (P.) altivallis* Bonne-Wepster.
 Mt Dafonsoero: *Tripteroides (R.) kingi* Lee; *T. (R.) pilosus* Lee; *T. concinnus* Lee; *Aedes (F.) hollandius* King & Hoogstraal; *A. (F.) subalbitarsis* King & Hoogstraal; *A. (L.) variepietus* King & Hoogstraal.
 Nassau Mts: *Tripteroides (R.) latisquama* (Edwards); *T. (P.) microlepis* (Edwards); *T. (P.) subnudi-*

pennis (Edwards).

Pionierbivak: *Uranotaenia papua* Brug; *Bironella occulta* Bonne-Wepster (= *birorelli*).

Poeë Village: *Aedes* (*V.*) *sertanius* King & Hoogstraal.

Rattan Camp: *Tripteroides* (*R.*) *plumiger* Bonne-Wepster.

Rozeboom Pond: *Culex* (*L.*) *leei* King & Hoogstraal.

Rouffaer R.: *Tripteroides* (*R.*) *vanleeuweni* (Edwards).

Scree Vy: *Aedes* (*F.*) *alticola* Bonne-Wepster; *A.* (*F.*) *toxopeusi* Bonne-Wepster.

Sorong: *Uranotaenia gerdæ* Sloof.

Toem: *Aedes* (*V.*) *quadrispinatus* King & Hoogstraal; *Culex* (*A.*) *bicki* Stone & Penn.

Wadapi, Japen I.: *Bironella walchi* (Soesilo) (= *bironelli*).

Wasirawa R.: *Tripteroides* (*R.*) *tityæ* Sloof.

SE New Guinea

Dobodura: *Tripteroides* (*T.*) *splendens* Lee; *Uranotaenia tibioclada* King & Hoogstraal; *Aedes* (*F.*) *dobodurus* King & Hoogstraal; *Culex* (*N.*) *caeruleus* King & Hoogstraal.

Koipa: *Topomyia papuensis* Marks.

Kokoda: *Aedes* (*M.*) *littlechildi* Taylor.

Lakekamu Gold Field: *Tripteroides* (*P.*) *ater* Taylor; *Coquillettidia* (*C.*) *giblini* Taylor; *M.* (*M.*) *papuensis* Taylor; *Uranotaenia nigerrima* Taylor (= *atra*); *Hodgesia triangulatus* Taylor (= *quasisanguinae*); *Aedes* (*F.*) *albitarsis* Taylor (= *novalbitarsis*); *A.* (*F.*) *novalbitarsis* King & Hoogstraal; *A.* (*V.*) *lineatus* Taylor; *Culex* (*C.*) *papuensis* Taylor.

Mekeo Dist.: *Hodgesia spoliata* Edwards.

Milne Bay: *Tripteroides* (*R.*) *confusus* Lee; *T. ornata* Taylor (= *bimaculipes*); *Uranotaenia nigerrima* Taylor (= *atra*); *Aedes* (*F.*) *keefeii* King & Hoogstraal; *A.* (*F.*) *papuensis* Taylor; *A.* (*V.*) *milnensis* King & Hoogstraal; *A.* (*V.*) *trispinatus* King & Hoogstraal; *Armigeres* (*A.*) *breinli* Taylor; *A.* (*A.*) *milnensis* Lee.

Moroka (district): *Tripteroides* (*M.*) *bimaculipes* Theobald.

Paumomu R.: *Tripteroides* (*R.*) *argenteiventris* Theobald; *Aedes* (*P.*) *culiciformis* Theobald.

Port Moresby: *Uranotaenia hirsutifemora* Peters; *U. moresbyensis* Peters.

Tauri R.: *Tripteroides* (*T.*) *littlechildi* Edwards.

SW New Guinea

Areo Is.: *Aedes* (*S.*) *scutellaris* Walker.

Boven-Digoel (district): *Anopheles* (*C.*) *longirostris* Brug.

Digoel R.: *Coquillettidia* (*C.*) *fuscopteron* (Theobald) (= *crassipes*).

Japero: *Aedes* (*F.*) *gani* Bonne-Wepster.

Kakajoe (on Merauke R.): *Anopheles* (*C.*) *novaguinensis* Venhuis.

Konggeap (on Merauke R.): *Anopheles* (*C.*) *novaguinensis* Venhuis.

Merauke: *Anopheles* (*C.*) *incognitus* Brug; *A.* (*C.*) *meraukensis* Venhuis.

Tanah Merah: *Tripteroides* (*R.*) *brevirhynchus* Brug; *T.* (*R.*) *simplex* Brug; *T.* (*R.*) *papua* Brug; *T.* (*P.*) *digoelensis* Brug; *T.* (*P.*) *obscurus* Brug; *Uranotaenia diagonalis* Brug.

Torpedoboot R.: *Tripteroides* (*T.*) *elegans* Brug; *Aedes* (*V.*) *quadrifolium* Brug.

Upper Digoel R.: *Anopheles* (*C.*) *annulatus* Rook; *Coquillettidia* (*C.*) *memorans* (Bonne-Wepster); *M.* (*C.*) *nigrochracea* (Bonne-Wepster); *Aedes* (*O.*) *purpuraceus* Brug; *A.* (*F.*) *argenteitarsis* Brug; *A.* (*L.*) *medialis* Brug; *Culex* (*L.*) *digoelensis* Brug.

Netherlands East Indies

Unspecified: *Anopheles* (*A.*) *barbumrosus* Strickland & Choudhury; *A.* (*A.*) *pallidus* Swellengrebel (= *barbumbrosus*).

New Guinea

Unspecified: *Toxorhynchites inornatus* (Walker).

W New Guinea

Unspecified: *Bironella papuae* (Swellengrebel & Swellengrebel de Graaf); *Anopheles* (*C.*) *moluccensis* (Swellengrebel & Swellengrebel de Graaf) (= *farauti*).

SOLOMON IS.

Bougainville I.

Bougainville: *Tripteroides* (*T.*) *binotatus* Belkin; *Malaya solomonis* (Wharton); *Ficalbia* (*M.*) *gurneyi* Belkin; *F.* (*E.*) *bougainvillensis* Belkin; *Aedes* (*F.*) *bougainvillensis* Marks; *A.* (*F.*) *buxtoni* Belkin; *A.* (*S.*) *gurneyi* Stone & Bohart.

Torokina: *Tripteroides* (*R.*) *torokinae* Belkin.

Florida I.

Halavo: *Tripteroides* (*R.*) *floridensis* Belkin; *Culex* (*L.*) *laffooni* Belkin.

Guadalcanal I.

Balasuma area: *Culex* (*L.*) *perryi* Belkin.

Bonegi R. Vy: *Uranotaenia civinskii* Belkin.

Burns Cr.: *Coquillettidia* (*C.*) *lutea* Belkin.

Chacon Swamp: *Ficalbia* (*E.*) *solomonis* Belkin; *Culex* (*C.*) *omani* Belkin.

Doma Cove area: *Mansonia* (*M.*) *melanesiensis* Belkin.

Guadalcanal: *Aedes* (*F.*) *rubiginosus* Belkin; *A.* (*F.*) *solomonis* Stone & Bohart.

Koli area: *Anopheles* (*C.*) *koliensis* Owen.

Lunga area: *Uranotaenia solomonis* Belkin; *Aedes*

(V.) mccormicki Belkin.Maravovo: *Aedes (V.) carmenti* Edwards.Matanikau R. tributary: *Culex (L.) oweni* Belkin;
C. (L.) winkleri Belkin.Matanikau R. Vy: *Tripteroides (R.) mathesoni* Belkin;
Aedes (F.) argyrotum Belkin; *A. (V.) cuccioi* Belkin.Natalia Springs: *Anopheles (C.) nataliae* Belkin.Poha area: *Aedes (F.) fuscitarsis* Belkin; *A. (F.) hollingsheadi* Belkin; *A. (F.) schlosseri* Belkin.Poha-Bonegi area: *Aedes (S.) quasiscutellaris* Farner & Bohart.Poha R.: *Culex (L.) bergi* Belkin.Poha R. tributary: *Anopheles (C.) solomonis* Belkin,
Knight & Rozeboom.Poha R. Vy: *Tripteroides (R.) stonei* Belkin. Poha
Swamp: *Culex (L.) lairdi* Belkin.Rere: *Uranotaenia quadrimaculata* Edwards.Sprague Swamp: *Tripteroides (T.) lipovskyi* Belkin;
Culex (L.) becki Belkin; *C. (L.) walukasi* Belkin.Tassafaronga Swamp: *Anopheles (C.) lungae* Belkin
& Schlosser.Tenaru area: *Uranotaenia wysockii* Belkin; *Aedes (F.) fuscipalpis* Belkin;
Culex (L.) hurlbuti Belkin.Togir Swamp: *Uranotaenia barnesi* Belkin.Umasani R. Vy: *Culex (A.) perkinsi* Stone & Penn.
West Cape: *Culex (A.) belkini* Stone & Penn.West Poha Swamp: *Uranotaenia sexaueri* Belkin;
Hodgesia solomonis Belkin; *Aedes (O.) mcdonaldii* Belkin;
Culex (N.) leonardi Belkin.White R. Vy: *Tripteroides (R.) coheni* Belkin.Wright's Cr.: *Aedes (F.) roai* Belkin.**Kolombangara I.**Lady Lever Plantation: *Aedes (M.) aurantia* var.
nigrescens (Edwards) (= *Aedes (M.) painei* Knight).**Malaita I.**Manaba: *Culex (L.) solomonis* Edwards.**New Georgia I.**Munda: *Aedes (F.) franclemonti* Belkin; *A. (F.) neogeorgianus* Belkin;
Culex (L.) whittingtoni Belkin;
C. (L.) franclemonti Belkin.**Rendova I.**Rendova I.: *Aedes (F.) knighti* Stone & Bohart.**Rennell I.**Hutuna: *Aedes (S.) hoguei* Belkin.**Roviana I.**Roviana I.: *Aedes (G.) becki* Belkin.**Tulagi I.**Tulagi I.: *Tripteroides (T.) distigma* (Edwards);
T. (R.) solomonis (Edwards); *Aedes (F.) albilabris* Edwards.

TIMOR

TimorAtamboea: *Culex (C.) bihamatus* Edwards.TYPE LOCALITIES—EXTRALIMITAL
AUSTRALIAN**Australia**Australia (Nova Hollandia, New Holland): *Aedes (M.) alternans* (Westwood); *A. (M.) commoven* Walker (= *alternans*).Moa I.: *Aedes (L.) aurimargo* Edwards.New South Wales: *Anopheles (C.) musivus* Skuse (= *annulipes*); *A. (C.) mastersi* Skuse (= *annulipes*);
Aedes (M.) hispidus Skuse (= *alternans*); *A. (O.) vigilax* (Skuse); *A. (F.) notoscriptus* (Skuse); *Culex (C.) annulirostris* (Skuse).Northern Territory: *Anopheles (C.) amictus hilli* Woodhill & Lee; *A. (C.) perplexus* Skuse (= *annulipes*);
Aedes (M.) minuta (Taylor) (= *tremulus*); *A. (M.) alboannulata* (Taylor) (= *tremulus*); *A. (M.) darwini* (Taylor) (= *tremulus*); *Culex (C.) palpalis* Taylor (= *annulirostris*); *C. (C.) vicinus* (Taylor).Queensland: *Anopheles (A.) bancrofti* Giles; *A. (C.) derricki* Taylor (= *annulipes*); *A. (C.) perplexus* Skuse (= *annulipes*); *A. (C.) perplexus persimilis* Taylor (= *annulipes*); *Toxorhynchites speciosus* (Skuse); *Tripteroides (T.) quasiornatus* (Taylor); *T. (P.) punctolateralis* (Theobald); *T. (P.) subobscurus* Lee; *Ficalbia (E.) elegans* (Taylor); *Coquillettidia (C.) xanthogaster* (Edwards); *M. (M.) australiensis* (Giles) (= *uniformis*); *Uranotaenia albescens* Taylor; *U. antennalis* Taylor; *U. cairnsensis* Taylor (= *lateralis*); *U. propria* Taylor (= *lateralis*); *U. tibialis* Taylor; *Hodgesia cairnsensis* Taylor; *Aedes (M.) aurantius chrysogaster* (Taylor); *A. (O.) vigilax* (Skuse); *A. (F.) candidoscutellum* Marks; *A. (F.) quasirubithorax* (Theobald); *A. (M.) australis* Taylor (= *tremulus*); *A. (M.) marinus* (Theobald) (= *vigilax*); *A. (M.) pseudovigilax* (Theobald); *A. (P.) multiplex* (Theobald); *A. (V.) funereus* (Theobald); *A. (V.) similis* (Theobald); *Culex (L.) cylindricus* Theobald; *C. (C.) annulata* (Taylor) (= *vicinus*); *C. (C.) annulirostris* (Taylor) (= *squamosus*); *C. (C.) bancroftii* Theobald (= *annulirostris*); *C. (C.) consimilis* (Taylor) (= *annulirostris*); *C. (C.) simplex* (Taylor) (= *annulirostris*); *C. (C.) somerseti* Taylor (= *annulirostris*); *C. (C.) squamosus* (Taylor).South Australia: *Aedes (M.) uniformis* Strickland (= *vigilax*).Tasmania: *Anopheles (C.) annulipes* Walker.

ETHIOPIAN

Africa

Mozambique: *Mansonia* (*M.*) *marquesensis* Dyar (=uniformis).

Nigeria: *Mansonia* (*M.*) *africana* (Theobald).

Nyasaland: *Mansonia* (*M.*) *reversus* (Theobald) (=uniformis).

Sudan: *Mansonia* (*M.*) *major* Theobald.

Madagascar

Madagascar: *Aedes* (*S.*) *!amberti* (Ventrillon) (=albopictus).

INDOMALAYAN

Indonesia

Celebes: *Anopheles* (*A.*) *vannus* Walker; *A.* (*C.*) *tessellatus* var. *orientalis* Swellengrebel & Swellengrebel de Graaf; *Toxorhynchites immisericors* (Walker) (=splendens ssp. *subulifer*); *Aedes* (*F.*) *avistylus* Brug.

East Indies (Indonesia): *Culex* (*C.*) *fatigans* Wiedemann.

Java: *Anopheles* (*A.*) *barbirostris* Van der Wulp; *A.* (*A.*) *insulaeflorum* (Swellengrebel & Swellengrebel de Graaf); *A.* (*A.*) *palmatus* (Rodenwaldt); *A.* (*C.*) *aconitus* Dönitz; *A.* (*C.*) *annularis* Van der Wulp; *A.* (*C.*) *flava* (Swellengrebel) (=vagus); *A.* (*C.*) *ludlowae* var. *flavescens* (Swellengrebel); *A.* (*C.*) *orientalis* var. *tessellatus* Swellengrebel & Swellengrebel de Graaf; *A.* (*C.*) *vagus* Dönitz; *Toxorhynchites splendens* (Wiedemann); *Mansonia* (*M.*) *indiana* Edwards; *Aedes* (*F.*) *notoscriptus montanum* Brug.

Sumatra: *Anopheles* (*C.*) *deceptor* Dönitz (=tessellatus); *A.* (*C.*) *kochi* Dönitz; *A.* (*C.*) *vagus* Dönitz; *Coquillettidia* (*C.*) *crassipes* (Van der Wulp); *C.* (*C.*) *nigrochracea* Bonne-Wepster; *M.* (*M.*) *longipalpis* (Van der Wulp) (=dives); *Culex* (*C.*) *sitiens* Wiedemann.

Malaysia

Borneo: *Anopheles* (*A.*) *brevipalpis* Roper; *Uranotaenia obscura* Edwards; *Mansonia* (*M.*) *septemguttata* (Theobald) (=annulifera); *Aedes* (*M.*) *aurantius* (Theobald); *Culex* (*C.*) *inornata* (Theobald) (=fragilis); *C.* (*C.*) *spathifurca* (Edwards); *C.* (*C.*) *gelidus* var. *bipunctata* (Theobald) (=gelidus).

Malaya: *Anopheles* (*A.*) *aikenii* ssp. *stantoni* Puri; *A.* (*A.*) *separatus* (Leicester); *A.* (*C.*) *ocellatus* Theobald (=kochi); *A.* (*C.*) *tessellatus* Theobald; *Malaya genurostris* Leicester; *Ficalbia* (*M.*) *chamberlaini* issp. *metallica* (Leicester); *Coquillettidia* (*C.*) *brevicellulus* (Theobald) (=crassipes); *C.* (*C.*) *ochracea* (Theobald); *Uranotaenia argyrotarsis* Leicester; *U. cancer* Leicester (=lateralis); *Hodgesia malayi* Leicester; *H. quasisanguinae* Leicester; *Aedes* (*F.*) *foecilus* (Theobald); *A.* (*R.*) *longirostris* (Leicester); *A.* (*S.*) *albolineatus* (Theobald); *A.* (*A.*) *caecus* Theobald; *A.* (*V.*) *butleri*

(Theobald); *A.* (*V.*) *incertus* Edwards; *A.* (*V.*) *taeniata* (Leicester) (=incertus); *Armigeres* (*A.*) *fusca* (Theobald) (=malayi); *A.* (*A.*) *malayi* (Theobald); *Culex* (*L.*) *halifaxii* Theobald; *C.* (*L.*) *multimaculosus* Leicester (=halifaxii); *C.* (*N.*) *uniformis* (Leicester) (=brevipalpis); *C.* (*M.*) *malayi* (Leicester); *C.* (*M.*) *aedes* (Leicester) (=malayi); *C.* (*C.*) *graminis* Leicester (=fragilis); *C.* (*C.*) *albus* Leicester (=whitmorei); *C.* (*C.*) *cuneatus* Theobald (=gelidus); *C.* (*C.*) *gelidus* Theobald; *C.* (*C.*) *loricatus* Leicester (=whitmorei); *C.* (*C.*) *sepositus* Leicester (=sinensis); *C.* (*C.*) *tenax* (Leicester) (=sinensis).

Philippines

Cebu: *Toxorhynchites grata* (Banks) (=amboinensis).

Guimaras: *Toxorhynchites lewaldi* (Ludlow) (=amboinensis).

Luzon: *Anopheles* (*A.*) *pseudobarbirostris* Ludlow; *A.* (*C.*) *flava* (Ludlow) (=kochi); *A.* (*C.*) *ludlowae* (Theobald); *Coquillettidia* (*C.*) *diaeretus* Dyar (=crassipes); *Uranotaenia innotata* Dyar & Shannon (=lateralis); *Hodgesia ampyx* Dyar (=malayi); *Aedeomyia catastica* Knab; *Aedes* (*A.*) *argeneinotus* (Banks) (=alboscuteollatus); *Armigeres* (*A.*) *russelli* Baisas (=malayi); *Culex* (*N.*) *fidelis* Dyar (=brevipalpis); *C.* (*C.*) *argenteus* (Ludlow) (=whitmorei); *C.* (*C.*) *whitmorei* (Giles).

Mindanao: *Anopheles* (*C.*) *cristatus* King & Baisas; *A.* (*C.*) *parangensis* (Ludlow); *A.* (*C.*) *thorntonii* (Ludlow) (=tessellatus); *Toxorhynchites argenteotarsis* Ludlow (=amboinensis); *Malaya caeruleovittata* (Ludlow) (=genurostris); *Uranotaenia lateralis* Ludlow; *Hodgesia niveocaputis* Ludlow (=quasisanguinae); *Aedes* (*S.*) *nigritia* (Ludlow) (=albopictus); *A.* (*S.*) *quasinigritia* (Ludlow) (=albopictus); *Culex* (*L.*) *aureopunctis* (Ludlow) (=halifaxii); *C.* (*M.*) *laureli* Baissa (=malayi).

Mindoro: *Aedes* (*S.*) *gardnerii* (Ludlow).

Panay I.: *Aedes* (*V.*) *panayensis* Ludlow.

Samar I.: *A.* (*S.*) *paullusi* Stone & Farner; *A.* (*S.*) *samarensis* (Ludlow) (=albopictus); *Culex* (*C.*) *fragilis* Ludlow.

Singapore

Singapore: *Mansonia* (*M.*) *annulipes* (Walker) (=dives); *Culex* (*N.*) *longipes* Theobald (=brevipalpis); *C.* (*C.*) *pseudovishnui* Colless.

ORIENTAL

Burma

Burma: *Mansonia* (*C.*) *brevicellulus* (Theobald) (=crassipes).

Ceylon

Ceylon: *Anopheles* (*C.*) *ceylonica* (Newstead & Car-

ter) (=tessellatus); *Toxorhynchites regius* (Tennent) (=splendens); *Uranotaenia ceylonica* Theobald (=lateralis); *Culex* (*L.*) *uniformis* (Theobald); *C. (C.) ceylonica* (Theobald) (=fragilis); *C. (C.) fuscus* (Theobald) (=fragilis); *C. (C.) stylifurcatus* Carter & Wijesundara (=spathifurca).

China

China: *Culex (C.) sinensis* (Theobald).

Formosa

Formosa: *Anopheles (C.) formosae* Hatori (=tessellatus); *A. (C.) formosaensis II* Tsuzuki (=vagus); *A. (C.) formosaensis II* var. *trimaculatus* Tsuzuki (=vagus); *A. (C.) hatorii* Koizumi (=ludlowae); *A. (C.) kinoshitai* Koizumi (=tessellatus); *A. (C.) ludlowae* var. *formosensis* Koizumi (=ludlowae); *A. (C.) taiwanensis* Koizumi (=tessellatus).

India

Andaman I.: *Orthopodomyia andamanensis* Barraud; *Aedes (A.) lowisii* (Theobald).

India: *Anopheles (A.) aitkeni* James; *A. (C.) halli* (James) (=kochi); *A. (C.) immaculata* James (=vagus); *A. (C.) immaculatus* Theobald (=vagus); *A. (C.) karwari* (James); *A. (C.) subpictus* Grassi; *Toxorhynchites sikkimensis* (Giles) (=splendens); *T. gilesii* (Theobald) (=splendens); *Ficalbia (F.) minima* (Theobald); *Cochillettidia (C.) pygmaeus* (Theobald) (=crassipes); *M. (M.) annulifera* (Theobald); *M. (M.) uniformis* (Theobald); *Orthopodomyia anopheloides* (Giles); *Aedes (S.) albopictus* (Skuse); *A. (S.) annandalei* (Theobald); *Culex (N.) brevipalpis* (Giles); *C. (M.) nigrescens* Theobald (=malayi); *C. (C.) pallidothorax* Theobald; *C. (C.) bipunctata* (Theobald) (=gelidus); *C. (C.) bitaeniorhynchus* Giles; *C. (C.) gelidus cuneatus* Theobald (=gelidus); *C. (C.) vishnui* Theobald.

Vietnam

Hanoi: *Mansonia (M.) seguini* (Laveran) (=annulifera).

MICRONESIA

Mariana Is.

Rota I.: *Culex (C.) litoralis* Bohart.

PALAEARCTIC

Africa

Egypt: *Aedes (S.) aegypti* (Linnaeus).

Asia

Japan: *Aedes (A.) omurensis* Yamada (=alboscute-latus); *Culex (C.) plegepennis* (Theobald) (=whitmorei).

Europe

Germany: *Aedes (A.) vexans* (Meigen).

SOUTH PACIFIC

Christmas Is.

Christmas Is:

Fiji Is.

Ba: *Aedes (A.) vexans nocturnus* (Theobald).

Viti Levu: *Tripteroidea (T.) purpuratus* (Edwards); *Culex*.

Fiji Is.: *Culex (C.) jepsoni* Bahr (=annulirostris).

New Caledonia

New Caledonia: *Aedes (M.) kermorganti* (Laveran) (=alternans).

New Hebrides Is.

New Hebrides Is.: *Anopheles (C.) farauti* Laveran; *Aedes (S.) hebrideus* Edwards (=scutellaris).

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