

(Note: Cited references are listed at the end of the classification.)

Genus *Anopheles* Meigen

Subgenus *Anopheles* Meigen

Angusticorn Section (Reid & Knight, 1961)

annulipalpis Lynch Arribálzaga (see Harbach & Kitching, 2015)

Anopheles Series (Edwards, 1932a)

algeriensis Theobald

concolor Edwards

marteri Senevet & Prunnelle

Claviger Complex (Coluzzi *et al.*, 1965)

claviger (Meigen)

petragnani del Vecchio

Alongensis Group (Phan *et al.*, 1991)

alongensis Venhuis

cucphuongensis Vu, Nguyen, Tran & Nguyen

Aitkenii Group (Reid & Knight, 1961)

aberrans Harrison & Scanlon

acaci Baisas

aitkenii James

bengalensis Puri

borneensis McArthur

fragilis (Theobald)

insulaeflorum (Swellengrebel & Swellengrebel de Graaf)

palmatus (Rodenwaldt)

peytoni Kulasekera, Harrison & Amerasinghe

pilinotum Harrison & Scanlon

pinjaurensis Barraud

stricklandi Reid

tigertti Scanlon & Peyton

Atratipes Group (Lee *et al.*, 1987b)

atratipes Skuse

tasmaniensis Dobrotworsky

Culiciformis Group (Reid & Knight, 1961)

culiciformis Cogill

sintoni Puri

sintonoides Ho

Lindesayi Group (Reid & Knight, 1961)

Gigas Subgroup (Harrison *et al.*, 1991, as Gigas Complex)

Baileyi Complex (Somboon *et al.*, 2020)

baileyi Edwards (species A)

baileyi (species D)

bhutanensis Somboon, Namgay & Harbach (species C)

monticola Somboon, Namgay & Harbach (species B)

simlensis James

Gigas Complex (redefined by Somboon *et al.*, 2020)

gigas Giles

subspecies *crockeri* Colless

subspecies *danaubento* Mochtar & Walandouw

subspecies *formosus* Ludlow

subspecies *gigas* Giles

subspecies *oedjalikalah* Nainggolan

subspecies *pantjarbatu* Waktoedi Koesoemawinangoen

subspecies *refutans* Alcock

prachongae Rattanarithikul & Harrison

sumatrana Swellengrebel & Rodenwaldt

Lindesayi Subgroup (Harrison *et al.*, 1991, as Lindesayi Complex)

menglangensis Ma

nilgiricus Christophers

wellingtonianus Alcock

Lindesayi Complex (Namgay *et al.*, 2020)

benguetensis King

cameronensis Edwards

druki Somboon, Namgay & Harbach (*lindesayi* species C)

himalayensis Somboon, Namgay & Harbach (*lindesayi* species D)

japonicus Yamada

lindesayi Giles (species A)

lindesayi (species B)

pleccau Koidzumi

thimphuensis Somboon, Namgay & Harbach ((*lindesayi* species E))

Maculipennis Group (Reid & Knight, 1961)

atropos Dyar & Knab

aztecus Hoffmann

lewisi Ludlow

walkeri Theobald

Maculipennis Subgroup (Linton, 2004)

artemievi Gordeyev, Zvantsov, Goryacheva, Shaikevich & Yezhov

atroparus van Thiel

daciae Linton, Nicolescu & Harbach

labranchiae Falleroni

maculipennis Meigen

martinius Shinagarev

melanoon Hackett

messeae Falleroni

persiensis Linton, Sedaghat & Harbach

sacharovi Favre

Quadrimaculatus Subgroup (Linton, 2004)

beklemishevi Stegnii & Kabanova

- diluvialis* Reinert
inundatus Reinert
maverlius Reinert
quadrimaculatus Say
smaragdinus Reinert
 Freeborni Subgroup (Linton, 2004)
earlei Vargas
freeborni Aitken
hermsi Barr & Guptavani
occidentalis Dyar & Knab
 Plumbeus Group (Reid & Knight, 1961)
arboricola Zavortink
barberi Coquillett
barianensis James
fausti Vargas
judithae Zavortink
omorii Sakakibara
plumbeus Stephens
powderi Zavortink
xelajuensis de Leon
 Pseudopunctipennis Group (Reid & Knight, 1961)
chiriquiensis Komp
eiseni Coquillett
 subspecies *eiseni* Coquillett
 subspecies *geometricus* Corrêa
franciscanus McCracken
hectoris Giaquinto-Mira
parapunctipennis Martini
 subspecies *guatemalensis* de Leon
 subspecies *parapunctipennis* Martini
pseudopunctipennis Theobald
 subspecies *levicastilloi* Levi-Castillo
 subspecies *neghmei* Mann
 subspecies *noei* Mann
 subspecies *patersoni* Alvarado & Heredia
 subspecies *pseudopunctipennis* Theobald
 subspecies *rivideneirai* Levi-Castillo
tibiamaculatus (Neiva)
 Punctipennis Group (Reid & Knight, 1961)
perplexens Ludlow
punctipennis (Say)
 Crucians Complex (Wilkerson *et al.*, 2004)
bradleyi King
crucians Wiedemann (species A, B, C, D and E)
georgianus King
 Stigmaticus Group (Reid & Knight, 1961)

colledgei Marks
corethroides Theobald
papuensis Dobrotworsky
powelli Lee
pseudostigmaticus Dobrotworsky
stigmaticus Skuse
Cyclolepteron Series (Edwards, 1932a)
 grahamii Theobald
Lophoscelomyia Series (Edwards, 1932a)
 bulkleyi Causey
Asiaticus Group (Reid, 1968)
 annandalei Prashad
 noniae Reid
 Asiaticus Subgroup (Rattanarithikul *et al.*, 2006b)
 asiaticus Leicester
 Interruptus Subgroup (Rattanarithikul *et al.*, 2006b)
 interruptus Puri
Laticorn Section (Reid & Knight, 1961)
Arribalzagia Series (Root, 1922a)
 anchietai Corrêa & Ramalho
 apicimacula Dyar & Knab
 bustumantei Galvão
 calderoni Wilkerson
 costai Fonseca & Ramos
 evandroi da Costa Lima
 fluminensis Root
 forattinii Wilkerson & Sallum
 gabaldoni Vargas
 guarao Anduze & Capdevielle
 maculipes (Theobald)
 malefactor Dyar & Knab
 mattogrossensis Lutz & Neiva
 medialis Harbach
 mediopunctatus (Lutz)
 minor da Costa Lima
 neomaculipalpus Curry
 peryassui Dyar & Knab
 pseudomaculipes (Chagas)
 punctimacula Dyar & Knab
 rachoui Galvão
 shannoni Davis
 veruslanei Vargas
 vestitipennis Dyar & Knab
Myzorhynchus Series (Edwards, 1932a)
 obscurus (Grünberg)
Albotaeniatus Group (Reid & Knight, 1961)

- albotaeniatus* (Theobald)
balerensis Mendoza
ejercitoi Mendoza
montanus Stanton & Hacker
saperoi Bohart & Ingram
 subspecies *ohamai* Ohama
 subspecies *saperoi* Bohart & Ingram
Bancroftii Group (Reid & Knight, 1961)
 bancroftii Giles
 subspecies *bancroftii* Giles
 subspecies *barbiventris* Brug
 pseudobarbirostris Ludlow
Barbirostris Group (Reid & Knight, 1961)
 freyi Meng
 koreicus Yamada & Watanabe
Barbirostris Subgroup (Reid, 1968)
 donaldi Reid
 franciscoi Reid
 hodgkini Reid
 pollicaris Reid
Barbirostris Complex (Satoto, 2001)
 barbirostris van der Wulp
 campestris Reid
 dissidens Taai & Harbach (species III of Paredes-Esquivel *et al.*, 2009)
 saeungae Taai & Harbach (species IV of Paredes-Esquivel *et al.*, 2009)
 vanderwulpi Townson & Harbach
 wejchoochotei Taai & Harbach
Vanus Subgroup (Reid, 1968)
 ahomi Chowdhury
 barbumbrosus Strickland & Chowdhury
 manalangi Mendoza
 reidi Harrison
 vanus Walker
Coustani Group (Reid & Knight, 1961)
 caliginosus de Meillon
 coustani Laveran
 crypticus Coetzee
 fuscicolor van Someren
 namibiensis Coetzee
 paludis Theobald
 symesi Edwards
 tenebrosus Dönitz
 ziemanni Grünberg
Hyrcanus Group (Reid, 1953)
 argyropus (Swellengrebel)
 belenrae Rueda

chodukini Martini
engarensis Kanda & Oguma
hailarensis Xu & Luo
heiheensis Ma
hyrcanus (Pallas)
hyrcanus spIR (Djadid *et al.*, 2009)
kleini Rueda
kweiyangensis Yao & Wu
liangshanensis Kang, Tan, Cao, Cheng Yang & Huang
nimpe Nguyen, Tran & Harbach
pseudopictus Grassi
pullus Yamada
sinensis Wiedemann
sinerooides Yamada
xui Dong, Zhou, Dong & Mao
Lesteri Subgroup (Harrison, 1972)
crawfordi Reid
lesteri Baisas & Hu
peditaeniatus (Leicester)
vietnamensis Nguyen, Tran & Nguyen
Nigerrimus Subgroup (Harrison, 1972)
nigerrimus Giles
nitidus Harrison, Scanlon & Reid
pseudosinensis Baisas
pursati Laveran
Umbrosus Group (Reid, 1950)
brevipalpis Roper
brevirostris Reid
hunteri (Strickland)
samarensis Rozeboom
similissimus Strickland & Chowdhury
Baezai Subgroup (Rattanarithikul *et al.*, 2006b)
baezai Gater
Letifer Subgroup (Reid, 1968)
collessi Reid
letifer Sandosham
roperi Reid
whartoni Reid
Separatus Subgroup (Rattanarithikul *et al.*, 2006b)
separatus (Leicester)
Umbrosus Subgroup (Rattanarithikul *et al.*, 2006b)
umbrosus (Theobald)

Subgenus *Baimaia* Harbach, Rattanarithikul & Harrison
kyondawensis Abraham

Subgenus *Cellia* Theobald

- Cellia Series (Christophers, 1924a)
- argenteolobatus* (Gough)
 - brumpti* Hamon & Rickenbach
 - cristipalpis* Service
 - murphyi* Gillies & de Meillon
 - pharoensis* Theobald
 - swahilicus* Gillies
- Squamosus Group (Grjebine, 1966)
- cydippis* de Meillon
 - squamulosus* Theobald
- Myzomyia Series (Christophers, 1924a)
- apoci* Marsh
 - azaniae* Baily-Choumara
 - barberellus* Evans
 - bervoetsi* D'Haenans
 - brunnipes* (Theobald)
 - domicolus* Edwards
 - dthali* Patton
 - erythraeus* Corradetti
 - ethiopicus* Gillies & Coetzee
 - flavicosta* Edwards
 - fontinalis* Gillies & de Meillon
 - gabonensis* Rahola, Makanga & Paupy, 2014
 - majidi* Young & Majid
 - moucheti* Evans
 - schwetzi* Evans
 - tchekedii* de Meillon & Leeson
 - walravensi* Edwards
- Demeilloni Group (Gillies & de Meillon, 1968)
- carteri* Evans & de Meillon
 - demeilloni* Evans
 - freetownensis* Evans
 - garnhami* Edwards
 - keniensis* Evans
 - lloreti* Gil Collado
 - sergentii* (Theobald)
 - subspecies *macmahoni* Evans
 - subspecies *sergentii* (Theobald)
- Funestus Group (Garros *et al.*, 2005b)
- jeyporiensis* James
- Aconitus Subgroup (Chen *et al.*, 2003)
- aconitus* Dönitz
 - filipinae* Manalang
 - mangyanus* (Banks)

pampanoi Büttiker & Beales
varuna Iyengar
Culicifacies Subgroup (Garros *et al.*, 2005b)
 culicifacies Giles (species A, B, C, D and E) (Kar *et al.*, 1999)
Funestus Subgroup (Garros *et al.*, 2005b)
 aruni Sobti
 confusus Evans & Leeson
 funestus Giles
 funestus-like species (Spillings *et al.*, 2009)
 longipalpis (Theobald) (Type C) (Koekemoer *et al.*, 2009)
 parensis Gillies
 vaneedeni Gillies & Coetzee
Minimus Subgroup (Chen *et al.*, 2003)
 flavirostris (Ludlow)
 leesoni Evans
 longipalpis (Theobald) (Type A) (Koekemoer *et al.*, 2009)
Fluviatilis Complex (Sarala *et al.*, 1994)
 fluviatilis James (species S, T and U)
Minimus Complex (Green *et al.*, 1990)
 harrisoni Harbach & Manguin (species C)
 minimus Theobald (species A)
 yaeyamaensis Somboon & Harbach
Rivulorum Subgroup (Garros *et al.*, 2005b)
 brucei Service
 fuscivenosus Leeson
 rivulorum Leeson
 rivulorum-like species (Cohuet *et al.*, 2003)
Marshallii Group (Gillies & de Meillon, 1968)
 austenii (Theobald)
 berghei Vincke & Leleup
 brohieri Edwards
 gibbinsi Evans
 hancocki Edwards
 hargreavesi Evans
 harperi Evans
 mortiauxi Edwards
 mousinhoi de Meillon & Pereira
 njombiensis Peters
 seydeli Edwards
Marshallii Complex (Gillies & Coetzee, 1987)
 hughii Lambert & Coetzee
 kosiensis Coetzee, Segerman & Hunt
 letabensis Lambert & Coetzee
 marshallii (Theobald))
Wellcomei Group (Gillies & de Meillon, 1968)
 distinctus (Newstead & Carter)

- erepens* Gillies
- theileri* Edwards
- wellcomei* Theobald
 - subspecies *ugandae* Evans
 - subspecies *ungujae* White
 - subspecies *wellcomei* Theobald
- Neocellia Series (Christophers, 1924a)
 - ainshamsi* Gad, Harbach & Harrison
 - dancalicus* Corradetti
 - hervyi* Brunhes, le Goff & Geoffroy
 - karwari* (James)
 - maculipalpis* Giles
 - moghulensis* Christophers
 - paltrinieri* Shidrawi & Gillies
 - pattoni* Christophers
 - pretoriensis* (Theobald)
 - pulcherrimus* Theobald
 - rufipes* (Gough)
 - subspecies *broussesi* Edwards
 - subspecies *rufipes* (Gough)
 - salbaii* Maffi & Coluzzi
 - stephensi* Liston (potentially a species complex; see Firoozian *et al.*, 2018)
 - superpictus* Grassi (species A and B) (Oshaghi *et al.*, 2007; Oshaghi *et al.*, 2008)
 - theobaldi* Giles
- Annularis Group (Reid, 1968)
 - Annularis Complex (Atrie *et al.*, 1999)
 - annularis* van der Wulp (species A and B)
 - pallidus* Theobald
 - philippinensis* Ludlow
 - schueffneri* Stanton
 - Nivipes Complex (Green *et al.*, 1985b; Harrison *et al.*, 1991)
 - nivipes* (Theobald) (2 cytogenetic species in Thailand)
- Jamesii Group (Rattanarithikul *et al.*, 2006b)
 - jamesii* Theobald
 - pseudojamesi* Strickland & Chowdhury
 - splendidus* Koidzumi
- Maculatus Group (Rattanarithikul & Green, 1987)
 - dispar* Rattanarithikul & Harbach
 - greeni* Rattanarithikul & Harbach
 - pseudowillmori* (Theobald)
 - willmori* (James)
- Maculatus Subgroup (Rattanarithikul *et al.*, 2006b)
 - dravidicus* Christophers
- Maculatus Complex (Ali *et al.*, 2019b)
 - maculatus* Theobald
 - maculatus* Javanese form (Ali *et al.*, 2019a)

- Sawadwongporni Subgroup (Rattanarithikul *et al.*, 2006b)
- notanandai* Rattanarithikul & Green
 - rampae* Harbach & Somboon, 2011
 - sawadwongporni* Rattanarithikul & Green
- Neomyzomyia Series (Christophers, 1924a)
- amictus* Edwards
 - annulatus* de Rook
 - aurirostris* (Watson)
 - dualaensis* Brunhes, le Goff & Geoffroy
 - hilli* Woodhill & Lee
 - incognitus* Brug
 - kokhani* Vythilingam, Jeffery & Harbach
 - kolambunganensis* Baisas
 - longirostris* Brug
 - meraukensis* Venhuis
 - novaguinensis* Venhuis
 - saungi* Colless
 - stookesi* Colless
 - watsonii* (Leicester)
- Annulipes Complex (Green, 1972)
- annulipes* Walker (species A–Q) (Foley *et al.*, 2007b)
- Lungae Complex (Belkin, 1962)
- lungae* Belkin & Schlosser
 - nataliae* Belkin
 - solomonis* Belkin, Knight & Rozeboom
- Ardensis Group (Gillies & de Meillon, 1968)
- ardensis* (Theobald)
 - buxtoni* Service
 - cinctus* (Newstead & Carter)
 - deemingi* Service
 - dureni* Edwards
 - eouzani* Brunhes, le Goff & Bousses
 - kingi* Christophers
 - machardyti* Edwards
 - maliensis* Bailly-Choumara & Adam
 - millecampsi* Lips
 - multicinctus* Edwards
 - natalensis* (Hill & Haydon)
 - vernus* Gillies & de Meillon
 - vinciei* de Meillon
- Nili Complex (Gillies & de Meillon, 1968)
- carnealei* Brunhes, le Goff & Geoffroy
 - nili* (Theobald)
 - ovengensis* Awono-Ambene, Kengne, Simard, Antonio-Nkondjio & Fontenille
 - somalicus* Rivola & Holstein
- Kochi Group (Rattanarithikul *et al.*, 2006b)

kochi Dönitz
Leucosphyrus Group (Reid, 1949)
 Hackeri Subgroup (Sallum *et al.*, 2005a)
 hackeri Edwards
 mirans Sallum & Peyton
 pujutensis Colless
 recens Sallum & Peyton
 sulawesi Waktoedi Koesoemawinangoen
 Leucosphyrus Subgroup (Peyton, 1990; Sallum *et al.*, 2005b)
 baisasi Colless
 Dirus Complex (Sallum *et al.*, 2005b)
 aff. *takasagoensis* (Takano *et al.*, 2010)
 baimaii Sallum & Peyton
 cracens Sallum & Peyton
 dirus Peyton & Harrison
 elegans (James)
 nemophilous Peyton & Ramalingam
 scanloni Sallum & Peyton
 takasagoensis Morishita
 Leucosphyrus Complex (Sallum *et al.*, 2005a)
 balabacensis Baisas
 introlatus Colless
 latens Sallum & Peyton
 leucosphyrus Dönitz
Riparis Subgroup (Peyton, 1990)
 cristatus King & Baisas
 macarthuri Colless
 riparis King & Baisas
Mascarensis Group (Harbach, 1994a)
 mascarensis de Meillon
Pauliani Group (Grjebine, 1966)
 grassei Grjebine
 grenieri Grjebine
 milloti Grjebine & Lacan
 pauliani Grjebine
 radama de Meillon
Punctulatus Group (Schmidt *et al.*, 2001)
 clowi Rozeboom & Knight
 koliensis Owen
 punctulatus Dönitz
 rennellensis Taylor & Maffi
 sp. near *punctulatus* (Foley *et al.*, 1995)
Farauti Complex (Schmidt *et al.*, 2003)
 farauti Laveran
 farauti 4 and 5 (Foley *et al.*, 1993)
 farauti 8 (Bower *et al.*, 2008)

- hinesorum* Schmidt
irenicus Schmidt
oreios Bangs & Harbach, 2014
torresiensis Schmidt
 Ranci Group (Grjebine, 1966)
griveaudi Grjebine
 Ranci Subgroup (Grjebine, 1966)
ranci Grjebine
 Roubaudi Subgroup (Grjebine, 1966)
lacani Grjebine
notleyi van Someren
roubaudi Grjebine
 Rhodesiensis Group (Gillies & de Meillon, 1968)
cameroni de Meillon & Evans
lounibosi Gillies & Coetze
rhodesiensis Theobald
 subspecies *rhodesiensis* Theobald
 subspecies *rupliculus* Lewis
rodhaini Leleup & Lips
ruarinus Edwards
 Smithii Group (Gillies & de Meillon, 1968)
caroni Adam
faini Leleup
hamoni Adam
jebudensis Froud
lovettae Evans
rageaui Mattingly & Adam
smithii Theobald
vanhoofi Manson & Lebied
wilsoni Evans
 Tessellatus Group (Rattanarithikul *et al.*, 2006b)
tessellatus Theobald
 subspecies *kalawara* Stoker & Waktoedi Koesoemawinangoen
 subspecies *orientalis* (Swellengrebel & Swellengrebel de Graaf
 subspecies *tessellatus* Theobald
 Tessellatus Complex (Bourke *et al.*, 2021)
tessellatus Theobald (species A, B, C, D, E and F)
 Paramyzomyia Series (Christophers & Barraud, 1931)
 Cinereus Group (Gillies & de Meillon, 1968)
azevedoi Ribeiro
cinereus Theobald
 subspecies *cinereus* Theobald
 subspecies *hispaniola* (Theobald)
turkhudi Liston
 subspecies *telamali* Saliternik & Theodor
 subspecies *turkhudi* Liston

Listeri Group (Gillies & de Meillon, 1968)
listeri de Meillon
multicolor Cambouliu
seretsei Abdulla-Khan, Coetzee & Hunt

Pyretophorus Series (Edwards, 1932a)
christyi (Newstead & Carter)
comorensis Brunhes, le Goff & Geoffroy
daudi Coluzzi
indefinitus (Ludlow)
limosus King
litoralis King
ludlowae (Theobald)
 subspecies *ludlowae* (Theobald)
 subspecies *torakala* Stoker & Waktoedi Koesoemawinangoen

parangensis (Ludlow)
pseudosundaicus Tyagi, Hiriyan, Tewari, Ayanar, Samuel, Arunachalam, Paramasivan, Krishnamoorthy, Dhananjeyan, Leo & Rajendran

vagus Dönitz

Gambiae Complex (White, 1985)
amharicus Hunt, Wilkerson & Coetzee
arabiensis Patton
bwambae White
coluzzii Coetzee & Wilkerson
gambiae Giles
melas Theobald
merus Dönitz
quadriannulatus (Theobald)

Subpictus Complex (Suguna *et al.*, 1994)
subpictus Grassi (species A, B, C and D)

Sundaicus Complex (Sukowati *et al.*, 1999)
epiroticus Linton & Harbach
sundaicus (Rodenwaldt)
sundaicus (species B, C, D and E) (Dusfour *et al.*, 2007)

Subgenus *Christya* Theobald

implexus (Theobald)
okuensis Brunhes, Le Goff & Geoffroy

Subgenus *Kerteszia* Theobald

ayantepuiensis Harbach & Navarro
bambusicolus Komp
lepidotus Zavortink

Bellator Complex (Bourke *et al.*, 2023)
bellator Dyar & Knab (*bellator* 1)

bellator 2

Boliviensis Complex (Bourke *et al.*, 2023)

(identity of *boliviensis* (Theobald) s.s. not determined)

boliviensis 1

boliviensis 2

boliviensis 3

Cruzii Complex (Ramirez & Dessen, 2000a)

cruzii Dyar & Knab (species A, B and C) (Ramirez & Dessen, 2000b). More recent studies by de Carvalho-Pinto & Lourenço-de-Oliveira (2004) and Rona *et al.* (2009, 2010a, 2010b, 2013) suggest the complex consists of 4 or 5 species, but how these relate to the three chromosomal species of Ramirez & Dessen (2000b) is not clear. Also see Bourke *et al.* (2023).

Homunculus Complex (Bourke *et al.*, 2023)

homunculus Komp (*homunculus* 1?)

homunculus 2

Laneanus Complex (Bourke *et al.*, 2023)

laneanus 1

laneanus Corrêa & Cerqueira (*laneanus* 2)

Neivai Complex (Bourke *et al.*, 2023)

neivai Howard, Dyar & Knab (*neivai* 1)

neivai 2

neivai 3

neivai 4

neivai 5

neivai 6

neivai 7

neivai 8 (*neivai* nr *neivai* 4 of Ahumada *et al.*, 2016)

Pholidotus Complex (Bourke *et al.*, 2023)

(identity of *pholidotus* Zavortink s.s. not determined)

pholidotus 1

pholidotus 2

pholidotus 3

pholidotus 4

Rollai Complex (Bourke *et al.*, 2023)

(identity of *rollai* Cova García *et al.* s.s. not determined)

rollai 1

rollai 2

rollai 3

rollai 4

rollai 5

Subgenus *Lophopodomyia* Antunes

gilesi (Peryassú)

gomezdelatorrei Leví-Castillo

oiketorakras Osorno-Mesa

pseudotibiamaculatus Galvão & Barretto
squamifemur Antunes
vargasi Gabaldon, Cova-García & Lopez

Subgenus *Nyssorhynchus* Blanchard

Albimanus Section (Levi Castillo, 1949)
Albimanus Series (Faran, 1980)
 albimanus Wiedemann
Oswaldoi Series (Faran, 1980)
 Oswaldoi Group (Faran, 1980)
 Oswaldoi Subgroup (Faran, 1980)
 anomalophyllus Komp
 aquasalis Curry
 evansae (Brèthes)
 galvaoi Causey
 inini Senevet & Abonnenc
Konderi Complex (Ruiz-Lopez *et al.*, 2013)
 konderi Galvão & Damasceno
 tadei Saraiva & Scarpassa (formerly *sp. nr. konderi* of Ruiz-Lopez *et al.*, 2013)
Nuneztovari Complex (Mirabello & Conn, 2008; Foster *et al.*, 2013; Scarpassa *et al.*, 2016)
 dunhami Causey
 goeldii Rozeboom & Gabaldón
 jamariensis (Sant'Ana & Sallum)
 nuneztovari Gabaldón
 nuneztovari B and C
Oswaldoi Complex (Ruiz-Lopez *et al.*, 2013)
 oswaldoi (Peryassú)
 oswaldoi A (Ruiz-Lopez *et al.*, 2013)
 oswaldoi B (Ruiz *et al.*, 2005; Ruiz *et al.*, 2010)
 rangeli Gabaldon, Cova-Garcia & Lopez
 sanctielii Senevet & Abonnenc
 trinkae Faran
Strodei Subgroup (Faran, 1980)
 albertoi Unti
 CP Form (Sallum *et al.*, 2010)
 rondoni (Neiva & Pinto)
 striatus Sant'Ana & Sallum
 strodei Root
Arthuri Complex (Bourke *et al.*, 2013)
 arthuri (species A)
 arthuri B
 arthuri D
 rondoniensis (Sant'Ana & Sallum, 2022) (species C)
Benarrochi Complex (Ruiz *et al.*, 2005)

benarrochi Gabaldon, Cova-Garcia & Lopez
benarrochi B (Ruiz *et al.*, 2005)
Triannulatus Group (Faran, 1980)
 halophylus Silva do Nascimento & Lourenço-de-Oliveira
 triannulatus (Neiva & Pinto)
 triannulatus (species C) (Silva-do-Nascimento & Lourenço-de-Oliveira, 2007)
Argyritarsis Section (Levi Castillo, 1949)
Albitarsis Series (Linthicum, 1988)
 Albitarsis Group (Linthicum, 1988)
 Albitarsis Complex (Wilkerson *et al.*, 1995)
 albitarsis Lynch Arribálzaga
 albitarsis (species F, G, H and I) (Brochero *et al.*, 2007; Ruiz-Lopez *et al.*, 2012)
 deaneorum Rosa-Freitas
 janconnae Wilkerson & Sallum
 lineage nr *janconnae* (Gutiérrez *et al.*, 2010)
 marajoara Galvão & Damasceno (lineages 1 and 2) (McKeon *et al.*, 2010)
 oryzalimnetes Wilkerson & Motoki
 Braziliensis Group (Linthicum, 1988)
 braziliensis (Chagas)
Argyritarsis Series (Linthicum, 1988)
 Argyritarsis Group (Linthicum, 1988)
 argyritarsis Robineau-Desvoidy
 sawyeri Causey, Deane, Deane & Sampaio
 Darlingi Group (Linthicum, 1988)
 darlingi Root
 Lanei Group (Linthicum, 1988)
 lanei Galvão & Franco do Amaral
 Pictipennis Group (Linthicum, 1988)
 atacamensis González & Sallum
 pictipennis (Philippi)
Myzorhynchella Section (Peyton *et al.*, 1992)
 antunesi Galvão & Franco do Amaral
 guarani Shannon, 1928
 lutzii Cruz
 nigritarsis (Chagas)
 parvus (Chagas)
 pristinus Nagaki & Sallum

Subgenus *Stethomyia* Theobald

acanthotorynus Komp
canorii Flock & Abonnenc
kompi Edwards
nimbus (Theobald)
thomasi Shannon

Nomina dubia

africanus Roque
allopha (Peryassú)
arnoulti Grjebine
brachypus Dönitz
costalis Loew
courdurieri Grjebine
jacobi (Hill & Haydon)
minutus Macquart
nero (Doleschall)
soalalaensis Grjebine
upemba Lips
vulgaris Hatori

References

- Ahumada, M.L., Orjuela, L.I., Pareja, P.X., Conde, M., Cabarcas, D.M., Cubillos, E.F.G., Lopez, J.A., Beier, J.C., Herrera, S. & Quiñones, M.L. 2016. Spatial distributions of *Anopheles* species in relation to malaria incidence at 70 localities in the highly endemic Northwest and South Pacific coast regions of Colombia. *Malaria Journal* 15: 407.
- Ali, R.S.M., Wahid, I., Saeung, A., Wannasan, A., Harbach, R.E. & Somboon, P. 2019a. Genetic and morphological evidence for a new species of the Maculatus Group of *Anopheles* subgenus *Cellia* (Diptera: Culicidae) from Java, Indonesia. *Parasites & Vectors* 12: 107.
- Ali, R.S.M., Wahid, I., Saingamsook, J., Saeung, A., Wannasan, A., Walton, C., Harbach, R.E. & Somboon, P. 2019b. Molecular identification of mosquitoes of the *Anopheles maculatus* group of subgenus *Cellia* (Diptera: Culicidae) in the Indonesian Archipelago. *Acta Tropica* 199: 105124.
- Antunes, P.C.A. 1937a. A new *Anopheles* and a new *Goeldia* from Colombia (Dipt. Culic.). *Bulletin of Entomological Research* 28: 69–73.
- Atrie, B., Subbarao, S.K., Pillai, M.K.K., Rao, S.R.V. & Sharma, V.P. 1999. Population cytogenetic evidence for sibling species in *Anopheles annularis* (Diptera: Culicidae). *Annals of the Entomological Society of America* 92: 243–249.
- Belkin, J.N. 1962. *The mosquitoes of the South Pacific (Diptera, Culicidae)*. Volumes 1 and 2. University of California Press, Berkeley and Los Angeles.
- Booth, D.R. & Bryan, J.H. 1986. Cytogenetic and crossbreeding evidence for additional species in the *Anopheles annulipes* Walker complex (Diptera: Culicidae). *Journal of the Australian Entomological Society* 25: 315 –325.
- Bourke, B.P., Oliveira, T.P., Suesdek, L., Bergo, E.S. & Sallum, M.A.M. 2013. A multi-locus approach to barcoding in the *Anopheles strobiei* subgroup (Diptera: Culicidae). *Parasites & Vectors* 6: 111.
- Bourke, B.P., Wilkerson, R.C., Ruiz-Lopez, F., Justi, S.A., Pecor, D.B., Quinones, M.L., Navarro, J.-C., Ormaza, J.A., Ormaza, J.A., Jr, González R., Flores-Mendoza, C., Castro, F., Escobar, J. & Linton, Y.-M. 2023. High levels of diversity in *Anopheles* subgenus *Kerteszia* revealed by species delimitation analyses. *Genes* 14: 344.

- Bourke, B.P., Wilkerson, R.C. & Linton, Y.-M. 2021. Molecular species delimitation reveals high diversity in the mosquito *Anopheles tessellatus* Theobald, 1901 (Diptera, Culicidae) across its range. *Acta Tropica* 215: 105799.
- Bower, J.E., Dowton, M., Cooper, R.D. & Beebe, N.W. 2008. Intraspecific concerted evolution of the rDNA ITS1 in *Anopheles farauti* sensu stricto (Diptera: Culicidae) reveal recent patterns of population structure. *Journal of Molecular Evolution* 67: 397–411.
- Brochero, H.H.L., Li, C. & Wilkerson, R.C. 2007. A newly recognized species in the *Anopheles (Nyssorhynchus) albitarsis* complex (Diptera: Culicidae) from Puerto Carreño, Colombia. *American Journal of Tropical Medicine and Hygiene* 76: 1113–1117.
- Chen, B., Butlin, R.K. & Harbach, R.E. 2003. Molecular phylogenetics of the Oriental members of the Myzomyia Series of *Anopheles* subgenus *Cellia* (Diptera: Culicidae) inferred from nuclear and mitochondrial DNA sequences. *Systematic Entomology* 28: 57–69.
- Christophers, S.R. 1915. The male genitalia of *Anopheles*. *Indian Journal of Medical Research* 3: 371–394.
- Christophers, S.R. 1924a. Provisional list and reference catalogue of the Anophelini. *Indian Medical Research Memoirs* 3: 1–105.
- Christophers, S.R. & Barraud, P.J. 1931. The eggs of Indian *Anopheles*, with descriptions of the hitherto undescribed eggs of a number of species. *Records of the Malaria Survey of India* 2: 161–192, 5 pls.
- Cohuet, A., Simard, F., Toto, J.C., Kengne, P., Coetzee, M. & Fontenille, D. 2003. Species identification within the *Anopheles funestus* group of malaria vectors in Cameroon and evidence for a new species. *American Journal of Tropical Medicine and Hygiene* 69: 200–205.
- Coluzzi, M., Sacca, G. & Feliciangeli, D. 1965. Il complesso *A. claviger* nella sottoregione mediterranea. *Cahiers ORSTROM, série Entomologie médicale et Parasitologie* 1965: 97–102.
- da Costa Lima, A. 1928. Sobre algumas anophelinhas encontradas no Brasil. *Suplemento das Memorias do Instituto Oswaldo Cruz* 3: 91–113.
- de Carvalho-Pinto, C.J. & Lourenço-de-Oliveira, R. 2004. Isoenzymatic [sic] analysis of four *Anopheles (Kerteszia) cruzii* (Diptera: Culicidae) populations of Brazil. *Memórias do Instituto Oswaldo Cruz* 99(5): 471–475.
- Djadid, N.D., Jazayeri, H., Gholizadeh, S., Pashaeirad, S. & Zakeri, S. 2009. First record of a new member of *Anopheles* Hyrcanus Group from Iran: molecular identification, diagnosis, phylogeny, status of kdr resistance and *Plasmodium* infection. *Journal of Medical Entomology* 46: 1084–1093.
- Dusfour, I., Michaux, J.R., Harbach, R.E. & Manguin, S. 2007. Speciation and phylogeography of the Southeast Asian *Anopheles sundaicus* complex. *Infection, Genetics and Evolution* 7: 484–493.
- Dyar, H.G. 1928. *The mosquitoes of the Americas*. Publication no. 387. Carnegie Institution of Washington, Washington, D.C.
- Edwards, F.W. 1921d. A revision of the mosquitos [sic] of the Palaearctic Region. *Bulletin of Entomological Research* 12: 263–351.
- Edwards, F.W. 1932a. *Genera Insectorum. Diptera, Fam. Culicidae*. Fascicle 194. Desmet-Verteneuil, Brussels.

- Faran, M.E. 1980. Mosquito studies (Diptera, Culicidae) XXXIV. A revision of the Albimanus Section of the subgenus *Nyssorhynchus* of *Anopheles*. *Contributions of the American Entomological Institute* 15(7): 1–215.
- Faran, M.E. & Linthicum, K.J. 1981. A handbook of the Amazonian species of *Anopheles* (*Nyssorhynchus*) (Diptera: Culicidae). *Mosquito Systematics* 13: 1–81.
- Firooziyani, S., Djadid, N.D. & Gholizadeh, S. 2018. Speculation on the possibility for introducing *Anopheles stephensi* as a species complex: preliminary evidence based on odorant binding protein 1 intron I sequence. *Malaria Journal* 17: 366.
- Foley, D.H., Cooper, R.D. & Bryan, J.H. 1995. A new species within the *Anopheles punctulatus* complex in Western Province, Papua New Guinea. *Journal of the American Mosquito Control Association* 11: 122–127.
- Foley, D.H., Paru, R., Dagoro, H. & Bryan, J.H. 1993. Allozyme analysis reveals six species within the *An. punctulatus* complex of mosquitoes in Papua New Guinea. *Medical and Veterinary Entomology* 7: 37–48.
- Foley, D.H., Wilkerson, R.C., Cooper, R.D., Volovsek, M.E. & Bryan, J.H. 2007. A molecular phylogeny of *Anopheles annulipes* (Diptera: Culicidae) sensu lato: The most species-rich anopheline complex. *Molecular Phylogenetics and Evolution* 43: 283–297.
- Foster, P.G., Bergo, E.S., Bourke, B.P., Oliveira, T.M.P., Nagaki, S.S. Sant'Ana, D.C. & Sallum, M.A.M. 2013. Phylogenetic analysis and DNA-based species confirmation in *Anopheles* (*Nyssorhynchus*). *PLoS ONE* 8: e54063.
- Gabaldon, A. 1940. Estudios sobre anofelinos. Serie I. 1. Descripción de *Anopheles* (*Nyssorhynchus*) *nuñez-tovari* [sic] n. sp. y consideraciones sobre una sub-division del grupo *Nyssorhynchus* (Diptera, Culicidae). *Publicación del División de Malariaología (Caracas)* 5: 3–7.
- Gabaldon, A. & Cova-Garcia, P. 1952. Zoogeografía de los anofelinos en Venezuela IV Su posición en la región Neotrópica y observaciones sobre las especies de esta región. *Revista Venezolana Sanidad y Asistencia Social* 17: 171–209, 12 pls.
- Galvão, A.L.A. 1941b Contribuição ao conhecimento das espécies de *Myzorhynchella* (Diptera, Culicidae) [sic]. *Arquivos de Zoologia (São Paulo)* 2: 505–576, 13 pls.
- Galvão, A.L.A. 1943. Chaves para a determinação das espécies do subgênero *Nyssorhynchus* do Brasil. *Arquivos de Higiene Saúde Pública* 8(19): 141–162.
- Garros, C., Harbach, R.E. & Manguin, S. 2005b. Morphological assessment and molecular phylogenetics of the Funestus and Minimus Groups of *Anopheles* (*Cellia*). *Journal of Medical Entomology* 42: 522–536.
- Gillies, M.T. & Coetzee, M. 1987. A supplement to the Anophelinae of Africa south of the Sahara (Afrotropical Region). *Publications of the South African Institute for Medical Research* 55: 1–143.
- Gillies, M.T. & de Meillon, B. 1968. The Anophelinae of Africa south of the Sahara (Ethiopian Zoogeographical Region). *Publications of the South African Institute for Medical Research* 54: 1–343.
- Green, C.A., Cass, R.F., Munstermann, L.E. & Baimai, V. 1990. Population-genetic evidence for two species in *Anopheles minimus* in Thailand. *Medical and Veterinary Entomology* 4: 25–34.
- Green, C.A., Harrison, B.A., Klein, T.A. & Baimai, V. 1985b. Cladistic analysis of polytene chromosome rearrangements in anopheline mosquitoes, subgenus *Cellia*, series *Neocellia*. *Canadian Journal of Genetics and Cytology* 27: 123–133.

- Grjebine, A. 1966. *Faune de Madagascar. XXII. Insectes Diptères Culicidae Anophelinae*. Centre National de la Recherche Scientifique, Office de la Recherche Scientifique et Technique Outre-Mer, Paris.
- Gutiérrez, L.A., Orrego, L.M., Gómez, G.F., López, A., Luckhart, S., Conn, J.E. & Correa, M.M. 2010. A new mtDNA COI gene lineage closely related to *Anopheles janconnae* of the Albitarsis complex in the Caribbean region of Colombia. *Memorias do Instituto Oswaldo Cruz* 105: 1019–1025.
- Harbach, R.E. 1994a. Review of the internal classification of the genus *Anopheles* (Diptera: Culicidae): the foundation for comparative systematics and phylogenetic research. *Bulletin of Entomological Research* 84: 331–342.
- Harbach, R.E. 2004. The classification of genus *Anopheles* (Diptera: Culicidae): a working hypothesis of phylogenetic relationships. *Bulletin of Entomological Research* 95: 537–553.
- Harbach, R.E. & Kitching, I.J. 2015. The phylogeny of Anophelinae revisited: inferences about the origin and classification of *Anopheles* (Diptera: Culicidae). *Zoologica Scripta* 00(0): 000–000. doi:10.1111/zsc.12137
- Harbach, R.E., Rattanarithikul, R. & Harrison, B.A. 2005. *Baimaia*, a new subgenus for *Anopheles kyondawensis* Abraham, a unique crabhole-breeding anopheline in southeastern Asia. *Proceedings of the Entomological Society of Washington* 107: 750–761.
- Harrison, B.A. 1972. A new interpretation of affinities within the *Anopheles hyrcanus* complex of Southeast Asia. *Mosquito Systematics* 4: 73–83.
- Harrison, B. A. 1980. Medical entomology studies – XIII. The Myzomyia Series of *Anopheles (Cellia)* in Thailand, with emphasis on intra-interspecific variations (Diptera: Culicidae). *Contributions of the American Entomological Institute* 17(4): iv + 1–195.
- Harrison, B.A., Rattanarithikul, R., Peyton, E.L. & Mongkolpanya, K. 1991. Taxonomic changes, revised occurrence records and notes on the Culicidae of Thailand and neighboring countries. *Mosquito Systematics* (1990) 22: 196–227.
- Hunt, R.H., Coetzee, M. & Fettene, M. 1998. The *Anopheles gambiae* complex: a new species from Ethiopia. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 92: 231–235.
- International Commission on Zoological Nomenclature. 1999. *International code of zoological nomenclature*. Fourth Edition. International Trust for Zoological Nomenclature, London.
- Kar, I., Subbarao, S.K., Eapen, A., Ravendaran, J., Satyanarayana, T.S., Raghavendra, K., Nanda, N. & Sharma, V.P. 1999. Evidence for a new malaria vector species, species E, within the *Anopheles culicifacies* complex (Diptera: Culicidae). *Journal of Medical Entomology* 36: 595–600.
- Knab, F. 1913b. The species of *Anopheles* that transmit human malaria. *American Journal of Tropical Diseases and Preventive Medicine* 1: 33–43.
- Koekemoer, L.L., Misiani, E.A., Hunt, R.H., Kent, R.J., Norris, D.E. & Coetze, M. 2009. Cryptic species within *Anopheles longipalpis* from southern Africa and phylogenetic comparison with members of the *An. funestus* group. *Bulletin of Entomological Research* 99: 41–49.
- Komp, W.H.W. 1937b. The species of the subgenus *Kerteszia* of *Anopheles* (Diptera, Culicidae). *Annals of the Entomological Society of America* 30: 492–529.
- Komp, W.H.W. 1942. The anopheline mosquitoes of the Caribbean Region. *National Institute of Health Bulletin* 179: 1–195.

- Lee, D.J., Hicks, M.M., Griffiths, M., Debenham, M.L., Bryan, J.H., Russell, R.C., Geary, M. & Marks, E.N. 1987b. *The Culicidae of the Australasian Region*. Volume 5. Nomenclature, synonymy, literature, distribution, biology and relation to disease. Genus *Anopheles*. Subgenera *Anopheles*, *Cellia*. Monograph Series, Entomology Monograph No. 2. Australian Government Publishing Service, Canberra.
- Levi Castillo, R. 1949. *Atlas de los anofelinos Sudamericanos*. Sociedad Filantrópica de Guayas, Guayaquil, Ecuador.
- Linthicum, K.J. 1988. A revision of the Argyritarsis Section of the subgenus *Nyssorhynchus* of *Anopheles* (Diptera: Culicidae). *Mosquito Systematics* 20: 98–271.
- Linton, Y. 2004. Systematics of the holarctic *maculipennis* complex. The 70th Annual Meeting of the American Mosquito Control Association, Savannah, Georgia, U.S.A., February 22-26, 2004.
- Mirabello, L. & Conn, J.E. 2008. Population analysis using the nuclear *white* gene detects Pliocene/Pleistocene lineage divergence within *Anopheles nuneztovari* in South America. *Medical and Veterinary Entomology* 22: 109–119.
- McKeon, S.N., Lehr, M.A., Wilkerson, R.C., Ruiz, J.F., Sallum, M.A., Povoa, M.M., Conn, J.E. & Lima, J.B.P. 2010. Lineage divergence detected in the malaria vector *Anopheles marajoara* (Diptera: Culicidae) in Amazonian Brazil. *Malaria Journal* 9: 271.
- Namgay, R., Pemo, D., Wangdi, T., Phanitchakun, T., Harbach, R.E. & Somboon, P. 2020. Molecular and morphological evidence for sibling species within *Anopheles* (*Anopheles*) *lindesayi* Giles (Diptera: Culicidae) in Bhutan. *Acta Tropica* 207: 105455.
- Oshaghi, M.A., Shemshad, Kh., Yaghobi-Ershadi, M.R., Pedram, M., Vatandoost, H., Abaie, M.R., Akbarzadeh, K. & Mohtarami, F. 2007. Genetic structure of the malaria vector *Anopheles superpictus* in Iran using mitochondrial cytochrome oxidase (COI and COII) and morphologic markers: A new species complex? *Acta Tropica* 101: 241–248.
- Oshaghi, M.A., Yaghobi-Ershadi, M.R., Shemshad, Kh., Pedram, M. & Amani, H. 2008. The *Anopheles superpictus* complex: introduction of a new malaria vector complex in Iran. *Bulletin de la Société de Pathologie exotique* 101: 429–434.
- Paredes-Esquivel, C., Donnelly, M.J., Harbach, R.E., Townson, H. 2009. A molecular phylogeny of mosquitoes in the *Anopheles barbirostris* subgroup reveals cryptic species: implications for identification of disease vectors. *Molecular Phylogenetics and Evolution* 50: 141–151.
- Peyton, E.L. 1990. A new classification for the Leucosphyrus Group of *Anopheles* (*Cellia*). *Mosquito Systematics* (1989) 21 197–205.
- Peyton, E.L., Wilkerson, R.C. & Harbach, R.E. 1992. Comparative analysis of the subgenera *Kerteszia* and *Nyssorhynchus* of *Anopheles* (Diptera: Culicidae). *Mosquito Systematics* 24: 51–69.
- Ramirez, C.C. & Dessen, E.M. 2000a. Chromosomal evidence for sibling species of the malaria vector *Anopheles cruzii*. *Genome* 43: 143–151.
- Ramirez, C.C. & Dessen, E.M. 2000b. Chromosome differentiated populations of *Anopheles cruzii*: evidence for a third sibling species. *Genetica* 108: 73–80.
- Rattanarithikul, R. & Green, C.A. 1987. Formal recognition of the species of the *Anopheles maculatus* group (Diptera: Culicidae) occurring in Thailand, including the descriptions of two new species and a preliminary key to females. *Mosquito Systematics* (1986) 18: 246–278.

- Rattanarithikul, R., Harrison, B.A., Harbach, R.E., Panthusiri, P. & Coleman, R.E. 2006b. Illustrated Keys to the mosquitoes of Thailand. IV. *Anopheles*. *Southeast Asian Journal of Tropical Medicine and Public Health* 37 (suppl. 2): 1–128.
- Reid, J.A. 1949. A preliminary account of the forms of *Anopheles leucosphyrus* Dönitz (Diptera: Culicidae). *Proceedings of the Royal Entomological Society of London Series B Taxonomy* 18: 42–53.
- Reid, J.A. 1950. The *Anopheles umbrosus* group (Diptera: Culicidae). Part 1: systematics, with descriptions of two new species. *Transactions of the Royal Entomological Society of London* 101: 281–318.
- Reid, J.A. 1953. The *Anopheles hyrcanus* group in south-east Asia (Diptera: Culicidae). *Bulletin of Entomological Research* 44: 5–76.
- Reid, J.A. 1968. Anopheline mosquitoes of Malaya and Borneo. *Studies from the Institute for Medical Research Malaya* 31: 1–520.
- Reid, J.A. & Knight, K.L. 1961. Classification within the subgenus *Anopheles* (Diptera, Culicidae). *Annals of Tropical Medicine and Parasitology* 55: 474–488.
- Rona, L.D.P., Carvalho-Pinto, C.J., Gentile, C., Grisard, E.C. & Peixoto, A.A. 2009. Assessing the molecular divergence between *Anopheles (Kerteszia) cruzii* populations from Brazil using the *timeless* gene: further evidence of a species complex. *Malaria Journal* 8: 60.
- Rona, L.D.P., Caarvalho-Pinto, C.J. & Peixoto, A.A. 2010a. Molecular evidence for the occurrence of a new sibling species within the *Anopheles (Kerteszia) cruzii* complex in south-east Brazil. *Malaria Journal* 9: 33.
- Rona, L.D.P., Carvalho-Pinto, C.J., Mazzoni, C.J. & Peixoto, A.A. 2010b. Estimation of divergence time between two sibling species of the *Anopheles (Kerteszia) ccruzii* complex using a multilocus approach. *BMC Evolutionary Biology* 10: 91.
- Rona, L.D.P., Carvalho-Pinto, D.J. & Peixoto, A.A. 2013. Evidence for the occurrence of two sympatric sibling species within the *Anopheles (Kerteszia) cruzii* complex in southeast Brazil and the detection of asymmetric introgression between them using a multilocus analysis. *BMC Evolutionary Biology* 13: 207.
- Root, F.M. 1922a. The classification of American *Anopheles* mosquitoes. *American Journal of Hygiene* 2: 321–322.
- Root, F.M. 1923. The male genitalia of some American *Anopheles* mosquitoes. *American Journal of Hygiene* 3: 264–279.
- Ruiz, F., Quiñones, M.L., Erazo, H.F., Calle, D.A., Alzate, J.F. & Linton, Y.-M. 2005. Molecular differentiation of *Anopheles (Nyssorhynchus) benarrochi* and *An. (N.) oswaldoi* from Southern Colombia. *Memorias do Instituto Oswaldo Cruz* 100: 155–160.
- Ruiz, F., Linton, Y.-M., Ponsonby, D.J., Conn, J.E., Herrera, M., Quiñones, M.L., Vélez, I.D. Wilkerson, R.C. 2010. Molecular comparison of topotypic specimens confirms *Anopheles (Nyssorhynchus) dunhami* Causey (Diptera: Culicidae) in the Colombian Amazon. *Memorias do Instituto Oswaldo Cruz* 105(7): 899–903.
- Ruiz-Lopez, F., Wilkerson, R.C., Conn, J.E., McKeon, S.N., Levin, D.M., Quiñones, M.L., Póvoa, M.M., Linton, Y.-M. 2012. DNA barcoding reveals both known and novel taxa in the Albitarsis Group (*Anopheles: Nyssorhynchus*) of Neotropical malaria vectors. *Parasites & Vectors* 5: 44.
- Ruiz-Lopez, F., Wilkerson, R.C., Ponsonby, D., Herrera, M., Sallum, M.A.M., Velez, I.D., Quiñones, M.L., Flores-Mendoza, C., Chadee, D.D., Alarcon, J., Alarcon-Ormasa, J. &

- Linton, Y.-M. 2013. Systematics of the Oswaldoi Complex (*Anopheles*, *Nyssorhynchus*) in South America. *Parasites & Vectors* 6: 324.
- Sallum, M.A.M., Foster, P.G., dos Santos, C.L.S., Flores, D.C., Motoki, M.T. & Bergo, E.S. 2010. Resurrection of two species from synonymy of *Anopheles (Nyssorhynchus) strodei* Root, and characterization of a distinct morphological form from the Strodei Complex (Diptera: Culicidae). *Journal of Medical Entomology* 47: 504–526.
- Sallum, M.A.M., Peyton, E.L., Harrison, B.A. & Wilkerson, R.C. 2005b. Revision of the Leucosphyrus group of *Anopheles* (*Cellia*) (Diptera, Culicidae). *Revista Brasileira de Entomologia* 49 (Supl. 1): 1–152.
- Sallum, M.A.M., Peyton, E.L. & Wilkerson, R.C. 2005a. Six new species of the *Anopheles leucosphyrus* group, reinterpretation of *An. elegans* and vector implications. *Medical and Veterinary Entomology* 19: 158–199.
- Sant'Ana, D.C. & Sallum, M.A.M. 2022. A new species of the Arthuri Complex of the Strodei Subgroup of *Nyssorhynchus* (Diptera: Culicidae). *Zootaxa* 5175(5): 559–569.
- Saraiva, J.F. & Scarpassa, V.M. 2021. *Anopheles (Nyssorhynchus) tadei*: A new species of the Oswaldoi-konderi Complex (Diptera, Anophelinae) and its morphological and molecular distinctions from *An. konderi* sensu stricto. *Acta Tropica* 221: 106004.
- Sarala, K.S., Nutan, N., Vasantha, K., Dua, V.K., Malhotra, M.S., Yadav, R.S. & Sharma, V.P. 1994. Cytogenetic evidence for three sibling species in *Anopheles fluviatilis* (Diptera: Culicidae). *Annals of the Entomological Society of America* 87:116–121.
- Satoto, T.B.T. 2001. Cryptic species within *Anopheles barbirostris* van der Wulp, 1884, inferred from nuclear and mitochondrial gene sequence variation. PhD Thesis. University of Liverpool, England.
- Scarpassa, V.M., Cunha-Machado, A.S. & Saraiva, J.F. 2016. Evidence of new species for malaria vector *Anopheles nuneztovari* sensu lato in the Brazilian Amazon region. *Malaria Journal* 15: 205.
- Schmidt, E.R., Foley, D.H., Bugoro, H. & Bryan, J.H. 2003. A morphological study of the *Anopheles punctulatus* group (Diptera: Culicidae) in the Solomon Islands, with a description of *Anopheles (Cellia) irenicus* Schmidt, sp.n. *Bulletin of Entomological Research* 93: 515– 526.
- Schmidt, E.R., Foley, D.H., Hartel, G.F., Williams, G.M. & Bryan, J.H. 2001. Descriptions of the *Anopheles (Cellia) farauti* complex of sibling species (Diptera: Culicidae) in Australia. *Bulletin of Entomological Research* 91: 389–410.
- Silva-do-Nascimento, T.R. & Lourenço-de-Oliveira, R. 2007. Diverse population dynamics of three *Anopheles* species belonging to the Triannulatus Complex (Diptera: Culicidae). *Memorias do Instituto Oswaldo Cruz* 102: 975–982.
- Somboon, P., Phanitchakun, T., Namgay, R., Wangdi, T., Pemo, D. & Harbach, R.E. 2020. Molecular and morphological evidence of sibling species in *Anopheles baileyi* Edwards (Diptera: Culicidae) in Bhutan and Thailand. *Acta Tropica* 209: 105549.
- Spillings, B.L., Brooke, B.D., Koekemoer, L.L., Chiphwanya, J., Coetzee, M. & Hunt, R.H. 2009. A new species concealed by *Anopheles funestus* Giles, a major malaria vector in Africa. *American Journal of Tropical Medicine and Hygiene* 81: 510–515.
- Suguna, S.G., Rathinam, K.G., Rajavel, A.R. & Dhanda, V. 1994. Morphological and chromosomal descriptions of new species in the *Anopheles subpictus* complex. *Medical and Veterinary Entomology* 9: 88–94.

- Sukowati, S., Baimai, V., Harun, S., Dasuki, Y., Andris, H. & Efriwati, M. 1999. Isozyme evidence for three sibling species in the *Anopheles sundaicus* complex from Indonesia. *Medical and Veterinary Entomology* 13: 408–414.
- Takano, K.T., Nguyen, N.T.H., Nguyen, B.T.H., Sunahara, T., Yasunami, M., Nguyen, M.D. & Takagi, M. 2010. Partial mitochondrial DNA sequences suggest the existence of a cryptic species within the Leucosphyrus group [*sic*] of the genus *Anopheles* (Diptera: Culicidae), forest malaria vectors, in northern Vietnam. *Parasites and Vectors* 3: 41.
- Theobald, F.V. 1907. *A monograph of the Culicidae or mosquitoes*. Volume 4. British Museum (Natural History), London.
- Vu, T.P., Nguyen, D.M., Tran, D.H. & Nguyen, N.V. 1991. *Anopheles (Anopheles) cucphuongensis*: a new species from Vietnam (Diptera: Culicidae). *Mosquito Systematics* (1990) 22: 145–148.
- White, G.B. 1985. *Anopheles bwambae* sp.n., a malaria vector in the Semliki Valley, Uganda, and its relationships with other sibling species of the *An. gambiae* complex (Diptera: Culicidae). *Systematic Entomology* 10: 501–522.
- Wilkerson, R.C., Parsons, T.J., Klein, T.A., Gaffigan, T.V., Bergo, E. & Consolim, J. 1995. Diagnosis by random amplified polymorphic DNA polymerase chain reaction for four cryptic species related to *Anopheles (Nyssorhynchus) albitarsis* (Diptera: Culicidae) from Paraguay, Argentina, and Brazil. *Journal of Medical Entomology* 32: 697–704.
- Wilkerson, R.C., Reinert, J.F. & Li, C. 2004. Ribosomal DNA ITS2 sequences differentiate six species in the *Anopheles crucians* complex (Diptera: Culicidae). *Journal of Medical Entomology* 41: 392–401.
- Zavortink, T.J. 1973. Mosquito studies (Diptera, Culicidae) XXIX. A review of the subgenus *Kerteszia* of *Anopheles*. *Contributions of the American Entomological Institute* 9(3): 1–54.