Title. Mosquitoes (Diptera: Culicidae) of Ecuador: A revised checklist, new records and species of medical importance.

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Abstract

Ecuador is one of the countries with the highest biodiversity in the world, this can also be seen in the Culicidae family. However, there are a limited number of studies on this group. This work provides a baseline reference for this insect group and information about numerous potential and vector disease species. Species names and records were extracted from the National Mosquito Reference Collection at INSPI-Quito, published literature and web databases. The specimens at the INSPI collection were identified using morphological keys and, in a few cases, using molecular markers in the genus *Anopheles*. An updated list includes the subfamilies Culicinae and Anophelinae, eight tribes, 22 genera and 200 species. We present 18 species cataloged as new records for Ecuador represented in two subfamilies, 6 tribes and 9 genera. Taxonomic notes, geographical distribution and medical importance data for the species involved are provided. The updated list of Mosquitoes (Diptera: Culicidae) is a guide for researchers and health personnel when studying biodiversity, fauna, insect vectors and strategies to prevent the spread of vector diseases.

62 Introduction

63 Ecuador is considered one of the most biodiverse countries in the world due to rich and unique
64 habitats. Arthropods dominate rainforest ecosystems in terms of species numbers and Ecuador is
65 among the countries recognized as one of the centers of speciation, because of its complex
66 geological history and climate (1).

67 Ecuador is located on the northwest coast of South America, and its territory includes the
68 continental mainland and the Galápagos Islands in the Pacific Ocean. The mainland of Ecuador
69 is divided geographically into the coastal lowlands on the west of the Andes Mountains, the
70 Andes or highlands, with valleys and mountains with snowed peaks of up to 6300 m, and
71 lowlands on the east of the Andes that are part of the Amazon basin. As a consequence of this
72 geographical diversity Ecuador has 26 Holdridge ecological life zones, one of the highest in the
73 Neotropics (2, 3). These characteristics make Ecuador one of the most biodiverse countries in the
74 world. This biological richness is apparent also in the Culicidae family. However, in Ecuador,
75 this group has been overlooked for the last 50 years. Just recently, records of new species have
76 been reported for the country (4-6).

77 There are around 3570 species of the family Culicidae (Diptera) in the world, distributed in 112
78 genera and 145 subgenera, and arranged in two subfamilies, Anophelinae and Culicinae.
79 Anophelinae has three genera and Culicinae 109 genera (7). The first descriptions of mosquitoes
80 from Ecuador were done by Alexander von Humbolt in 1819 (8). The study of the mosquito
81 fauna of Ecuador then continued by Francisco Campos who contributed several publications on
82 mosquitoes (9-12). Campos collected mosquitoes mainly around the city of Guayaquil and
83 coastal areas. Those specimens were sent to Harrison G. Dyar, who described several species
84 from Ecuador around 1918-1925 (13) and several species were named after Campos.

85 Levi-Castillo has been, so far, one of the most significant contributors to the knowledge of
86 mosquitos of Ecuador. Among his most important publications are the Atlas de los Anofelinos
87 Sudamericanos (14) and the first Culicidae checklist of the country (15). In 1962, Levi-Castillo
88 abruptly quit entomology, which resulted in almost no publications dealing with the mosquito
89 fauna from Ecuador since then. In the next decade, 28 species of Culicidae for Ecuador were
90 reported (8), 19 of which were described by Levi-Castillo. The latter author reported an extended
91 list of mosquitoes collected mainly on the coastal areas and the highlands (15). Heinemann and
92 Belkin (16) reported detailed data for 80 mosquito species from Ecuador. The last list reported
93 for Ecuador mentions 179 species (4).

94 This work provides a baseline reference for this insect group and information about numerous
95 potential and vector disease species.

96 Materials and Methods

97 Species names and records were extracted from the National Mosquito Reference Collection
98 (CIREV) at INSPI-Quito (Instituto Nacional de Investigación en Salud Publica), here cited as
99 INSPI collection, published literature and web databases (17-19). The specimens at the INSPI

collection were identified using morphological keys and, in a few cases, using molecular markers in the genus *Anopheles*. The information was cross-checked to include only valid species names that are verified in primary bibliographic reports. Most of the species records by Levi-Castillo were not included, since most of the specimens used to describe or report the species are missing. The names used in this paper are the accepted names published by Harbach and Kitching (20) and genera and subgenera abbreviations according to Reinert (21, 22).

The species are presented in alphabetical order (Appendix 1) with synonym names and the geographic distribution in Ecuador. A list of new records is also presented (Table 1). Highland mosquito species denomination is arbitrary when insects were collected from over 1000 m of altitude. The medical importance of the pertinent species is also mentioned. The list treats the taxa *Lutzia* and *Onirion* as genera, although there is still discussion regarding their taxonomic status (23, 24).

Results

The updated list presents 200 species in 22 genera of Culicidae with geographical distribution and georeferenced points (Appendix 1). The subfamily Culicinae is represented by 8 tribes: Aedeomyiini (*Aedeomyia*), Aedini (*Aedes*, *Haemagogus* and *Psorophora*), Culicini (*Culex*, *Deinocerites*, *Galindomyia* and *Lutzia*), Mansoniini (*Coquillettidia*, *Mansonia*), Orthopodomyiini (*Orthopodomyia*), Sabethini (*Johnbelkinia*, *Limatus*, *Onirion*, *Runchomyia*, *Sabethes*, *Trichoprosopon* and *Wyeomyia*), Toxorhynchitini (*Toxorhynchites*), and Uranotaeniini (*Uranotaenia*). The Anophelinae subfamily is represented by the genera *Anopheles* and *Chagasia*.

We report 24 species of *Anopheles*, three of *Chagasia*, one of *Aedeomyia*, 21 of *Aedes*, 11 of *Haemagogus*, 12 of *Psorophora*, 61 of *Culex*, one of *Deinocerites*, one of the genus *Galindomyia*, one of *Lutzia*, five of *Coquillettidia*, five of *Mansonia*, three of *Orthopodomyia*, two of *Johnbelkinia*, three of *Limatus*, one of *Onirion*, one of *Runchomyia*, 14 of *Sabethes*, six of *Trichoprosopon*, 14 of *Wyeomyia*, five of *Toxorhynchites* and five of *Uranotaenia*.

We present below 18 species cataloged as new records for Ecuador represented in two subfamilies, 6 tribes and 9 genera. These mosquitoes were collected between 2010 and 2016. For these species, the collection sites, geographic coordinates, collection dates, habitat and collection method are detailed (Table 1). The geographical distribution is in several localities of the country and is represented by a map (Figure 1).

Subfamily Anophelinae:

1. *Anopheles* (*Nyssorhynchus*) *darlingi* Root, 1926. Synonym: *Anopheles paulistensis* Galvao, Lane & Correa, 1937. (1♀);
2. *Anopheles* (*Nyssorhynchus*) *evansae* Brèthes, 1926. Synonym: *Anopheles noroestensis* Galvao & Lane, 1937. (2♀);
3. *Anopheles* (*Nyssorhynchus*) *nuneztovari* Gabaldon, 1940. Synonym: *Anopheles goeldii* Rozeboom & Gabaldon, 1941. (7♀, 3♂).

138 **Subfamily Culicinae. Tribe Aedini:**

- 139 - 4. *Aedes (Ochlerotatus) albifasciatus* (Macquart, 1838). Synonyms: *Aedes colonarius*
 140 Dyar, 1924; *Culex albifasciatus* Macquart, 1838; *Culex annuliferus* Blanchard, 1852;
 141 *Culex flavipes* Macquart, 1838. (1♂);
 142 - 5. *Psorophora (Grabhamia) dimidiata* Cerqueira, 1943. (3♀);
 143 - 6. *Psorophora (Psorophora) holmbergii* Lynch Arribalzaga, 1891. Synonym:
 144 *Psorophora agoggylia* Dyar, 1922. (1♀).

145 **Tribe Culicini:**

- 146 - 7. *Culex (Aedinus) accelerans* Root, 1927. Synonym: *Culex paraplesia* Dyar, 1922. (1♀);
 147 - 8. *Culex (Culex) stigmatosoma* Dyar, 1907. (3♂, 1♀);
 148 - 9. *Culex (Culex) thriambus* Dyar, 1921. Synonyms: *Culex affinis* Adams, 1903; *Culex*
 149 *peus* Speiser, 1904; *Culex eumimetes* Dyar & Knab, 1908. (1♀).

150 **Tribe Mansoniini:**

- 151 - 10. *Coquillettidia (Rhynchoetaenia) albicosta* (Peryassu, 1908). Synonym:
 152 *Taeniorhynchus albicosta* Peryassu, 1908. (1♀).

153 **Tribe Orthopodomyiini:**

- 154 - 11. *Orthopodomyia albicosta* (Lutz, 1904). Synonym: *Bancroftia albicosta* Lutz, 1904.
 155 (3♀).

156 **Tribe Sabethini:**

- 157 - 12. *Sabethes (Sabethes) albiprivus* Theobald, 1903. Synonyms: *Sabethes albiprivatus*
 158 Lutz, 1904; *Sabethes albiprivatus* Theobald, 1907; *Sabethes neivai* Petrocchi, 1927.
 159 (6♀, 2♂);
 160 - 13. *Sabethes (Sabethes) belisarioi* Neiva, 1908. Synonyms: *Sabethes argyronotum*
 161 Edwards, 1928; *Sabethes goeldii* Howard, Dyar & Knab, 1917; *Sabethes schausi* Dyar &
 162 Knab, 1908. (1♀);
 163 - 14. *Sabethes (Sabethes) purpureus* (Theobald, 1901). Synonyms: *Sabethes purpureus*
 164 Peryassu, 1908; *Sabethes remipusculus* Dyar, 1924; *Sabethoides purpureus* Theobald,
 165 1907. (1♀, 1♂);
 166 - 15. *Sabethes (Sabethes) quasicyaneus* Peryassú, 1922. (2♀, 1♂);
 167 - 16. *Sabethes (Sabethoides) glaucodaemon* Dyar & Shannon, 1925. Synonym:
 168 *Sabethoides glaucodaemon* Dyar & Shannon, 1925. (2♀).

169 **Tribe Toxorhynchitini:**

- 170 - 17. *Toxorhynchites (Lynchiella) guadeloupensis* (Dyar & Knab, 1906). Synonyms:
 171 *Megarhina horei* Gordon & Evans, 1922; *Megarhinus tucumanus* Brèthes, 1926;

- 172 *Megarhinus arborealis* Shannon & Ponte, 1927; *Megarrhina guianensis* Bonne-Wepster
 173 & Bonne, 1953. (1♂);
 174 - 18. *Uranotaenia* (*Uranotaenia*) *ditaenionota* Prado, 1931. Synonym: *Uranotaenia burkii*
 175 Lane, 1936. (1♀).

Table 1. Information of New Records

New record	Country	Locality	Coordinates	Date	Collector	Habitat	Method of collecting	Institution code
1	Ecuador	Sucumbios/Shushufindi	0°10'55.07"S, 76°38'74.98"W	06 Mar. 2015	P. Ponce	Periurban	Human bait	ECU 9797
2	Ecuador	Sucumbios/Shushufindi	0°15'03.99"S, 76°36'47.70"W	20 July. 2015	P. Ponce	Periurban	Manual (immatures)	ECU 8136, ECU 8137
3	Ecuador	a) Zamora Chinchiipe/Yantzaza b) Morona Santiago/Sucua c) Napo/Puerto Misahuallí d) Sucumbios/Shushufindi	a) 03°49'50.98"S, 78°45'45.26"W b) 02°27'18.93"S, 78°09'32.05"W c) 1°1'56.97"S, 77°40'14.37"W d) 0°12'55.70"S, 76°38'37.70"W	a) 23 July. 2015 b) 18 Aug. 2015 c) 18 May. 2015 d) 17 July. 2015	P. Ponce P. Ponce P. Ponce P. Ponce	a) Secondary Forest b) Periurban c) Secondary Forest d) Secondary Forest	a) Manual (immatures) b) Manual (immatures) c) Manual (immatures) d) Manual (immatures)	a) ECU8123, ECU8124, ECU8130 b) ECU8538, ECU8539, ECU9900 c) ECU7297, ECU7298 d) ECU8134, ECU8135
4	Ecuador	Manabí/Rocafuerte	0°55'25.07"S, 80°28'9.14"W	24 July. 2014	P. Ponce	Urban	Manual (immatures)	ECU 10903
5	Ecuador	a) Sucumbios/Nueva Loja b) Sucumbios/Sushufindi c) Morona Santiago/Macas	a) 00°05'05"N, 76°52' 58"W b) 0°7'26.46"S, 76°39'2.61"W c) 2°19'28.34"S, 78°7'56.86"W	a) 26 May. 2015 b) 02 Mar. 2015 c) 17 Jan. 2017	P. Ponce P. Ponce P. Ponce	a) Urban b) Periurban c) Secondary Forest	a) Manual (immatures) b) Human bait c) Human bait	a) ECU7206 b) ECU9828 c) ECU3185
6	Ecuador	Sucumbios/Pacayacu	0°2'2.99"S, 76°35'30.72"W	22 July. 2014	P. Ponce	Primary Forest	Human bait	ECU 12276
7	Ecuador	Sucumbios/Sushufindi	00°11'32.64"S, 76°37'48.87"W	26 May. 2015	P. Ponce	Secondary Forest	Human bait	ECU 3227
8	Ecuador	Manabí/Pacocha	1°4'14.74"S, 80°53'26.99"W	12 Feb. 2016	P. Ponce	Secondary Forest	Manual (immatures)	ECU 12428, ECU 12429, ECU 12431, ECU 12432
9	Ecuador	Manabí/Pacocha	1°7'38.86"S, 80°50'35.48"W	11 Feb. 2016	P. Ponce	Secondary Forest	CDC Trap	ECU 10558
10	Ecuador	Sucumbios/Sushufindi	00°09'28.72" S, 76°38'53.05" W	23 July. 2010	P. Ponce	Periurban	Aspirator Prokopack	ECU 10696
11	Ecuador	Morona Santiago/Macas	02°20'17.30"S, 078°9'46.63"W	16 Feb. 2014	P. Ponce	Periurban	Manual (immatures)	ECU11574, ECU11586, ECU11590

12	Ecuador	a) Chimborazo/Cumandá b) Esmeraldas/Rio Verde c) Guayas/Progreso d) Los Ríos/Quevedo e) Manabí/Chone f) Manabí/Cantón Junín g) Santo Domingo de los Tsáchilas/Sueño de Bolívar	a) 2°12'18.09''S, 79°8'9.56''W b) 1°2'31.13''N, 79°22'59.48''W c) 2°24'57.86''S, 80°21'57.32''W d) 01°1'4.83''S, 079°27'32.71''W e) 0°41'17.70''S, 80°5'48.44''W f) 0°55'39.97''S, 80°12'20.99''W g) 0°13'16.00''S, 79°9'54.18''W	a) 26 Aug. 2014 b) 20 May. 2015 c) 20 May. 2015 d) 01 Jan. 2014 e) 14 May. 2014 f) 07 July. 2014 g) 22 Sept. 2015	P. Ponce P. Ponce P. Ponce P. Ponce P. Ponce P. Ponce P. Ponce	a) Periurban b) Periurban c) Periurban d) Periurban e) Urban f) Periurban g) Periurban	a) Manual (immatures) b) Manual (immatures) c) Manual (immatures) d) Manual (immatures) e) Manual (immatures) f) Manual (immatures) g) Manual (immatures)	a) ECU 6283 b) ECU 7244, ECU 8059 c) ECU 7154 d) ECU 6094 e) ECU 6121 f) ECU 6441 g) ECU 10100
13	Ecuador	Sucumbios/Sushufindi	0°12'57.03''S, 76°39'31.83''W	28 July. 2014	P. Ponce	Secondary Forest	Manual (immatures)	ECU 6609
14	Ecuador	a) Esmeraldas/Río Verde b) Sucumbios/Cuyabeno	a) 1°3'2.31''N, 79°25'13.67''W b) 0°13'3.41''S, 75°48'24.87''W	a) 31 July. 2015 b) 17 Apr. 2010	P. Ponce P. Ponce	a) Periurban b) Primary Forest	a) Manual (immatures) b) Aspirador Prokopack	a) ECU 8528 b) ECU 10720
15	Ecuador	a) Esmeraldas/San Lorenzo b) Esmeraldas/Vía El Alto c) Guayas/Progreso	a) 1°17'18.00''N, 78°50'13.00''W b) 1°2'16.30''N, 79°14'55.54''W c) 2°24'57.86''S, 80°21'57.32''W	a) 28 Oct. 2012 b) 31 Jul. 2015 c) 22 Apr. 2015	P. Ponce P. Ponce P. Ponce	a) Periurban b) Secondary Forest c) Periurban	a) Manual (immatures) b) Manual (immatures) c) Manual (immatures)	a) ECU3767 b) ECU 8531 c) ECU 7158
16	Ecuador	a) Sucumbios/Cuyabeno b) Sucumbios/Shushufindi	a) 0°13'4.53''S, 75°48'33.55''W b) 0°11'57.03''S, 76°37'31.83''W	a) 20 May. 2010 b) 21 Apr. 2015	P. Ponce P. Ponce	a) Secondary Forest b) Periurban	a) Aspirador Prokopack b) Aspirador Prokopack	a) ECU10716 b) ECU7093
17	Ecuador	Manabí/La Pila	1°6'43.28''S, 80°35'18.33''W	24 Oct. 2014	P. Ponce	Periurban	Manual (larvae)	ECU 11017
18	Ecuador	El Oro/Marcabellí	3°47'6.10''S, 79°54'44.37''W	12 Apr. 2013	P. Ponce	Periurban	Manual (larvae)	ECU 4911

177 Information of the 18 new records collected between 2010 and 2016. We show the collection locations, georeference, habitat and
178 collection method for each specie.

Figure 1. Geographical distribution of the new records in Ecuador. Each individual is represented with the New Records according to Table 1.

181 **Species of medical importance**

182 Subfamily Anophelinae Grassi, 1900.

183 The number of species of the genus *Anopheles* is the second largest in Ecuador. Out of the 472
184 formally recognized species of this subfamily (7, 25), 24 species (5%) have been recorded in
185 Ecuador. In comparison, Colombia has 48 species (26, 27), and Peru 43 (28).

186 In Ecuador, there are 17 species of *Anopheles* vectors and potential vectors for malaria out of the
187 34 species of *Anopheles* that are reported in the Americas (28-34). The species present in
188 Ecuador that have been reported as infected with the malaria parasites in the Americas are:
189 *Anopheles* (*Anopheles*) *calderoni* Wilkerson, 1991; *Anopheles* (*Anopheles*) *fluminensis* Root,
190 1927; *Anopheles* (*Anopheles*) *matogrossensis* Lutz & Neiva, 1911; *Anopheles* (*Anopheles*)
191 *neomaculipalpus* Curry, 1931; *Anopheles* (*Anopheles*) *pseudopunctipennis* Theobald, 1901;
192 *Anopheles* (*Anopheles*) *punctimacula* Dyar & Knab, 1906; *Anopheles* (*Kerteszia*) *lepidotus*
193 Zavortink, 1973; *Anopheles* (*Kerteszia*) *neivai* Howard, Dyar & Knab, 1913; *Anopheles*
194 (*Nyssorhynchus*) *albimanus* Wiedemann, 1820; *Anopheles* (*Nyssorhynchus*) *aquasalis* Curry,
195 1932; *Anopheles* (*Nyssorhynchus*) *darlingi* Root, 1926; *Anopheles* (*Nyssorhynchus*) *evansae*
196 Brèthes, 1926; *Anopheles* (*Nyssorhynchus*) *nuneztovari* s.l. Gabaldon, 1940; *Anopheles*
197 (*Nyssorhynchus*) *oswaldoi* (Peryassú, 1922); *Anopheles* (*Nyssorhynchus*) *rangeli* Gabaldón,
198 Cova García & Lopez, 1940; *Anopheles* (*Nyssorhynchus*) *triannulatus* (Neiva & Pinto, 1922);
199 *Anopheles* (*Nyssorhynchus*) *trinkae* Faran, 1979.

200 Subfamily Culicinae Meigen, 1818.

201 *Aedeomyia* (*Aedomyia*) *squamipennis* (Lynch Arribáizaga, 1878) is the only species of this genus
202 in Ecuador, and it has been recorded only on the west lowlands of the Andes (35, 36). This
203 species has been incriminated as carrier of 24 strains of virus related serologically to prototype
204 Gamboa in Ecuador (37, 38). This species has also been identified as vector of avian malaria (39)
205 (39).

206 There are 21 species of *Aedes* registered for Ecuador. *Aedes aegypti* (Linnaeus, 1762) has been
207 reported from continental eastern and western sides of the Andes, and the Galapagos Islands.
208 This species has been reported from localities of up to 1650 m over sea level. This species is
209 known for the dispersal of viruses including Chikungunya (CHKV), Dengue (DENV) and Zika
210 (ZIKV) among the human population (40). *Aedes aegypti* has also shown midgut infection by
211 Sindbis virus (41, 42). This species is also a suspected as vector of *Wuchereria bancrofti*
212 (Raghavan, 1961).

213 *Aedes albopictus* was recorded in Ecuador in late 2017 in Guayaquil and has already spread to
214 the Amazon basin and northwestern lowlands (6). This species has been incriminated as a vector
215 of several viruses Chikungunya (CHKV), Dengue (DENV), and as a potential vector of Zika
216 (ZIKV), Eastern equine encephalitis (EEEV), La Crosse (LACV), Venezuelan equine
217 encephalitis (VEEV), Japanese encephalitis (JEV), St. Louis encephalitis, West Nile (WNV), and
218 Yellow fever (YFV) , and as a vector of filarial parasites (43).

219 *Aedes taeniorhynchus* (Wiedemann, 1821) is vector of Venezuelan equine encephalitis virus
220 (VEEV) (44, 45). This species is considered a potential threat for the Galapagos Islands fauna as
221 a competent vector of West Nile virus (WNV) (46).

222 There are eleven species of *Haemagogus* mosquitoes reported for Ecuador. *Haemagogus*
223 *leucocelaenus* (Dyar & Shannon, 1924) is a vector of yellow fever virus (47, 48). *Haemagogus*
224 *anastasionis* Dyar, 1921 has been reported for Ecuador and it is a potential vector of yellow
225 fever and Mayaro virus (5).

226 Thirteen species of the genus *Psorophora* have been reported for Ecuador. *Psorophora ferox*
227 (Humboldt, 1819) has been reported as carrier of Ilheus virus (ILHV) in Central, South America
228 and Trinidad and Tobago. In Ecuador the virus isolate was obtained from a human, however, this
229 report needs to be confirmed due to cross-reactivity in serologic assays to other flaviviruses (49).

230 The genus *Culex* has 61 species in Ecuador, representing 8% of the world diversity. There are 14
231 species (19%) exclusively in the western lowlands of Ecuador, while 31 species (43%), of the
232 species are in the eastern lowlands, 13 species (18%) distributed on both sides of the Andean
233 mountains, and three species (4%) are in the highlands.

234 *Culex (Culex) quinquefasciatus* Say, 1823. This species is widely distributed on the west and east
235 of the Andean mountains of Ecuador, and has been introduced into the Galapagos Islands (15,
236 50). It is the most important species for transmitting filariasis and Oropouche virus (51), *Culex*
237 *quinquefasciatus* is an established species in the Galapagos Islands and it has been reported as
238 vector of avian malaria and avian pox virus. It is also a competent vector of the West Nile Virus
239 (50).

240 *Culex nigripalpus* Theobald, 1901. This mosquito has been reported as responsible of West Nile
241 Virus transmission to chickens (52).

242 *Culex iolambdis* Dyar, 1918 is a carrier of Venezuela encephalitis virus, however, it is unknown
243 if it is able to transmit it (53).

244 *Culex (Melanoconion) ocosa* Dyar & Knab, 1919 carries a flavivirus in Peru (54) and the
245 Venezuelan equine encephalitis virus complex (55).

246 The genus *Deinocerites*, is represented by one specie reported in Ecuador. *Deinocerites pseudos*
247 Dyar & Knab, 1909 apparently is a vector of Venezuelan and St. Louis equine encephalitis (56).

248 Tribe *Mansoniini*

249 Mosquitoes of the genus *Coquillettidia* have been reported as carriers of avian malaria parasites
250 (57) and several viruses including Eastern equine encephalomyelitis virus (EEE), West Nile
251 virus (WNV), Usutu virus (USUV), Tahyna virus (TAHV), Sindbis virus (SINV), Batai virus
252 (BATV) (58). *Coquillettidia albicosta* present in Ecuador was reported as carrier of *Rochambeau*
253 virus (RBUV) in French Guiana in 1973 (59).

The genus *Mansonia* Blanchard, 1901 is represented by three species reported in Ecuador. *Mansonia titillans* (Walker, 1948) is known to carry the virus of Venezuelan equine encephalitis (55) and it may also transport eggs of *Dermatobia hominis* (60-63).

The genus *Johnbelkinia* Zavortink, 1979 is represented by two species. *Johnbelkinia ulopus* has been mentioned as a potential vector of arbovirus (64, 65) and is known to carry eggs of *Dermatobia hominis* in Colombia (66).

There are three species of the genus *Limatus* Theobald, 1901. *Limatus durhami* and *Li. flavisetosus* have been reported carrying viruses (63).

There are 14 species of *Sabethes* reported for Ecuador. *Sabethes chloropterus* has been reported as vector of yellow fever (67) and other arboviruses like St. Louis encephalitis and Ilhéus (60, 63). *Sabethes amazonicus* has been indicated as a potential vector of yellow fever virus (5).

There are 14 species of the genus *Wyeomyia* Theobald, 1901 from Ecuador. There are reports of virus presence in species of this genus, however, it is not known their medical importance (60, 63).

Discussion

The updated mosquito species present in Ecuador, along with the specimens deposited in a National Reference Collection, will help to understand the diversity and the dynamics of several diseases transmitted by species of this group. Presently, the National Mosquito Reference Collection (CIREV) at INSPI - Quito holds 98 species with detailed collection data, out of the 200 reported for Ecuador. The list presented, most likely, is a partial inventory of the Ecuadorian mosquito fauna, considering that the country has one of the highest biodiversity in the region (68) and many ecosystems have not been fully surveyed. Additionally, the updated record of mosquito species in continental Ecuador is also relevant for the surveillance of invasive species in fragile ecosystems like the Galapagos Islands. Extensive collections are further needed and taxonomic and phylogenetic tools should be applied to establish the distribution, identity and disease incrimination of species complexes.

The number of mosquito species for Ecuador is significant considering the country size, for instance Brazil has 447 species of mosquitoes, while Mexico has about 225, Colombia 324 and Peru 129 species (27, 69). Foley et al. reported only 118 species, 23 endemic species and 34 types for Ecuador (69). The most recent list of Culicidae of Ecuador (4) reports 179 species for Ecuador. The number of mosquito species reported in this revision represents 6% of the Culicidae species. Out of the 200 species, 13 (6.5%) have Ecuador as the type locality. Mosquito taxonomy studies are still scarce in Ecuador and there are not published morphological identification keys available for local mosquito fauna. The taxonomic status of several species presents in Ecuador, in particular of the genus *Anopheles* that has several species complexes, needs to be revised along with their vector disease status. According to the World Health Organization *Anopheles albimanus*, *An. punctimacula* and *An. pseudopunctipennis* are the main

malaysia vectors in Ecuador (70). However, there are no reports of *Anopheles* species infected with the protozoan parasite in Ecuador.

Comprehensive data about the mosquito fauna and its distribution in Ecuador will help vector control officials to prevent the spread of diseases.

Conclusion

The updated list of Mosquitoes (Diptera: Culicidae) present in Ecuador, with the new records and georeferencing; provides information on group diversity, geographic distribution, and medical importance of some species. This is a guide for researchers and health personnel when studying biodiversity, fauna, insect vectors and strategies to prevent the spread of vector diseases.

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566 **Appendix 1:** List of valid culicid species reported for Ecuador. The sub-generic classification,
567 author, year of publication, localities where recorded and literature references for each species
568 are included. Species distribution in the East (E), West (W), highlands (H) and the Galápagos
569 Islands (G) with the collection reference numbers (ECU). NR indicates new record for Ecuador.
570 ** indicates endemic species. † indicates species with type locality in Ecuador.

571 - **Subfamily Anophelinae: 27 species**

1. <i>Anopheles (Anopheles) apicimacula</i> Dyar & Knab, 1906. Santo Domingo: Valle Hermoso, Reserva La Perla (00°05'10'' S, 079°16'21'' W) (17). INSPI collection - Pichincha, near Mindo ECU7024. (W).
2. <i>Anopheles (Anopheles) calderoni</i> Wilkerson, 1991. Guayas: Yaguachi, Hacienda Eulalia (02°07'9.8'' S, 079°41'22.9'' W). Santo Domingo: near Tinalandia (00°16'18'' S, 79°04'51'' W), Valle Hermoso, Reserva La Perla (00°05'10'' S, 79°16'21'' W) (71). INSPI collection - Guayas, Eloy Alfaro (Duran), Esmeraldas, San Lorenzo ECU13903. Napo: Tena, Ahuano, Jatun Sacha ECU3473; El Oro: Arenillas ECU10372; Santo Domingo de los Tsachilas: Santo Domingo ECU19704. (E, W).
3. <i>Anopheles (Anopheles) eiseni</i> Coquillett, 1902. Synonym: <i>Anopheles niveopalpis</i> Ludlow, 1919. Chimborazo, Azuay, Cañar, Loja, Imbabura, Pichincha (72). INSPI collection - Esmeraldas: Chuchubi ECU3773, Pastaza: Mariscal Sucre, ECU11012. (H, W).
4. <i>Anopheles (Anopheles) fluminensis</i> Root, 1927. Synonym: <i>Anopheles holmbergi</i> Pont & Heredia, 1945. Orellana: Yasuni National Park, Harpia 800 Tiputini Biodiversity Station (00°38'22.2'' S, 076°09'00.9'' W) (4). INSPI collection - Napo: Tena, Ahuano, Jatun Sacha ECU3474. (E).
5. <i>Anopheles (Anopheles) forattinii</i> Wilkerson & Sallum, 1999. Orellana: Yasuni National Park, Tiputini Biodiversity Station (00°38'22.2'' S, 076°09'00.9'' W) (4). (E).
6. <i>Anopheles (Anopheles) mattogrossensis</i> Lutz & Neiva, 1911. Synonym: <i>Anopheles amazonicus</i> Christophers, 1923. Orellana: Yasuni National Park (00°38'17.7'' S, 076°09'19'' W) (4, 73). (E).
7. <i>Anopheles (Anopheles) neomaculipalpus</i> Curry, 1931. INSPI collection - Pichincha, near Mindo ECU7023; Santo Domingo de los Tsachilas: Santo Domingo ECU8235. (W).

8. *Anopheles (Anopheles) pseudopunctipennis* Theobald, 1901. Synonyms: *Anopheles levicastilloi*; *Anopheles rivadeneirai*; *Anopheles (Anopheles) pseudopunctipennis ssp. pseudopunctipennis* Theobald, 1901. *Anopheles peruvianus* Tamayo, 1907; *Anopheles argentinus* Brethes, 1912; *Anopheles tucumanus* Lahille, 1912; *Anopheles bisignatus* Hoffmann, 1938; *Anopheles bifoliata* Osorno-Mesa & Munoz-Sarmiento, 1948; *Anopheles tucumanus* Lahille, 1912. Guayas: Chongon, km 18-19 Rt 3, near road shrine (02°11'32.7'' S, 80°02'24'' W); Esmeraldas: La Propicia (00°56'0.2''N, 079°39'28.6''W). Santa Elena: just S of Valdivia: San Pedro (01°56'54.4'' S, 080°43'56.9'' W). From sea level up to 2500 m (74). Loja, Pichincha, Imbabura, up to 1930 m (72). Imbabura: Cachaco (00°29'00.4'' N, 078°10'54.2'') (75). INSPI Collection - Manabí, Puerto Cayo ECU20423; Esmeraldas: Río Verde ECU7137; Guayas: Progreso ECU7137; Imbabura: Cachaco ECU3774; Loja: Sabanilla ECU6115. (H, W).

9. *Anopheles (Anopheles) punctimacula* Dyar & Knab, 1906. Synonyms: *Anopheles venezuelae* Evans, 1922; *Anopheles strigimacula* Dyar & Knab, 1906; *Anopheles malefactor* Dyar & Knab, 1907; *Anopheles apicimacula* Howard *et al.* (nec Dyar & Knab), 1917; *Anopheles venezuelae* Evans, 1922. Coastal-side foothills of the Andes, 147-1906 m (72). INSPI collection - El Oro: EL Retiro ECU19017; Sucumbíos: General Farfán ECU18675. (H, W).

10. *Anopheles (Kerteszia) bambusicolus* Komp, 1937. Napo, Pastaza, Santiago-Zamora (Cova-Garcia & Gabaldon 1952). Orellana: Tiputini River, 6 km from Tiputini Biodiversity Station (00°39'50'' S, 076°12'56'' W) (4). INSPI collection - Pichincha: Mindo ECU10392. (E, W).

11. *Anopheles (Kerteszia) lepidotus* Zavortink, 1973. Orellana: Yasuní National Park, Tiputini Biodiversity Station (0°38'17.00'' S, 76°8'42.00'' W) (4, 76). (E).

12. *Anopheles (Kerteszia) neivai* Howard, Dyar & Knab, 1913. Synonym: *Anopheles hylephilus* Dyar & Knab, 1917. Bolivar: Balzapamba (01°46'00.9'' S, 079°10'55.3'' W). Guayas: Guayaquil (02°08'19.5'' S, 079°55'00.6'' W). Los Rios: Montalvo (01°47'23.1'' S, 079°17'14.8'' W). Pichincha: Tandapi (00°24'56.3'' S, 078°47'53.7'' W) (64). Esmeraldas, Manabí. Guayas: Guayaquil, El Salado (02°10'43.6'' S, 79°54'15.2'' W). Santo Domingo: near Tinalandia (00°17'35'' S, 079°03'50'' W), Valle Hermoso (00°05'10'' S, 079°16'21'' W). Orellana: Tiputini River, 6 km from Tiputini Biodiversity Station (00°39'50'' S, 076°12'56'' W) (17). Imbabura: Lita (0°52'11.83''N, 78°27', 05.56''W), Cachaco (0°49'41.19''N, 78°24'03.55''W). Esmeraldas: Alto Tambo (0°55'49.00''N, 78°32'37.00''W) (75). INSPI collection – Sucumbíos: Nueva Loja ECU 18669, Pichincha: San Francisco de Pachijal, 750-900m. ECU3222; Pichincha: Mindo ECU10403; Esmeraldas: Chuchubí ECU8589; Zamora Chinchipe: Parque Nacional Podocarpus ECU11367. (E, W).

<p>13. <i>Anopheles (Lophopodomyia) squamifemur</i> Antunes, 1937. Orellana: Yasuni National Park, 3.5 km from Tiputini Biodiversity Station (00°38'18'' S, 76°10'55'' W) (4). INSPI collection - Sucumbíos: Nueva Loja ECU18602; Pichincha: Caoni ECU14931. (E, W)</p>
<p>14. <i>Anopheles (Nyssorhynchus) albimanus</i> Wiedemann, 1820. Synonyms: <i>Anopheles albipes</i> Theobald, 1901; <i>Anopheles bisignatus</i> Hoffmann, 1938; <i>Anopheles cubensis</i> Agramonte, 1900; <i>Anopheles gorgasi</i> Dyar & Knab, 1907; <i>Anopheles tarsimaculata</i> Goeldi, 1905; <i>Anopheles trisignatus</i> Hoffmann, 1938. Esmeraldas: near Las Palmas Port (00°59'20.6'' N; 79°38'54.8'' W), near Atacames (00°52'36'' N, 79°50'46.3'' W), Isla La Burrera (00°57'20.5'' N, 79°38'33.8'' W), road to Muisne (00°46'37'' N, 079°55'56'' W). Guayas: Chongon: km 24 Rt 3 Nr road to Chongon (02°13'10.5'' S, 080°05'05.8'' W), Guayaquil (02°12'05'' S, 079°53'46'' W), Milagro River (02°08'12'' S, 079°41'07.9'' W). Los Rios: Pichilingue (01°06'11.9'' S, 079°29'7.8'' W). Pichincha: Reserva La Perla, Valle Hermoso (00°05'43.7'' S, 079°18'06.3'' W) (16). Imbabura, Mira River valley (767 and 832 m) (00°32'32.5'' N, 078°02'34.6'' W), Pichincha: near La Hesperia Biological Station (1366 m) (00°21'00.1'' S, 078°51'13.2'' W). Azuay: near Girón, (1541 m) (03°09'35'' S, 079°08'49.3'' W) (72). Esmeraldas: Borbón, Muisne (Kroeger et al. 1995). Imbabura: Cachaco (0°49'41.19'' N, 78°24'03.55'' W) (75). INSPI collection - Imbabura: Limonal, 1000 m, ECU8587; Manabí: Rocafuerte, ECU6647; Guayas: Guayaquil ECU6377; Napo: Puerto Misahualli ECU7174. (E, W).</p>
<p>15. <i>Anopheles (Nyssorhynchus) aquasalis</i> Curry, 1932. Synonyms: <i>Anopheles delta</i> Anduze, 1948; <i>Anopheles deltaorinoquensis</i> Cova Garcia, Pulido & Amarista, 1977; <i>Anopheles emilianus</i> Komp, 1941; <i>Anopheles guarauno</i> Anduze, 1948; <i>Anopheles guarujaensis</i> Ramos, 1942. Guayas: Guayaquil Gulf (77). INSPI collection - Esmeraldas: San Lorenzo ECU18146; El Oro: Arenillas ECU10357. (W).</p>
<p>16. <i>Anopheles (Nyssorhynchus) argyritarsis</i> Robineau-Desvoidy, 1827. Synonym: <i>Anopheles rooti</i> Brethes, 1926. INSPI collection - Manabí: Machalilla ECU11663; Esmeraldas: Río Verde ECU8556. (W).</p>
<p>17. <i>Anopheles (Nyssorhynchus) darlingi</i> Root, 1926. Synonym: <i>Anopheles paulistensis</i> Galvao, Lane & Correa, 1937. Napo, Orellana and Pastaza (formerly Napo-Pastaza), Morona Santiago and Zamora Chinchipe (formerly Santiago-Zamora). INSPI collection - Sucumbíos: Shushufindi, 274 m, ECU9797. (NR, E).</p>
<p>18. <i>Anopheles (Nyssorhynchus) evansae</i> Brèthes, 1926. Synonym: <i>Anopheles noroestensis</i> Galvao & Lane, 1937. INSPI collection - Sucumbios: Shushufindi, Santa Mónica (0°15'0.60'' S, 76°36'48.08'' W) ECU8136, ECU8137. (NR, E).</p>

<p>19. <i>Anopheles (Nyssorhynchus) konderi</i> Galvão & Damasceno, 1942. Orellana: Yasuni National Park, Tiputini Biodiversity Station, lake (0°38'13.52''S, 76° 9'0.33''W), Harpía Trail 1500 m (0°37'32.30''S, 76° 8'52.03''W), small stream margin (0°38'8.96''S, 76° 9'4.96''W), Río Tiputini black water area, large stream leading to swampy area (0°38'18.00''S, 76°10'55.00''W), (0°38'13.51''S, 76° 9'0.33''W), Maquisapa trail (0°37'34.91''S, 76°10'12.13''W) (4). Orellana: Coca, Cañón de los Monos (0°20'36.28''S, 77° 0'25.23''W), Juan Montalvo (0°28'21.00''S, 76°59'29.04''W), Guamayacu (0° 7'48.00''N, 77°13'52.68''W), Tiputini (0°38'17.16''S, 76° 8'42.01''W) (78). (E).</p>
<p>20. <i>Anopheles (Nyssorhynchus) nuneztovari</i> Gabaldon, 1940. Synonym: <i>Anopheles goeldii</i> Rozeboom & Gabaldon, 1941. INSPI collection - Zamora Chinchipe: Yantzaza (78° 45' 45.26" W, 03° 49' 50.98" S) ECU8123, ECU8124, ECU8130; Morona Santiago: Sucúa (02° 27' 18.93" S, 78° 09' 32.05" W) ECU8538, ECU8539, ECU9900; Napo: Puerto Misahuallí (1°1'56.97''S, 77°40'14.37''W) ECU7297, ECU7298; Sucumbios: Shushufindi (0°12'55.70''S, 76°38'37.70''W) ECU8134, ECU8135. (NR, E).</p>
<p>21. <i>Anopheles (Nyssorhynchus) oswaldoi</i> (Peryassú, 1922). Synonyms: <i>Anopheles aquacaelestis</i> Curry, 1932; <i>Anopheles metcalfi</i> Galvao & Lane, 1937. Orellana: Yasuni National Park, near Tiputini Biodiversity Station (00°38'18'' S, 076°10'55'' W) (17). Pastaza: Mera (1233 m) (01°27'27.5'' S, 078°06'37.3'' W). Tungurahua: Río Verde (1230 m) (01°24'13.3'' S, 078°18'03.7'' W). Napo: Tena and Archidona (00°54'31.1'' S, 077°48'29.9'' W). Pastaza: Puyo (01°29'42.6'' S, 077°59'19.7'' W). Zamora Chinchipe: Zamora (04°03'43.9'' N, 078°56'53.7'' W) (72). INSPI collection - Napo: Tena, Jatun Sacha ECU3475; Morona Santiago: Río Blanco ECU7595. (E).</p>
<p>22. <i>Anopheles (Nyssorhynchus) rangeli</i> Gabaldón, Cova García & Lopez, 1940. Morona Santiago: Sucua. Sucumbios (formerly Napo): Limoncocha (00°24'01.4'' S, 076°38'01.5'' W). Napo: Tena. Pastaza: Puyo (79). Morona Santiago: Sucua (02°28'12'' S, 078°10'07.7'' W). Napo: 1.5 Km S from Tena (01°01'14'' S, 077°49'01.5'' W). Pastaza: Puyo (01°28'01.4'' S, 077°59'01.5'' W), 4 Km N from Puyo (01°28'01.4'' S, 077°58'01.5'' W) (17). Lower-Napo región. Morona Santiago, Napo, Pastaza (80) Napo: Coca (0°28'S, 76°58''W) (81). INSPI collection – Santo Domingo de los Tsáchilas: Santo Domingo ECU19705; Sucumbíos: Shushufindi ECU14943; Zamora Chinchipe: Yantzaza ECU10084. (E, W).</p>
<p>23. <i>Anopheles (Nyssorhynchus) triannulatus</i> (Neiva & Pinto, 1922). Synonyms: <i>Anopheles bachmanni</i> Petrocchi, 1925; <i>Anopheles chagasi</i> Galvao, 1941; <i>Anopheles cuyabensis</i> Neiva & Pinto, 1923. Orellana (formerly Napo): Limoncocha (00°24'01.4'' S, 076°38'01.5'' W); Napo: Tena (00°59'48'' S, 077°48'49.3'' W). Pastaza: Puyo (79). Morona Santiago: Sucua (02°27'27.2'' S, 078°10'15.1'' W). Pastaza: Puyo (01°28'01.4'' S, 077°59'01.5'' W) (17). INSPI collection - Morona Santiago: Sucúa ECU9857. (E).</p>

24. *Anopheles (Nyssorhynchus) trinkae* Faran, 1979†. Type locality: Pastaza: Puyo (Faran 1979). Napo: Tena (00°59'48'' S, 077°48'49.3'' W). Pastaza: Puyo (01°28'01.4'' S, 077°59'01.5'' W) (79). Pastaza: Puyo Napo: Sardina Yaku (00°05' S, 077°05'W). Orellana (formerly Napo): Coca (00°27'49'' S, 076°58'18.8'' W). Sucumbios: Lago Agrio, (00°05'1.7'' N, 076°53'0.1'' W) (82). Napo: Sardina Yacu (0°5'S, 77°5'W) (81). Pastaza: Puyo (1°28'1.03''S, 77°59'0.18''W), Napo: Tena (1°10'1.45''S, 77°53'1.50''W) (17). INSPI collection - Zamora Chinchipe: Yantzaza ECU 10089; Morona Santiago: Sucúa ECU9913; Morona Santiago: Río Blanco ECU7508; Napo: Puerto Misahualli ECU7299. (E).

25. *Chagasia bathana* (Dyar, 1928). Santo Domingo de los Tsachilas: Santo Domingo (00°15'19.7'' S, 079°10'48'4'' W) (83). Orellana: Tiputini Biodiversity Station (00°38'15.5'' S, 076°09'59.3'' W) (84). (E, W).

26. *Chagasia bonneae* Root, 1927. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River (00°28'12'' S, 076°58'07.5'' W). Santo Domingo de los Tsachilas: Reserva La Perla (00°01'53'' S, 79°24'04'' W) (16). Orellana: Yasuni National Park: 3.5 km from Tiputini Biodiversity Station, Rio Tiputini, Blackwater area (00°38'18'' S, 76°10'55'' W) (4). Orellana (formerly Napo) Coca; Napo: Tena; Pastaza: Santa Ana (83). (E, W).

27. *Chagasia fajardi* (Lutz, 1904). Synonyms: *Chagasia maculata* Peryassu, 1921; *Chagasia neivae* Cruz, 1906; *Chagasia stigmopteryx* Martini, 1932; *Pyretophorus fajardi* Lutz, 1904. Orellana: Yasuni National Park: Harpia 350 Tiputini Biodiversity Station (00°37'50.2'' S, 076°08'43.4'' W) (4). (E).

572

573 - **Subfamily Culicinae. Tribe Aedeomyiini: 1 specie**

574 28. *Aedeomyia (Aedomyia) squamipennis* (Lynch Arribáizaga, 1878). Synonym: *Aedes*
575 *squamipennis* Lynch Arribáizaga, 1878. Los Ríos, Babahoyo (37). (W).
576

577

578 - **Subfamily Culicinae. Tribe Aedini; 44 species**

29. *Aedes (Howardina) brevivittatus* Berlin, 1969**†. Type locality Azuay: Surucucho (= Zorrocucho), E of Giron, Cerro Tinajillas (03°11'12'' S, 079°02'07.8'' W). Santo Domingo de los Tsachilas: 50 km SE from Tandapi (00°23'11.9'' S, 078°46'07.7'' W) (85). INSPI collection - Pichincha: Nanegalito, ECU 3258. (W).

30. <i>Aedes (Howardina) ecuadoriensis</i> Berlin, 1970**†. Type locality Azuay: Saraguro, 2500 m; 10 km N from Oña, Rio Leon en el km 99 de la via Cuenca-Loja (03°24'48.6'' S, 079°09'24.3'' W). (Imbabura: Ibarra, Taguando River, elev. 5400-5800 ft, 9 June 1965, L.E. Pena G (85). (H).
31. <i>Aedes (Howardina) fulvithorax</i> (Lutz, 1904). Synonyms: <i>Aedes tachirensis</i> Anduze, 1947; <i>Haemagogus fulvithorax</i> Lutz, 1904; <i>Taeniorhynchus palliatus</i> Coquillett, 1906. Pichincha Province, Quito D.M., Pululahua Geobotanical Reserve, Pululahua Volcano. Altitude: 2,101 m; Coordinates 00° 03'28.9'' N; 78° 30'29.1'' W (86). (H).
32. <i>Aedes (Howardina) sexlineatus</i> (Theobald, 1901). Synonyms: <i>Stegomyia dominicii</i> Rangel & Romero Sierra, 1907; <i>Stegomyia sexlineatus</i> Theobald, 1901. Napo, Reserva Biológica Colonso-Chalupas, 1,230 m, Coord: 00° 56' 25.2" S - 77° 54' 00" W (86). INSPI collection - Pichincha: Quito, Nanegalito ECU3260; Pichincha: Quito ECU16510; Manabí: San Lorenzo ECU10666; Orellana: Loreto, Rio Bigal) ECU8594; Loja: Alamor ECU19111. (H, E, W).
33. <i>Aedes (Ochlerotatus) albifasciatus</i> (Macquart, 1838). Synonyms: <i>Aedes colonarius</i> Dyar, 1924, <i>Culex albifasciatus</i> Macquart, 1838, <i>Culex annuliferus</i> Blanchard, 1852, <i>Culex flavipes</i> Macquart, 1838. Manabí: Rocafuerte, El Ceibal (0°55'25.07''S, 80°28'9.14''W) ECU10903. (NR, W).
34. <i>Aedes (Ochlerotatus) angustivittatus</i> Dyar & Knab, 1907. Synonyms: <i>Aedes argentescens</i> Dyar & Knab, 1908, <i>Aedes cuneatus</i> Dyar & Knab, 1908, <i>Aedes traversus</i> Dyar, 1925. Los Rios: about 30 km SW of Quevedo, 3 km S of El Empalme, 100 m (01°06'12'' S, 079°41'07.9'' W). Los Rios: Quevedo, Valencia (00°57'07.7'' S, 079°21'05.9'' W), Guayas: Samborondon, La Bocana estuary, road upstream from town (01°57'12'' S, 079°44'7.9'' W); outskirts of Los Ceibos (02°09'54.8'' S, 79°55'55.6'' W) (16). Babahoyo, Aug 1938, F. Campos (USNM); Balzapamba Aug 1938, F. Campos, (USNM), 6 9 (KO 209A-21). Guayaquil, J. Murdock, (USNM) (85). INSPI collection – Sucumbíos: Shushufindi ECU9827; Guayas: Guayaquil ECU7400. (E, W).
35. <i>Aedes (Ochlerotatus) fluviatilis</i> (Lutz, 1904). Synonyms: <i>Aedes draconarius</i> Dyar, 1922; <i>Aedes lithoecetor</i> Dyar & Knab, 1907; <i>Culex fluviatilis</i> Lutz, 1904; <i>Danielsia mediomaculata</i> Theobald, 1907; <i>Danielsia tripunctata</i> Theobald, 1907. Zamora Chinchipe: (10 km E) W of Zamora River (04°04'12'' S, 078°58'07.8'' W) (16). Pastaza: 31 km W of Puyo (01°28'01.4'' S, 078°16'01.5'' W), Zamora (17). INSPI collection – El Oro: Piñas ECU 11366; Santo Domingo de los Tsáchilas: Santo Domingo ECU 11364. (E, W).
36. <i>Aedes (Ochlerotatus) fulvus</i> (Wiedemann, 1828). Synonyms: <i>Culex flavicosta</i> Walker, 1856; <i>Culex fulvus</i> Wiedemann, 1828. Guayaquil and its surroundings (9, 87). Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (00°26'12'' S, 076°37'07.5''

W); Coca, confluence of Coca River and Napo River (00°28'12'' S, 076°58'07.5'' W) (16). INSPI collection - Sucumbios: Nueva Loja ECU3192, Shushufindi ECU7142. (E).
37. <i>Aedes (Ochlerotatus) hastatus</i> Dyar, 1922. Sucumbios (formerly Napo): Cuyabeno 50 km W of Tarapoa, Topography Camp, Aguas Negras (16). (E).
38. <i>Aedes (Ochlerotatus) hortator</i> Ficalbi, 1889. Orellana: Coca, confluence of Coca River and Napo River (00°28'12'' S, 076°58'07.5'' W) (16). INSPI collection – Esmeraldas: Río Verde ECU7506. (E, W).
39. <i>Aedes (Ochlerotatus) meprai</i> Martinez & Prosen, 1953. Loja: about 20 km S of Loja, (04°18'01.4'' S, 079°18'01.5'' W) 7 F UCLA. (16, 88). (H).
40. <i>Aedes (Ochlerotatus) milleri</i> Dyar, 1922. Synonyms: <i>Aedes araozi</i> Shannon & Ponte, 1927; <i>Aedes oroecetor</i> Martini, 1931. INSPI collection – Pichincha: Sangolqui (00° 21' 32.43" S, 78° 25' 29.33" W), ECU10041, ECU16263. (H).
41. <i>Aedes (Ochlerotatus) nubilus</i> Theobald, 1903. Synonyms: <i>Aedes polyagrus</i> Dyar, 1949; <i>Culex nubilus</i> Theobald, 1903. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16). (E).
42. <i>Aedes (Ochlerotatus) scapularis</i> (Rondani, 1848). Synonym: <i>Aedes camposanus</i> Dyar, 1918; <i>Aedes hemisurus</i> Dyar & Knab, 1906; <i>Culex scapularis</i> Rondani, 1848; <i>Ochlerotatus confirmatus</i> Lynch Arribalzaga, 1891. Los Rios: Babahoyo (01°48'10.1'' S, 079°31'51.6'' W). Manabí: Manta (00°57'11.8'' S, 080°43'57.3'' W) (88). Esmeraldas: Island near Las Palmas Port (00°56'55'' N, 79°38'33'' W). Guayas: Guayaquil, El Salado estuary, N of Universidad Católica (02°10'43.6'' S, 079°54'15.2'' W), Guayas: Guayaquil, just S of Pascuales, Rt. 2 Km 9.5 (02°05'01.7'' S, 079°56'28.2'' W). Guayas: Guayaquil, approximately 5 km S Escuela Guayas – Salado (02°16'25.5'' S, 079°53'13.5'' W). Guayas: Samborondon, La Bocana estuary, road upstream from town (01°57'12'' S, 079°44'7.9'' W). Guayas: Guayaquil, 5 km N of Mapasingue. Guayas: Guayaquil, swamp N of airport (02°08'49.5'' S, 079°53'13.8'' W) (16). INSPI collection – Zamora Chinchipe: Zamora, Copalinga; Sucumbíos: Shushufindi ECU 19618; Guayas: Guayaquil ECU 18872; El Oro: Machala ECU17814. (E, W).
43. <i>Aedes (Ochlerotatus) serratus</i> (Theobald, 1901). Synonyms: <i>Aedes meridionalis</i> Dyar & Knab, 1906; <i>Culex mathisi</i> Neveu-Lemaire, 1902; <i>Culex serratus</i> Theobald, 1901. Orellana: Yasuni National Park: Guacamayo 2300 (00°38'02.4'' S, 076°09'49.9'' W). Orellana: Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W). Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (00°26'12'' S, 076°37'07.5'' W) (16, 17). Orellana: Tiputini Biodiversity Station, Guacamayo Trail 2300m (0°38'2.42'' S,

76°9'49.87''W) (4). INSPI collection – Sucumbíos: Shushufindi ECU19595; Manabí: Manta ECU10621. (E, W).
44. <i>Aedes (Ochlerotatus) taeniorhynchus</i> (Wiedemann, 1821). Synonyms: <i>Aedes epinolus</i> Dyar & Knab, 1914; <i>Aedes niger</i> Giles, 1904; <i>Aedes pix</i> Martini, 1935; <i>Culex damnosus</i> Say, 1823; <i>Culex portoricensis</i> Ludlow, 1905; <i>Culex taeniorhynchus</i> Wiedemann, 1821. Guayas: Guayaquil, Durán, Posorja (9, 87). Guayas: Guayaquil, about 5 Km of, road to Esclusa Guayas-Salado, 2.3 Km E of road to Puerto Nuevo; 10 Km W of Rt. 3; 10 Km W of on Rt. 3; NW outskirts of, Los Ceibos; Estero Salado just NW of Catholic University (16, 17). Guayas: Guayaquil, three specimens caught in a plane flying from Guayaquil to Baltra, Galapagos (89). Playas: 0.5 Km north of Playas (2°37'36.66''S, 80°23'25.84''W), 7 Km SE of Playas on road to Posorja (2°40'52.00''S, 80°21'16.20''W) (17). Galapagos: Santa Cruz, Baltra, San Cristobal, Fernandina, Floreana, Isabela, Santiago, Española, Santa Fe (46, 50, 89-93) INSPI collection – Guayas: Guayaquil ECU18888; El Oro: Machala ECU17224; Galápagos: San Cristobal ECU 12903; Isabela ECU 12580. (W, G).
45. <i>Aedes (Protomacleaya) argyrothorax</i> Bonne-Wepster & Bonne, 1920. Orellana: Yasuni National Park, Tiputini Biodiversity Station (00°38'13.5'' S, 076°09'0.3'' W) (4, 17). INSPI collection – Sucumbíos: Shushufindi ECU11005. Manabí: Rocafuerte ECU10977. (E).
46. <i>Aedes (Protomacleaya) metoecopus</i> Dyar, 1925**†. Synonym: <i>Aedes terreus metoecopus</i> Levi Castillo, 1953. Guayas: Guayaquil, just S of Pascuales, Rt. 2 Km 9.5 (02°05'01.7'' S, 079°56'28.2'' W). Guayas: Chongon W of Guayaquil. Los Rios: Quevedo, 1 km E from Valencia (00°56'46.9'' S, 079°20'10.5'' W). Los Rios: about 30 km SW of Quevedo, 3 km S of El Empalme, 100 m (01°06'12'' S, 079°41'07.9'' W). Los Rios: Montalvo, 30 K E of Babahoyo: Hacienda Mora, across river at end of main path of Montalvo (01°49'12'' S, 079°31'07.8'' W) (94). (W).
47. <i>Aedes (Protomacleaya) terreus</i> gr. (Walker, 1856). Synonyms: <i>Aedes apollo</i> Schick, 1970; <i>Culex terreus</i> Walker, 1856; <i>Gualteria oswaldi</i> Lutz, 1904. Guayas: Bucay, Santa Elena: Atahualpa, about 15 km SE of Chanduy (02°24'35.4'' S, 080°41'14.7'' W) (16). Carchi: El Baboso (0°53'47.05''N, 78°26'34.98''W) (75). INSPI collection – Manabí: Pacoche ECU10551. (W).
48. <i>Aedes (Stegomyia) aegypti</i> (Linnaeus, 1762). Synonyms: <i>Culex aegypti</i> Linnaeus, 1762; <i>Culex albopalposus</i> Becker, 1908; <i>Culex anguste-alatus</i> Becker, 1908; <i>Culex annulitarsis</i> Macquart, 1844; <i>Culex argenteus</i> Poiret, 1787; <i>Culex augens</i> Wiedemann, 1828; <i>Culex bancrofti</i> Skuse, 1889; <i>Culex calopus</i> Meigen, 1818; <i>Culex elegans</i> Ficalbi, 1889; <i>Culex exagitans</i> Walker, 1856; <i>Culex excitans</i> Walker, 1848; <i>Culex fasciatus</i> Fabricius, 1805; <i>Culex frater</i> Robineau-Desvoidy, 1827; <i>Culex inexorabilis</i> Walker, 1848; <i>Culex insatiabilis</i> Bigot, 1859; <i>Culex kououpi</i> Brulle, 1833; <i>Culex mosquito</i> Robineau-Desvoidy, 1827; <i>Culex rossii</i> Giles, 1889; <i>Culex taeniatatus</i> Wiedemann, 1828; <i>Culex toxorhynchus</i> Macquart, 1838; <i>Culex viridifrons</i> Walker, 1848; <i>Duttonia alboannulis</i> Ludlow, 1911; <i>Mimeteomyia pulcherrima</i>

<p>Taylor, 1919; <i>Stegomyia atritarsis</i> Edwards, 1920; <i>Stegomyia canariensis</i> Pittaluga, 1905; <i>Stegomyia luciensis</i> Theobald, 1901; <i>Stegomyia nigeria</i> Theobald, 1901; <i>Stegomyia queenslandensis</i> Theobald, 1901. INSPI collection - widely spread all the country, up to 1650 m, ECU20713, ECU20767. (H, E, W, G).</p>
<p>49. <i>Aedes (Stegomyia) albopictus</i> (Skuse, 1894). Synonyms: <i>Stegomyia nigritia</i> Ludlow, 1910; <i>Stegomyia quasinigritia</i> Ludlow, 1911; <i>Stegomyia samarensis</i> Ludlow, 1903. INSPI collection - Guayas: Guayaquil ECU20101 (6); Sucumbíos: Shushufindi ECU19611; Imbabura: Cachaco ECU21370. (E, W).</p>
<p>50. <i>Haemagogus (Conopostegus) leucotaeniatus</i> (Komp, 1938). Synonym: <i>Aedes leucotaeniatus</i> Komp, 1938. INSPI collection - Morona Santiago: Parroquia Macuma, Wisui Research Station, ECU3520. (E).</p>
<p>51. <i>Haemagogus (Haemagogus) acutisentis</i>. Arnell, 1973**†. Guayas: Guayaquil: km 14 Highway 3 About 1 km beyond checkpoint (02°11'01'' S, 080°00'14.5'' W). Guayas: Guayaquil, just S of Pascuales, Rt. 2 Km 9.5 (02°05'01.7'' S, 079°56'28.2'' W). Los Rios: Quevedo: 4 km W of Valencia. Los Rios: Montalvo, 30 K E of Babahoyo: Hacienda Mora, across river at end of main path of Montalvo (01°49'12'' S, 079°31'07.8'' W). Los Rios: Quevedo, 1 km E from Valencia; Banana and Cocoa Grove. (00°56'46.9'' S, 079°20'10.5'' W) (16, 88). (W).</p>
<p>52. <i>Haemagogus (Haemagogus) anastasionis</i> Dyar, 1921. Synonym: <i>Haemagogus dominguezi</i> Duret, 1971. Zamora Chinchipe: Copalinga (04°05'26'' S, 078°57'28.8'' W). INSPI collection – Esmeraldas: Río Verde ECU19650. Sucumbíos: Nueva Loja ECU 18575. Manabí: Montecristi ECU11423. Zamora Chinchipe: Copalinga ECU6101. (E, W).</p>
<p>53. <i>Haemagogus (Haemagogus) boshelli</i>. Osorno-Mesa, 1944. Synonym: <i>Haemagogus garciai</i> Levi-Castillo, 1955. Isla de Changuaral, Esmeraldas (01°22'52.3'' N, 078°52'02.1'' W) (16). (W).</p>
<p>54. <i>Haemagogus (Haemagogus) chalcospilans</i> Dyar, 1921. Guayas: Guayaquil, km 10 on Rt 3 from Guayaquil. Patch of bamboo, back of a farm (02°11'32.6'' S, 079°58'05'' W). Cañar: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4'' S, 079°17'50.6'' W) Isla de Changuaral, Bahia de Ancon de Sardinas; Esmeraldas, Ecuador (described as <i>Haemagogus (Osomomys) garciai</i> (17, 95). (W).</p>
<p>55. <i>Haemagogus (Haemagogus) equinus</i> (Theobald, 1903). Synonyms: <i>Aedes affirmatus</i> Dyar & Knab, 1906, <i>Aedes philosophicus</i> Dyar & Knab, 1906. Guayas: El Salado (87). INSPI collection - Manabí: Ayampe ECU13549; Chimborazo: Cumandá ECU20080. (W).</p>

<p>56. <i>Haemagogus (Haemagogus) janthinomys</i> Dyar, 1921. Synonyms: <i>Haemagogus falco</i> Kumm & Osorno-Mesa, 1946; <i>Haemagogus obscurus</i> Martini, 1931; <i>Haemagogus petrocchiae</i> Martinez & Carcavallo, 1961. Orellana: Coca, confluence of Coca River and Napo River, 250 m (00°28'12" S, 076°58'07.5" W). Orellana: Yasuni National Park: near Lago Tiputini Biodiversity Station (00°38'08.2" S, 076°09'53.5" W) (4). INSPI collection – Napo: Tena ECU10796. (E).</p>
<p>57. <i>Haemagogus (Haemagogus) lucifer</i> (Howard, Dyar & Knab, 1913). Synonym: <i>Stegoconops lucifer</i> Howard, Dyar & Knab, 1912. Napo: Ila (formerly Napo-Pastaza) (Levi-Castillo, specimen at USNM) (96). (E).</p>
<p>58. <i>Haemagogus (Haemagogus) panarchys</i> Dyar, 1921**†. Guayas: Guayaquil, km 14 Highway 3 about 1 km beyond checkpoint (02°11'01" S, 080°00'14.5" W); Guayas: Guayaquil, just S of Pascuales, Rt. 2 Km 9.5 (02°05'01.7" S, 079°56'28.2" W). Los Rios: Quevedo, 4 km W of Valencia (00°57'56.7" S, 079°25'14.5" W). Santa Elena: Chanduy, about 15 km SE of Atahualpa (02°24'35.4" S, 080°41'14.7" W) (16, 96). (W).</p>
<p>59. <i>Haemagogus (Haemagogus) soperi</i> Leví-Castillo, 1955**†. Los Ríos: Juan Montalvo (92). Cañar: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4" S, 079°17'50.6" W). Los Rios: Montalvo, 30 Km E of Babahoyo: Hacienda Mora, across river at end of main path of Montalvo (01°49'12" S, 079°31'07.8" W) Los Rios: about 30 km SW of Quevedo, 3 km S of El Empalme, 100 m (01°06'12" S, 079°41'07.9" W). Los Rios: Quevedo, 1 km E from Valencia. (00°56'46.9" S, 079°20'10.5" W) (16, 96). (W).</p>
<p>60. <i>Haemagogus (Haemagogus) spegazzinii</i> Brethés, 1912. Synonyms: <i>Haemagogus lindneri</i> Martini, 1931; <i>Haemagogus uriartei</i> Shannon & Ponte, 1927. No specific locality data: R. Levi-Castillo, (specimen at USNM) (96). (E).</p>
<p>61. <i>Psorophora (Grabhamia) cingulata</i> Fabricius, 1805. Synonyms: <i>Aedes garciai</i> Levi-Castillo, 1953; <i>Culex apicalis</i> Theobald, 1903; <i>Culex cingulatus</i> Fabricius, 1805; <i>Janthinosoma indoctum</i> Dyar & Knab, 1906; <i>Psorophora neoapicalis</i> Theobald, 1910. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Tower: Shannon trap (0°39'52.99" S, 76°12'54.00" W) (4). Orellana: Coca, confluence of Coca River and Napo River, 250 m (00°28'12" S, 076°58'07.5" W). Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (00°26'12" S, 076°37'07.5" W). Orellana (formerly Napo): Yasuni National Park, Tower Tiputini Biodiversity Station (00°38'17" S, 076°08'42" W) (4). INSPI collection - Sucumbíos: Nueva Loja ECU20510. Imbabura: Lita, Chuchubi ECU10698. (E, W).</p>

62. *Psorophora (Grabhamia) confinnis* (Lynch Arribalzaga, 1891). Synonyms: *Culex scutipunctatus* Lutz & Neiva, 1911; *Psorophora chiquitana* Pinto, 1932; *Psorophora funiculus* Dyar, 1920; *Taeniorhynchus confinnis* Lynch Arribalzaga, 1891; *Taeniorhynchus trigonophorus* Lutz, 1928. Imbabura: Lita (0°52'11.83"N, 78°27', 05.56"W), Cachaco (0°49'41.19"N, 78°24'03.55"W) (75). INSPI collection - Esmeraldas: Alto Tambo ECU3771. (W).

63. *Psorophora (Grabhamia) dimidiata* Cerqueira, 1943. Sucumbios: Nueva Loja (00°05'05" N, 076°52'58" W). INSPI collection - Morona Santiago: Macas (2°19'28.34"S, 78°7'56.86"W) ECU7206. Sucumbíos: Nueva Loja (0°5'20.00"S, 76°52'9.00"W) ECU3185. Sucumbíos: Shushufindi (0°7'26.46"S, 76°39'2.61"W) ECU9828. (NR, E).

64. *Psorophora (Janthinosoma) albigena* Peryassu, 1908. Synonyms: *Janthinosoma albigena* Peryassu, 1908; *Janthinosoma paraguayensis* Strickland, 1911; *Psorophora bruchi* Petrocchi, 1927. Orellana (formerly Napo): Yasuni National Park, Tiputini Biodiversity Station, Tower: Shannon Trap (00°38'17" S, 076°08'42" W); Guacamayo Trail 2300 m (0°38'2.42"S, 76°9'49.87"W) (4). (E).

65. *Psorophora (Janthinosoma) albipes* (Theobald, 1907). Synonym; *Janthinosoma albipes* Theobald, 1907. Sucumbios (formerly Napo): Cuyabeno 50 km W of Tarapoa, Topography Camp, Aguas Negras. Orellana: Coca, confluence of Coca River and Napo River, 250 m (00°28'12" S, 076°58'07.5" W) (16). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Main camp (0°38'13.51"S, 76°09'0.32"W) (4). Imbabura: Lita (0°52'11.83"N, 78°27', 05.56"W), Cachaco (0°49'41.19"N, 78°24'03.55"W), Esmeraldas: San Francisco de Bogotá (01°09'21.98"N, 78°40'17.98"W) (75). INSPI collection – Sucumbíos: Shushufindi ECU19592. (E, W).

66. *Psorophora (Janthinosoma) ferox* (Humboldt, 1819) †. Synonyms: *Aedes pazosi* Pazos, 1908; *Culex ferox* Humboldt, 1819; *Culex posticus* Wiedemann, 1821; *Janthinosoma centrale* Brethes, 1910; *Janthinosoma echinata* Grabham, 1906; *Janthinosoma jamaicensis* Theobald, 1907; *Janthinosoma terminalis* Coquillett, 1906; *Janthinosoma vanhalli* Dyar & Knab, 1906; *Psorophora centrale* Brethes; *Psorophora coquillettii* Theobald; *Psorophora echinata* Grabham; *Psorophora jamaicensis* Theobald; *Psorophora musicus* Say; *Psorophora posticus* Wiedemann; *Psorophora sayi* Dyar and Knab; *Psorophora sayi* Theobald; *Psorophora terminalis* Coquillett; *Psorophora vanhalli* Dyar and Knab. Guayas: flooded Guayaquil River valley near Samborondon (92), La Bocana estuary, road upstream from town (01°57'12" S, 079°44'7.9" W). Los Rios: about 30 km SW of Quevedo, 3 km S of El Empalme, 100 m (01°06'12" S, 079°41'07.9" W). Esmeraldas, Napo-Pastaza. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250m (00°28'12" S, 076°58'07.5" W) (16). INSPI collection - Pastaza, Puyo ECU2955; Sucumbíos: Shushufindi ECU19593. (E, W).

67. *Psorophora (Janthinosoma) lanei* Shannon & Cerqueira, 1943. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). Orellana (formerly Napo): Yasuni National Park, Tiputini Biodiversity Station, Tower: Shannon Trap (00°38'17'' S, 076°08'42'' W) (4). (E).

68. *Psorophora (Janthinosoma) lutzii* (Theobald, 1901). Synonyms: *Janthinosoma lutzii* Theobald, 1901; *Psorophora chaquensis* Paterson & Shannon, 1927. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (00°26'12'' S, 076°37'07.5'' W). Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). (E).

69. *Psorophora (Psorophora) ciliata* Fabricius, 1794. *Culex ciliata* Fabricius, 1794. Synonyms: *Culex cyanopennis* Humboldt, 1819; *Culex molestus* Wiedemann, 1820; *Culex rubidus* Robineau-Desvoidy, 1827; *Culex tibialis* Robineau-Desvoidy, 1827; *Psorophora boscii* Robineau-Desvoidy, 1827; *Psorophora ctites* Dyar, 1918; *Psorophora lynchi* Brethes, 1916. Orellana: Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (17). INSPI collection – Sucumbíos: Shushufindi. ECU10703; Manabí: Pacoche ECU10665. (E, W).

70. *Psorophora (Psorophora) cilipes* (Fabricius, 1805). Synonyms: *Culex cilipes* Fabricius, 1805; *Psorophora iracunda* Dyar & Knab, 1906; *Sabethes scintillans* Walker, 1848. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16). INSPI collection - Napo: Tena, Jatún Sacha Station ECU3512; Sucumbíos: Shushufindi ECU19509. (E).

71. *Psorophora (Psorophora) lineata* (Humboldt, 1819). Synonym: *Psorophora blanchardi* Surcouf and Gonzalez-Rincones. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16). (E).

72. *Psorophora (Psorophora) holmbergii* Lynch Arribalzaga, 1891. Synonym: *Psorophora agoggyia* Dyar, 1922. INSPI collection - Sucumbíos: Pacayacu (0°2'2.99''S, 76°35'30.72''W) ECU12276. (NR, E).

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73. *Culex (Aedinus) accelerans* Root, 1927. Synonym: *Culex paraplesia* Dyar, 1922. Sucumbios: Shushufindi (00° 11' 32.64" S, 76° 37' 48.87" W) ECU3227. (NR, E).

<p>74. <i>Culex (Aedinus) amazonensis</i> (Lutz, 1905). Synonyms: <i>Aedinus amazonensis</i> Lutz, 1905; <i>Culex hildebrandi</i> Evans, 1923; <i>Eubonnea tapena</i> Dyar, 1919. Orellana (formerly Napo): Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (00°26'12'' S, 076°37'07.5'' W) (16). Los Rios: Babahoyo (01°48'10.1'' S, 079°31'51.6'' W) (Levi-Castillo, specimen at USNM). Sucumbios (formerly Napo): Cuyabeno, Tarapoa, 300 m (00°07'21.2'' S, 076°20'45.9'' W) (16). (E, W).</p>
<p>75. <i>Culex (Anoediopora) bamborum</i> Rozeboom & Komp, 1948. Orellana: Yasuni National Park: near Río Tiputini (c. 8 km from Tiputini Biodiversity Station) (00°39'53'' S, 076°12'54'' W) (4). (E).</p>
<p>76. <i>Culex (Anoediopora) browni</i> Komp, 1936. Sucumbios (formerly Napo): Cuyabeno, Tarapoa, 300 m (00°07'21.2'' S, 076°20'45.9'' W) (85). Orellana: Yasuni National Park, Tiputini Biodiversity Station, Lago Trail 2000 m (0°38'15.54''S, 76°9'51.82''W), near Río Tiputini (c. 8 km from Tiputini Biodiversity Station) (00°39'53'' S, 076°12'54'' W) (4). (E).</p>
<p>77. <i>Culex (Anoediopora) conservator</i> Dyar & Knab, 1906. Synonyms: <i>Culex bifoliata</i> Dyar, 1922; <i>Culex divisor</i> Dyar & Knab, 1906; <i>Culex paganus</i> Evans, 1923; <i>Culex surukumensis</i> Anduze, 1941. Santo Domingo de los Tsachilas: Reserva La Perla (00°01'53'' S, 79°24'04'' W) (17). Orellana, Yasuni National Park: Tiputini Biodiversity Station, Murciélago Trail 250 m (0°38'13.50''S, 76°8'38.08''W), Lago trail 2000 m (00°38'15.5'' S, 076°09'51.8'' W) (4). INSPI collection – Guayas: Guayaquil ECU20063. (E, W).</p>
<p>78. <i>Culex (Carrollia) babahoyensis</i> Levi-Castillo, 1953† Los Ríos: Juan Montalvo, Hacienda "Mora" (35, 92). Los Rios: Montalvo, 30 Km E of Babahoyo: Hacienda Mora, across river at end of main path of Montalvo (01°49'12'' S, 079°31'07.8'' W). Los Rios: Quevedo, 1 km E from Valencia. (00°56'46.9'' S, 079°20'10.5'' W). Los Rios: about 30 km SW of Quevedo, 3 km S of El Empalme, 100 m (01°06'12'' S, 079°41'07.9'' W) (16, 17). Orellana: Loreto, Rio Bigal (00°32'11.4'' S, 077°25'29'' W). INSPI collection – Sucumbíos: Nueva Loja ECU19837; Sucumbíos: Shushufindi ECU19631; Orellana, Loreto, Rio Bigal ECU10729. (E, W).</p>
<p>79. <i>Culex (Carrollia) bihaicolus</i> Dyar & Nuñez Tovar, 1927. Los Rios: Quevedo, 1 km E from Valencia, 200 m (00°56'46.9'' S, 079°20'10.5'' W) (16). Santo Domingo de los Tsachilas: Valle Hermoso, km. 24 Quinde-Esmeraldas (00°05'10'' S, 079°16'21'' W) (17). Esmeraldas: Quinde. Los Rios: Balzar (00°19'33.2'' N, 079°27'58'' W) (97). (W).</p>
<p>80. <i>Culex (Carrollia) bonnei</i> Dyar, 1921. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya"; at Confluence with Rio Jivino (00°26'12'' S, 076°37'07.5'' W) (97). Orellana: Yasuni National Park, Tiputini Biodiversity Station: Lago trail ~1500 m</p>

(00°38'15.5'' S, 076°09'51.8'' W), Main Camp (0°38'13.51''S, 76°9'0.32''W) (4). Esmeraldas: San Francisco de Bogotá (01°09'21.98''N, 78°40'17.98''W) (75). (E).
81. <i>Culex (Carrollia) infolatus</i> Bonne-Wepster & Bonne, 1920. Pastaza (formerly Napo-Pastaza): Puyo (97). INSPI collection - Orellana, Loreto, Rio Bigal ECU10723. (E).
82. <i>Culex (Carrollia) iridescens</i> Lutz, 1905. Synonym: <i>Carrollia iridescens</i> Lurz, 1905. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Maquisapa trail 6200 m (00°37'54.9''S, 076°09'58.4''W) (4). (E).
83. <i>Culex (Carrollia) secundus</i> Bonne-Wepster & Bonne, 1920. Orellana: Tiputini Biodiversity Station, Tiputini River, 6 km from Tiputini Biodiversity Station (0°39'50.00''S, 76°12'56.01''W) (4). (E).
84. <i>Culex (Carrollia) urichii</i> (Coquillett, 1906). Synonyms: <i>Culex mathesoni</i> Anduze, 1942; <i>Melanoconion urichii</i> Coquillett, 1906. Orellana: Yasuni National Park, Tiputini Biodiversity Station: Harpia Trail 100m (0°38'13.51''W, 76°9'0.32''W), Murciélago Trail 250 m (0°38'13.50''S, 76°8'38.08''W), near Lake (00°38'13.51''S, 76°09'0.31''W), Lago trail 1700m (0°38'14.12''S, 76°9'43.74''W), Lago trail 1500m (0°38'14.98''S, 76°9'37.53''W), near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00''S, 76°12'54.00''W), Main camp (0°38'13.52''S, 76°9'0.33''W), (0°38'8.99''S, 76°9'34.96''W) (4). (E).
85. <i>Culex (Carrollia) wilsoni</i> Lane & Whitman, 1943. Orellana: Yasuni National Park, Tiputini Biodiversity Station: Maquisapa trail 6300 m (00°37'54.9'' S, 076°09'58.3'' W) (4). (E).
86. <i>Culex (Culex) bonnei</i> Dyar & Knab, 1919. Napo, Coca, confluence of Rio Coca and Rio Napo, 250m (16). Orellana: Yasuni National Park, tower 34m Tiputini Biodiversity Station (00°38'17'' S, 076°08'42'' W). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Main camp (0°38'13.52''S, 76°9'0.33''W), Tower (0°38'17.00''S, 76°8'42.00''W) (4). (E).
87. <i>Culex (Culex) camposi</i> Dyar, 1925†. Synonym: <i>Culex coronator camposi</i> , resurrected from syn coronator Bram, 1967. Los Rios, Quevedo, about 10km SW of, Pichilingue, 100 (16). Near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00''S, 76°12'54.00''W) (4). (E, W).
88. <i>Culex (Culex) chidesteri</i> Dyar, 1921. Synonyms: <i>Culex deanei</i> Correa & Ramalho, 1959; <i>Culex finlayi</i> Perez Viguera, 1956. INSPI collection - Manabí: Pacoche ECU12425; Napo: Jatun Sacha ECU3497. (E).

89. *Culex (Culex) coronator* Dyar & Knab, 1906. Synonym: *Culex mooseri* Vargas & Martinez Palacios, 1954. Guayas: Guayaquil, Durán (9, 87). Zamora Chinchipe: Zamora, about 10 km NE of tributary stream of Río Zamora; Sucumbios: Cuyabeno, about 50 km of “Tarapoa Campamento Base”; Cuyabeno, about 50 km W of “Tarapoa, Aguarico 3, Contrasa”; Cuyabeno, about 50 km W of “Tarapoa, Campamento, 5.5 km N” (records as “coronator” group”, 16). Orellana: Yasuni National Park: near Río Tiputini (c. 8 km from Tiputini Biodiversity Station) (00°39’53’’ S, 076°12’54’’ W), Main camp (0°38’13.52’’S, 76°9’0.33’’W) (4). INSPI collection – Pichincha: Caoni ECU14922; Manabí: Portoviejo ECU7120; Napo: Jatun Sacha ECU3419. (E, W).

90. *Culex (Culex) declarator* Dyar & Knab, 1906. Synonyms: *Culex dictator* Dyar & Knab, 1909; *Culex forattinii* Correa & Ramalho, 1959; *Culex inquisitor* Dyar & Knab, 1906; *Culex jubillator* Dyar & Knab, 1907; *Culex proclamator* Dyar & Knab, 1906; *Culex revelator* Dyar & Knab, 1907; *Culex vindicator* Dyar & Knab, 1909. Guayas: Chongon, 24 km W of Guayaquil on Rt. 3 near road to Chongon (02°13’10.5’’ S, 080°05’05.8’’ W); Guayaquil, 10 km W on Rt. 3; Esmeraldas: near Atacames (00°52’36’’ N, 79°50’46.3’’ W); Orellana: Tarapoa, about 50 km W of Cuyabeno (2 records as declarator group) (00°07’21.2’’ S, 076°20’45.9’’ W) (16). INSPI collection – Manabí: Pacoche ECU12427. (E, W).

91. *Culex (Culex) mollis* Dyar & Knab, 1906. Synonyms: *Culex elocutis* Dyar & Knab, 1909; *Culex equivocator* Dyar & Knab, 1907; *Culex lateropunctata* Theobald, 1907; *Culex lepostenis* Dyar, 1923; *Culex tisseuli* Senevet, 1937. Orellana: Yasuni National Park, Tiputini Biodiversity Station, near Lake (0°38’13.51’’S, 76°9’0.32’’W), Lago Trail 2000 m (0°38’15.54’’S, 76°9’51.79’’W), Lago Trail 1700 m (0°38’14.13’’S, 76°9’43.83’’W), Lago trail 1500 m (0°38’14.98’’S, 76°9’37.53’’W), Main camp (0°38’13.52’’S, 76°9’0.33’’W), Numa trail (0°38’15.50’’S, 76°8’59.31’’W), Chorongon trail (0°38’11.18’’S, 76°8’55.67’’W) (4). Santo Domingo de los Tsáchilas (formerly Pichincha): Reserva La Perla (00°01’03’’ S, 079°23’47’’ W). Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28’12’’ S, 076°58’07.5’’ W) (16). (E, W).

92. *Culex (Culex) nigripalpus* Theobald, 1901. Synonyms: *Culex azuayus* Levi-Castillo, 1954; *Culex biocellatus* Theobald, 1903; *Culex caraibeus* Howard, Dyar & Knab, 1912; *Culex carmodyae* Dyar & Knab, 1906; *Culex factor* Dyar & Knab, 1906; *Culex microsquamatus* Theobald, 1905; *Culex mortificator* Dyar & Knab, 1906; *Culex palus* Theobald, 1903; *Culex prasinopleurus* Martini, 1914; *Culex proximus* Dyar & Knab, 1909; *Culex regulator* Dyar & Knab, 1906; *Culex similis* Theobald, 1903; *Trichopronomyia microannulata* Theobald, 1907. Guayas, Chongon: 24 km W of Guayaquil on Rt. 3 near road to Chongon (02°13’10.5’’ S, 080°05’05.8’’ W), Guayas: Samborondon, road just NW of, 20m; Guayas: Guayaquil, 10 km W of on route 3 (2°11’20.69’’S, 79°57’56.99’’W); Guayas: Guayaquil, airport (2°9’42.79’’S, 79°53’5.73’’W); Manabí: Manta; Guayas: Guayaquil, Febres Cordero (2°12’2.89’’S, 79°54’55.69’’W), Guayas: Guayaquil, Atarazana (2°10’47.92’’S, 79°53’5.68’’W) (16, 17). Esmeraldas: Reserva La Perla (0°1’3.00’’S, 79°23’47.00’’W), Orellana: Coca, confluence of Río Coca and Río Napo (0°28’11.96’’S, 76°58’7.50’’W) (17). INSPI collection – Sucumbíos: Shushufindi ECU14855. (Susumbíos: Nueva Loja) ECU14114; Manabí: Santa Ana

ECU13696; Manabí: Bahía de Caráquez ECU13667; Manabí: Pacoche ECU10581. Pichincha: Sangolquí ECU13554; Napo: Jatun Sacha ECU3484. (E, W).
<p>93. <i>Culex (Culex) quinquefasciatus</i> Say, 1823. Synonyms: <i>Culex acer</i> Walker, 1848; <i>Culex aestuans</i> Wiedemann, 1828; <i>Culex aikenii</i> Dyar & Knab, 1908; <i>Culex albolineatus</i> Giles, 1901; <i>Culex anxifer</i> Bigot, 1859; <i>Culex aseyehae</i> Dyar & Knab, 1915; <i>Culex autumnalis</i> Weyenbergh, 1882; <i>Culex barbarus</i> Dyar & Knab, 1906; <i>Culex cartroni</i> Ventrillon, 1905; <i>Culex christophersii</i> Theobald, 1907; <i>Culex cingulatus</i> Doleschall, 1856; <i>Culex cubensis</i> Bigot, 1857; <i>Culex didieri</i> Neveu-Lemaire, 1906; <i>Culex fatigans</i> Wiedemann, 1828; <i>Culex fouchowensis</i> Theobald, 1901; <i>Culex hensemaeon</i> Dyar, 1920; <i>Culex luteoannulatus</i> Theobald, 1901; <i>Culex macleayi</i> Skuse, 1889; <i>Culex minor</i> Theobald, 1908; <i>Culex nigrirostris</i> Enderlein, 1920; <i>Culex pallidocephala</i> Theobald, 1904; <i>Culex penafielii</i> Sanchez, 1885; <i>Culex pungens</i> Wiedemann, 1828; <i>Culex pygmaeus</i> Neveu-Lemaire, 1906; <i>Culex quasilinealis</i> Theobald, 1907; <i>Culex quasipipiens</i> Theobald, 1901; <i>Culex raymondii</i> Tamayo, 1907; <i>Culex reesi</i> Theobald, 1901; <i>Culex revocator</i> Dyar & Knab, 1909; <i>Culex sericeus</i> Theobald, 1901; <i>Culex serotinus</i> Philippi, 1865; <i>Culex skusii</i> Giles, 1900; <i>Culex trilineatus</i> Theobald, 1901; <i>Culex zeltneri</i> Neveu-Lemaire, 1906; <i>Culicelsa fuscus</i> Taylor, 1914. Guayas: Daule, about 10 km S of El Triunfo (01°56'12'' S, 079°58'07.9'' W). Guayas: Guayaquil, airport (02°09'54.7'' S, 079°53'13.8'' W). Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). Galapagos Islands (restricted to human settlements): Baltra, Isabela, Santa Cruz, San Cristobal (50, 89, 91, 93). Imbabura: Lita (0°52'11.83''N, 78°27', 05.56''W), Cachaco (0°49'41.19''N, 78°24'03.55''W), Esmeraldas: San Francisco de Bogotá (01°09'21.98''N, 78°40'17.98''W) (75). Cosmotropical (92). Cosmotropical (18). INSPI collection – Guayas: Guayaquil ECU19978; Napo: Quijos ECU16353; Sucumbíos: Shushufindi ECU14859; Esmeraldas: Esmeraldas ECU13849; Pichincha: San Rafael ECU 13698; Imbabura: Ibarra ECU13153; Galapagos: Santa Cruz ECU12905. Galápagos: San Cristóbal - ECU12890. Manabí: Pacoche ECU12425. (E, W, G).</p>
<p>94. <i>Culex (Culex) stenolepis</i> Dyar & Knab, 1908. Pichincha, Pululahua Geobotanical Reserve, Pululahua Volcano (0°03'28.9''N, 78°30'29.1''W) (75). (H).</p>
<p>95. <i>Culex (Culex) stigmatosoma</i> Dyar, 1907. Manabí: San Lorenzo, Pacoche Wildlife Refuge (1°4'14.74''S, 80°53'26.99''W). INSPI collection - ECU12428, ECU12429, ECU12431, ECU12432. (NR, W).</p>
<p>96. <i>Culex (Culex) thriambus</i> Dyar, 1921. Synonyms: <i>Culex affinis</i> Adams, 1903; <i>Culex peus</i> Speiser, 1904; <i>Culex eumimetes</i> Dyar & Knab, 1908. Manabí: San Lorenzo, Pacoche Wildlife Refuge (1°7'38.86''S, 80°50'35.48''W) ECU10558. (NR, W).</p>
<p>97. <i>Culex (Culex) usquatissimus</i> Dyar, 1922. Synonym: <i>Culex coronator</i> Bram 1967. Orellana: Yasuní National Park, Tiputini Biodiversity Station (4). (E).</p>

98. <i>Culex (Culex) usquatus</i> Dyar, 1918. Orellana: Yasuní National Park, Tiputini Biodiversity Station (0°39'53.00''S, 76°12'54.00''W) (4). (E).
99. <i>Culex (Melanoconion) adamesi</i> Sirivanakarn & Galindo, 1980. Esmeraldas: Hdq. de Jesus, Quinonez, Quinde (00°20'48.4'' N, 079°28'35'' W). Guayas: San Rafael, Tenguel (02°58'12.4'' S, 079°46'20.3'' W) (98). (W).
100. <i>Culex (Melanoconion) bastagarius</i> Dyar & Knab, 1906. Synonyms: <i>Culex alfaroi</i> Dyar, 1921; <i>Culex cuclyx</i> Dyar & Shannon, 1924; <i>Culex innominatus</i> Evans, 1924; <i>Culex thomasi</i> Evans, 1924; <i>Culex vapulans</i> Dyar, 1920; <i>Culex xivylis</i> Dyar, 1920. Pastaza: Puyo, 1.5 km S (01°28'01.4'' S, 077°59'1.5'' W); Napo: Tena, 13 km SW. Sto. Domingo de los Tsáchilas (formerly Pichincha): Valle Hermoso, next to Hosteria (00°05'17'' S, 079°16'34'' W) (17). (E, W).
101. <i>Culex (Melanoconion) batesi</i> Rozeboom & Komp, 1948. Napo: Tena (00°59'48'' S; 077°48'49.3'' W) (17, 99). (E).
102. <i>Culex (Melanoconion) conspirator</i> Dyar & Knab, 1906. Synonyms: <i>Culex dysmathes</i> Dyar & Ludlow, 1921; <i>Culex fatuator</i> Dyar & Shannon, 1924; <i>Culex holoneus</i> Dyar, 1935; <i>Culex inducens</i> Root, 1928; <i>Culex macaronensis</i> Dyar & Nunez Tovar, 1926; <i>Culex merodaemon</i> Dyar, 1921; <i>Culex meroneus</i> Dyar, 1925; <i>Culex pasadaemon</i> Dyar, 1921. Guayas: Guayaquil, 10 km W of Rt 3 (02°11'32.6'' S, 079°58'05'' W) (16). (W).
103. <i>Culex (Melanoconion) dunni</i> Dyar, 1918. Synonyms: <i>Culex exedrus</i> Root, 1927; <i>Culex ruffinis</i> Dyar & Shannon, 1924. Napo: Tena, 32 km S (01°16'01.4''S, 077°49'01.5'' W), Limoncocha Lake (00°23'39.8'' S, 076°37'01.2'' W) (17). (E).
104. <i>Culex (Melanoconion) eastor</i> Dyar, 1920. Synonym: <i>Culex manaosensis</i> Evans, 1924. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). Orellana: Yasuni National Park, Tiputini Biodiversity Station, near Lake (00°38'08.2'' S, 076°09'53.5'' W) (4). (E).
105. <i>Culex (Melanoconion) educator</i> Dyar & Knab, 1906. Synonyms: <i>Culex aneles</i> Dyar & Ludlow, 1922; <i>Culex apeteticus</i> Howard, Dyar & Knab, 1912; <i>Culex bibulus</i> Dyar, 1920; <i>Culex keenani</i> Galindo & Mendez, 1961. Los Rios: Babahoyo 5 km W of, 50 m (16, 92). (E).
106. <i>Culex (Melanoconion) eknomios</i> Forattini & Sallum, 1992. Sucumbios: Limoncocha (00°24'37.8'' S, 076°37'26.4'' W) (100). (E).

107. <i>Culex (Melanoconion) elevator</i> Dyar & Knab, 1906. Synonyms: <i>Culex bonneti</i> Senevet, 1938; <i>Culex curryi</i> Dyar, 1926; <i>Culex dornarum</i> Dyar & Shannon, 1924; <i>Culex vogelsangi</i> Anduze, 1948. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Harpía Trail 1500 m (0°37'32.30''S, 76° 8'52.03''W), (0°38'8.99''S, 76°9'34.99''W), Harpía Trail 800 m (0°37'48.64''S, 76°8'43.81''W), Maquisapa trail 6300 m (00°37'54.9'' S, 076°09'58.3'' W) (4). (E).
108. <i>Culex (Melanoconion) ensiformis</i> Bonne-Wepster & Bonne, 1920. Sto. Domingo de los Tsáchilas (formerly Pichincha): Valle Hermoso, next to Hosteria (00°05'17'' S, 079°16'34'' W) (17). (W).
109. <i>Culex (Melanoconion) erraticus</i> (Dyar & Knab, 1906). Synonyms: <i>Culex borinqueni</i> Root, 1922; <i>Culex degustator</i> Dyar, 1921; <i>Culex egeberti</i> Dyar & Knab, 1907; <i>Culex homoepas</i> Dyar & Ludlow, 1921; <i>Culex leprincei</i> Dyar & Knab, 1907; <i>Culex moorei</i> Dyar, 1918; <i>Culex peribleptus</i> Dyar & Knab, 1918; <i>Culex pose</i> Dyar & Knab, 1918; <i>Culex tovari</i> Evans, 1924; <i>Culex trachycampa</i> Dyar & Knab, 1909. Guayas: Guayaquil, Atarazana (02°10'59.8'' S, 079°53'13.7'' W). Esmeraldas: La Propicia (00°56'0.2''N, 079°39'28.6''W) (16). INSPI collection – Guayas: Guayaquil ECU13150. (W).
110. <i>Culex (Melanoconion) evansae</i> Root, 1927. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W); Bigal (00°32'11.4'' S, 077°25'29'' W), (16, 17). Orellana: Yasuni National Park, Tiputini Biodiversity Station (0°38'8.99''S, 76°9'34.96''W), Guacamayo Trail 2300m (0°38'2.42''S, 76°9'49.87''W) (4). (E).
111. <i>Culex (Melanoconion) iolambdis</i> Dyar, 1918. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Harpía Trail 750 m (00°37'50.2'' S, 076°08'43.4'' W) (4). (E).
112. <i>Culex (Melanoconion) lucifugus</i> Komp, 1936. Orellana (formerly Napo): About 50 km E of El Coca, Isla Pompeya (island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16). (E).
113. <i>Culex (Melanoconion) ocosa</i> Dyar & Knab, 1919. Sucumbios: Limoncocha (00°24'1.4''S, 076°38'1.5''W) (17). (E).
114. <i>Culex (Melanoconion) oedipus</i> Root, 1927. Esmeraldas: San Lorenzo (01°17'21.9''N, 078°50'9.0''W) (99). (W).
115. <i>Culex (Melanoconion) paracrybda</i> Komp, 1936. Esmeraldas: on road to Muisne (00°37'35.9''N, 80°00'26.7''W) (17). (W).

116. <i>Culex (Melanoconion) pedroi</i> Sirivanakarn & Belkin, 1980. Orellana (formerly Napo) Coca. Esmeraldas: San Lorenzo (01°17'21.9''N, 078°50'9.0''W) (101). (E, W).
117. <i>Culex (Melanoconion) penai</i> Sirivanakarn, 1979. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (98). (E).
118. <i>Culex (Melanoconion) pilosus</i> Lee, 1946. Synonyms: <i>Culex agitator</i> Dyar & Knab, 1907; <i>Culex colombiensis</i> Dyar, 1924; <i>Culex curopiensis</i> Bonne-Wepster & Bonne, 1919; <i>Culex deceptor</i> Dyar & Knab, 1909; <i>Culex hesitator</i> Dyar & Knab, 1907; <i>Culex ignobilis</i> Dyar & Knab, 1909; <i>Culex mastigia</i> Howard, Dyar & Knab, 1912; <i>Culex radiatus</i> Senevet & Abonnenc, 1939; <i>Culex reductor</i> Dyar & Knab, 1909; <i>Mochlostyrax cubensis</i> Dyar & Knab, 1906; <i>Mochlostyrax floridanus</i> Dyar & Knab, 1906; <i>Mochlostyrax jamaicensis</i> Grabham, 1906; <i>Mochlostyrax pilosus</i> Dyar & Knab, 1906. Manabí, “Bahía, Floresta” (0°56'59.84''S, 80°43'49.30''W) (16). Orellana: Yasuni National Park, Tiputini Biodiversity Station, near Rio Tiputini (0°39'53.00''S, 76°12'54.00''W), Lake (c. 4 hectares) (0°38'13.52''S, 76°9'0.33''W), Main camp (0°38'13.52''S, 76°9'0.33''W) (4). Guayas: Samborondon, Estero NW de La Bocana; road upstream from Town (01°57'11.9'' S, 79°44'7.9''W). Napo: Tena: 11.7 km SW (01°10'1.4''S, 077°, 53' 1.5''W). Pastaza: Puyo (01°28'1.4''S, 077°59'1.5''W). Sucumbios (formerly Napo): Limoncocha (00°24'37.8'' S, 076°37'26.4'' W) (17). INSPI collection – Guayas: Guayaquil ECU13151. Napo: Jatun Sacha ECU3499. (E, W).
119. <i>Culex (Melanoconion) psatharus</i> Dyar, 1920. Guayas: Posorja, just W of: Espinal Pto. Del Morro (02°44'7.2''S, 80°15'19.8''W) (16, 17). (W).
120. <i>Culex (Melanoconion) putumayensis</i> Matheson, 1934. Synonym: <i>Culex cavernicola</i> Floch & Abonnenc, 1945. Orellana (formerly Napo): Coca, about 50 km E of “Isla Pompeya” (island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16, 17). (E).
121. <i>Culex (Melanoconion) serratimarge</i> Root, 1927. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Lake (c. 4 hectares) (0°38'13.52''S, 76°9'0.33''W) (4). (E).
122. <i>Culex (Melanoconion) spissipes</i> (Theobald, 1903). Synonyms: <i>Culex alvarezi</i> Sutil Oramas, Pulido Florenzano & Amarista Meneses, 1987; <i>Culex fur</i> Dyar & Knab, 1907; <i>Culex haynei</i> Komp & Curry, 1932; <i>Culex menytes</i> Dyar, 1918; <i>Melanoconion spissipes</i> Theobald, 1903. Sucumbios (formerly Napo): Cuyabeno, about 50 km W of, “Tarapoa, Campamento de Caminos 800-1000 m sur de la pista,” 300 m (16). (E).

123. <i>Culex (Melanoconion) sursumptor</i> Dyar, 1924. Synonym: <i>Culex ligator</i> Dyar, 1924. Pastaza: Puyo, 16 km NE (01°23'1.4''S 077°53'1.5''W), Sucumbios: Limoncocha, other side of Limoncocha Lake opposite house (17). (E).
124. <i>Culex (Melanoconion) symbletos</i> Sallum & Hutchings, 2003. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Lake (c. 4 hectares) (0°38'13.52''S, 76°9'0.33''W) (4). (E).
125. <i>Culex (Melanoconion) taeniopus</i> Dyar & Knab, 1907. Synonyms: <i>Culex opisthopus</i> Komp, 1926; <i>Culex annulipes</i> (Theobald); <i>Culex mychonde</i> Komp; <i>Culex opisthopus</i> Komp. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (17). (E).
126. <i>Culex (Melanoconion) theobaldi</i> (Lutz, 1904). Synonyms: <i>Culex chrysonotum</i> Dyar & Knab, 1908; <i>Melanoconion theobaldi</i> Lutz, 1904; <i>Neomelanoconion chrysanthorax</i> Newstead & Thomas, 1910. Sucumbios: Limoncocha (00°24'37.8'' S, 076°37'26.4'' W), Sucumbios: Cuyabeno, Ab 50 km W of: Tarapoa; (campamento Base), Esmeraldas: La Propicia (00°56'0.2''N, 079°39'28.6''W) (17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Lake (c. 4 hectares) (0°38'13.52''S, 76°9'0.33''W), Rio Tiputini, Blackwater area (c. 3.5 km from Tiputini Biodiversity Station) (0°38'18.00''S, 76°10'55.00''W), Main camp (0°38'13.52''S, 76°9'0.33''W) (4). (E, W).
127. <i>Culex (Melanoconion) vomerifer</i> Komp, 1932. Esmeraldas San Lorenzo, 14km from “La Chiquita,” near sea level (01°13'41.9''N, 078°45'55''W) (16). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Main camp (0°38'13.52''S, 76°9'0.33''W) (4). (E, W).
128. <i>Culex (Microculex) chryselatus</i> Dyar & Knab, 1919. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Tower (00°38'17'' S, 076°08'42'' W) ((4), 17). INSPI collection - Esmeraldas: Alto Tambo (0°55'49.00''N, 78°32'37.00''W) (75). (E, W).
129. <i>Culex (Microculex) neglectus</i> Lutz, 1904. Esmeraldas: Alto Tambo (0°55'49.00''N, 78°32'37.00''W) (75). (W).
130. <i>Culex (Microculex) pleuristriatus</i> Theobald, 1903. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Tower (00°38'17'' S, 076°08'42'' W), Main camp (0°38'13.52''S, 76°9'0.33''W) (4). (E).
131. <i>Culex (Microculex) stonei</i> Lane & Whitman, 1943. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Tower (00°38'17'' S, 076°08'42'' W) (4). (E).

132. *Culex (Phenacomyia) corniger* Theobald, 1903. Synonyms: *Culex basilicus* Dyar & Knab, 1906; *Culex hassardii* Grabham, 1906; *Culex loquaculus* Dyar & Knab, 1909; *Culex rigidus* Senevet & Abonnenc, 1939; *Culex subfuscus* Theobald, 1907. Orellana (formerly Napo): About 50 km E of El Coca, Isla Pompeya (island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W). Esmeraldas: Burrera Island (00°55'0.01S, 079°39'11''W) (17). Sucumbios (formerly Napo), Cuyabeno, about 50 km W of, "Tarapoa, Campamento de caminos 800-1000 m sur de la pista," 300 m (16). Imbabura: Lita (0°52'11.83''N, 78°27', 05.56''W), Esmeraldas: San Francisco de Bogotá (01°09'21.98''N, 78°40'17.98''W), Esmeraldas: Durango (1°00'40.87''N, 78°36'03.85''W), Carchi: El Baboso (0°53'47.05''N, 78°26'34.98''W) (75). INSPI collection – Manabí: Pacoche ECU12433; Esmeraldas: Esmeraldas ECU6112. (E, W).
133. *Culex ocellatus* Theobald, 1903. Uncertain subgenus. Synonyms: *Culex automartus* Root, 1927. Guayas: Sanborondón, Coleção de Mosquitos Neotropicais (CMN) Fiocruz (17). (W).
134. *Deinocerites pseudes* Dyar & Knab, 1909. Guayas: Playas, 7 km SE of Playas on road to Posorja (02°40'52'' S, 080°21'16.2'' W) (16, 17). INSPI collection – Esmeraldas: Río Verde ECU8451. (W).
135. *Galindomyia leei* Stone & Barreto, 1969. Manabí: Bahía de Caraquez (00°37'47.9''S, 80°25'28.3''W) (102). (W).
136. *Lutzia (Lutzia) allostigma* (Howard, Dyar & Knab, 1915). Orellana: Yasuni National Park, Tiputini Biodiversity Station: near Lake (00°38'13.47''S, 76°09'0.25''W), Lago trail 1500 m (0°38'14.98'S, 76°9'37.53''W), Main camp (0°38'13.52''S, 76°9'0.33''W), near Main Camp (022°15.14''S, 76°9'0.32''W) (4). Morona Santiago: Macas ECU16518; Sucumbíos: Shushufindi ECU7310. (E).

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582 - **Tribe Mansoniini:10 species**

137. *Coquillettidia (Rhynchotaenia) albicosta* (Peryassu, 1908). Synonym: *Taeniorhynchus albicosta* Peryassu, 1908. Sucumbíos: Shushufindi, Barrio La Unión (00° 09' 28.72" S, 76° 38' 53.05" W) ECU10696. (NR, E).
138. *Coquillettidia (Rhynchotaenia) arribalzagae* (Theobald, 1903). Synonyms: *Taeniorhynchus arribalzagae* Theobald, 1903; *Taeniorhynchus cotricula* Dyar & Knab, 1907. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m

(00°28'12'' S, 076°58'07.5'' W), Sucumbios: Coca, about 50 km E of “Isla Pompeya” (0°26'S, 76°37''W) (16, 17). (E).
139. <i>Coquillettidia (Rhynchoetaenia) fasciolata</i> (Lynch Arribálzaga, 1891). Synonym: <i>Taeniorhynchus fasciolata</i> Lynch Arribalzaga, 1891. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W); about 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W). Sucumbios (formerly Napo): Cuyabeno, 50 km of Tarapoa, Campamento de caminos 800-1000 m sur de la pista (16, 17). (E).
140. <i>Coquillettidia (Rhynchoetaenia) lynchi</i> (Shannon, 1931). Synonym: <i>Mansonia lynchi</i> Shannon, 1931. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W); Napo: about 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16, 17). INSPI collection – Zamora Chinchipe: Zamora ECU8051. (E).
141. <i>Coquillettidia (Rhynchoetaenia) nigricans</i> (Coquillett, 1904). Synonyms: <i>Bancroftia persephassa</i> Dyar & Knab, 1909; <i>Taeniorhynchus nigricans</i> Coquillett, 1904. INSPI collection – Sucumbios: Nueva Loja ECU14109. Manabí: Montecristi ECU11436. (E).
142. <i>Mansonia (Mansonia) humeralis</i> Dyar & Knab, 1916. INSPI collection Santo Domingo de los Tsáchilas: Valle Hermoso ECU19100. Guayas: Guayaquil ECU6104. (W).
143. <i>Mansonia (Mansonia) indubitans</i> Dyar & Shannon, 1925. Manabí, “Bahía, Floresta” (0°56'59.84''S, 80°43'49.30''W) (16) (W).
144. <i>Mansonia (Mansonia) pseudotitillans</i> Theobald, 1901. Synonym: <i>Panoplites pseudotitillans</i> Theobald, 1901. INSPI collection – Esmeraldas: Esmeraldas ECU13848. (W).
145. <i>Mansonia (Mansonia) titillans</i> (Walker, 1848). Synonym: <i>Culex titillans</i> Walker, 1848. INSPI collection – Guayas: Guayaquil ECU10715. Zamora: Zamora ECU8094. (W).
146. <i>Mansonia (Mansonia) wilsoni</i> (Barreto & Coutinho, 1944). Synonym: <i>Taeniorhynchus wilsoni</i> Barreto & Coutinho, 1944. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Maquisapa trail 6300 m (00°37'54.9'' S, 076°09'58.3'' W) (4). INSPI collection - Los Ríos: Baba ECU16544. (E, W).

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584 - **Tribe Orthopodomyiini: 3 species**

147. *Orthopodomyia albicosta* (Lutz, 1904). Synonym: *Bancroftia albicosta* Lutz, 1904. INSPI collection - Morona Santiago: Macas (02°20'17.30''S, 078°9'46.63''W) ECU11574, ECU11586, ECU11590. (NR, E).

148. *Orthopodomyia fascipes* (Coquillett, 1906). Synonyms: *Mansonia bacigalupoi* Martinez & Prosen, 1958; *Mansonia fascipes* Coquillett, 1906; *Mansonia longipalpis* Newstead & Thomas, 1910; *Mansonia townsendi* Lima, 1935. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Canopy walkway (0°38'14.86''S, 76°8'36.66''W), Maquisapa trail 6200 m (00°37'54.9''S, 076°09'58.4''W) (4). Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). (E).

149. *Orthopodomyia phyllozoa* (Dyar & Knab, 1907). Synonym. *Mansonia phyllozoa* Dyar & Knab, 1907. Sto. Domingo de los Tsachilas (formerly part of Pichincha): Reserva La Perla (00°01'03'' S, 079°23'47'' W) (17). INSPI collection – Sucumbíos: Nueva Loja ECU14118. (E, W).

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586 - **Tribe Sabethini: 41 species**

150. *Johnbelkinia longipes* (Fabricius, 1805). Synonym: *Culex longipes* Fabricius, 1805. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W), Napo: about 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16, 17, 64). INSPI collection – Sucumbíos: Shushufindi ECU13365; Napo: Tena ECU7357. (E).

151. *Johnbelkinia ulopus* (Dyar & Knab, 1906). Synonym: *Lesticocampa culicivora* Dyar & Knab 1907. Cañar: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4'' S, 079°17'50.6'' W) (16, 17). Bolivar: Balzapamba; Cañar: Cochancay, km 86 Hwy; Los ríos: Pichilingue (17, 64). INSPI collection – Santo Domingo de los Tsáchilas: Santo Domingo ECU20402; Pichincha: Mindo ECU10267. (W).

152. *Limatus asulleptus* (Theobald, 1903). Synonyms: *Limatus methysticus* Dyar and Knab, 1909; *Dendromyia asulleptus* Theobald, 1903. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W), about 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W). Los Rios: Quevedo, 1 km E de Valencia (00°57'14.8'' S, 079°21'10.3''W) (16, 17). INSPI collection - Esmeraldas: San Lorenzo, San Francisco ECU3768; Imbabura: Lita ECU19850. (E, W).

153. *Limatus durhamii* Theobald, 1901. Synonyms: *Dendromyia paraensis* Theobald, 1903; *Limatus cacophrades* Dyar & Knab, 1909; *Limatus exhibitor* Shannon & Ponte, 1927; *Simondella curvirostris* Laveran, 1902. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12" S, 076°58'07.5" W); Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya" (island in Rio Napo at confluence with Rio Jivino) (00°26'12" S, 076°37'07.5" W). Los Rios: Quevedo, 1 km E of Valencia, 200m (01°01'11.9" S, 076°58'7.5" O); Los Rios: Quevedo, about 10 km SW of, Pichilingue (01°06'11.9" S, 079°29'7.8" W); Los Rios: Babahoyo, about 30 km E of, Montalvo (01°49'11.9" S, 079°31'7.8" W); Sucumbios (formerly Napo): Cuyabeno, about 50 km W of, "Tarapoa, Campamento, 5.5 km N" 300 m (16, 17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Lago trail 1700 m (0°38'14.12" S, 76°9'43.74" W), Main camp (0°38'13.52" S, 76°9'0.33" W), Lago Trail 1400 m (0°38'14.94" S, 76°9'34.46" W) (4). Imbabura: Lita (0°52'11.83" N, 78°27', 05.56" W), Cachaco (0°49'41.19" N, 78°24'03.55" W). INSPI collection - Esmeraldas: San Lorenzo, San Francisco; Chimborazo, Cumandá ECU204; Morona Santiago: Yantzaza ECU6142; Santo Domingo de los Tsáchilas: Santo Domingo ECU10224; Pichincha: Mindo ECU9999; Zamora Chinchipe: Zamora ECU10932. (E, W).

154. *Limatus flavisetosus* de Oliveira Castro, 1935. Orellana: Yasuní National Park, Tiputini Biodiversity Station, near Lake (00°38'13.51" S, 76°09'0.31" W), Lago Trail 2000 m (0°38'15.54" S, 76°9'51.82" W), Lago Trail 1700 m (0°38'14.13" S, 76°9'43.83" W), Main camp (0°38'13.52" S, 76°9'0.33" W), Harpia Trail 750 m (00°37'50.2" S, 076°08'43.4" W), Maquisapa trail 6200 m (00°37'54.9" S, 076°09'58.4" W) (4). INSPI collection - Santo Domingo de los Tsachilas: La Concordia ECU3288; Sucumbíos: Shushufindi ECU10938. (E, W).

155. *Onirion imparis* Peyton & Harbach, 2000. Orellana (formerly Napo): Coca, confluence of Rio coca and Rio Napo (Peyton & Harbach 2000). Orellana: Tiputini Biodiversity Station, Maquisapa trail (00°37'54.9" S, 076°09'58.4" W), Rio tiputini (6 km from Tiputini Biodiversity Station) (0°39'50.00" S, 76°12'56.01" W) (4). INSPI collection – Orellana: Loreto ECU10795. (E).

156. *Runchomyia* (*Ctenogoeldia*) *magna* (Theobald, 1905). Synonym: *Phoniomyia magnum* Theobald, 1905. Cañar: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4" S, 079°17'50.6" W). Los Rios: Quevedo; about 30 km SW of: 3 km S of El Empalme (01°06'11.9" S, 079°41'7.9" W) (16, 17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00" S, 76°12'54.00" W) (4). (E, W).

157. *Sabethes* (*Peytonulus*) *identicus* Dyar & Knab, 1907. Synonym: *Sabethes lutzianus* Lane & Cerqueira, 1942. INSPI collection – Manabí: Manta, Pacoche ECU10638. (W).

158. <i>Sabethes (Peytonulus) luxodens</i> Hall, Howard & Harbach, 1999**†. Guayas: Guayaquil, 12 km W of on Rt. 3 (2°11'20.73''S, 79°59'1.73''W) (Hall et al. 1999). Orellana: Yasuni National Park, Tiputini Biodiversity Station, near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00''S, 76°12'54.00''W) (4). (E).
159. <i>Sabethes (Petyonulus) soperi</i> Lane & Cerqueira, 1942. Napo: National Reserve Colonso-Chalupas (0°56'09.8''S, 77°54'12.3''W) (75). (E).
160. <i>Sabethes (Peytonulus) undosus</i> (Coquillett, 1906). Synonym: <i>Sabethoides undosus</i> Coquillett, 1906. Guayas: Guayaquil, 12 km W of on Rt 3; W of checkpoint on Rt 3; K 12 on Rt 3 (02°11'32.6'' S, 079°59'09.7'' W) (16, 17). (W).
161. <i>Sabethes (Sabethes) albiprivus</i> Theobald, 1903. Synonyms: <i>Sabethes albiprivatus</i> Lutz, 1904; <i>Sabethes albiprivatus</i> Theobald, 1907; <i>Sabethes neivai</i> Petrocchi, 1927. INSPI collection - Chimborazo: Cumandá (2°12'18.09''S, 79°8'9.56''W) ECU6283. Esmeraldas: Rioverde, Vía a Chonguillo (1°2'31.13''N, 79°22'59.48''W). ECU7244, ECU8059. Guayas: Progreso (2°24'57.86''S, 80°21'57.32''W) ECU7154. Los Ríos: Quevedo (01°1'4.83''S, 079°27'32.71''W) ECU6094. Manabí: Chone, San Andrés (0°41'17.70'S, 80°5'48.44'W). ECU6121. Manabí: Cantón Junín (No coordinates available) ECU6441. Santo Domingo de los Tsáchilas: Sueño de Bolívar (0°13'16.00''S, 79°9'54.18''W) ECU10100. (NR, W).
162. <i>Sabethes (Sabethes) amazonicus</i> Gordon & Evans, 1922. Synonyms: <i>Sabethes kappleri</i> Bonne, 1923; <i>Sabethes longfieldae</i> Edwards, 1928. INSPI collection - Zamora Chinchipe: Zamora, Copalinga ECU10694. (E).
163. <i>Sabethes (Sabethes) belisarioi</i> Neiva, 1908. Synonyms: <i>Sabethes argyronotum</i> Edwards, 1928; <i>Sabethes goeldii</i> Howard, Dyar & Knab, 1917; <i>Sabethes schausi</i> Dyar & Knab, 1908. INSPI collection - Sucumbíos: Shushufindi, ECU6609. (NR, E).
164. <i>Sabethes (Sabethes) bipartipes</i> Dyar & Knab, 1906. Synonym: <i>Sabethes chroiopus</i> Dyar & Knab, 1913. Guayas (Dyar 1925). Los Ríos: Quevedo, 1 km E of Valencia (00°56'46.9'' S, 079°20'10.5'' W), Los Ríos: Quevedo, about 10km SW of Pichilingue, Guayas: Guayaquil, 14km W of on Rt. 3 (2°10'48.21'S, 80°0'6.49''W), 12km W of on Rt. 3 (2°11'20.73''S, 79°59'1.73''W) (16, 17). (W).
165. <i>Sabethes (Sabethes) cyaneus</i> (Fabricius, 1805). Synonyms: <i>Culex cyaneus</i> Fabricius, 1805; <i>Culex remipes</i> Wiedemann, 1828; <i>Sabethes locuples</i> Robineau-Desvoidy, 1827. INSPI collection – Sucumbíos: Nueva Loja ECU18477. Esmeraldas: Alto Tambo ECU17956. (E, W).

<p>166. <i>Sabethes (Sabethes) purpureus</i> (Theobald, 1901). Synonyms: <i>Sabethes purpureus</i> Peryassu, 1908; <i>Sabethes remipusculus</i> Dyar, 1924; <i>Sabethoides purpureus</i> Theobald, 1907. INSPI collection - Esmeraldas: Río Verde, Vía El Alto (1°3'2.31''N, 79°25'13.67''W). ECU8528. Sucumbíos: Cuyabeno (0°13'3.41''S, 75°48'24.87''W) ECU10720. (NR, E, W).</p>
<p>167. <i>Sabethes (Sabethes) quasicyaneus</i> Peryassú, 1922. INSPI collection - Esmeraldas: San Lorenzo, Durango (1°17'18.00''N, 78°50'13.00''W) ECU3767. Esmeraldas: Vía El Alto (1°2'16.30''N, 79°14'55.54''W). ECU8531. Guayas: Progreso (2°24'57.86''S, 80°21'57.32''W) ECU7158. (NR, W).</p>
<p>168. <i>Sabethes (Sabethes) intermedius</i> (Lutz, 1904). Synonym: <i>Sabethinus intermedius</i> Lutz, 1904. Napo: Biological Reserve Colonso-Chalupas (75). (E).</p>
<p>169. <i>Sabethes (Sabethoides) chloropterus</i> (von Humboldt, 1819) †. Synonyms: <i>Culex chloropterus</i> Humboldt, 1819; <i>Sabethes confusus</i> Theobald; <i>Sabethes imperfectus</i> Bonne-Wepster and Bonne; <i>Sabethes rangeli</i> Surcouf and Gonzales-Rincones. Guayas: “Guayaquil River, near Borodan”; “Borodan” most likely refers to Samborondón, one of the cantons of Guayas province (92, 103). Babahoyo, Los Rios; About 30 km E of Montalo, “Hacienda. Mora” (01°45'49.2'' S, 079°14'12'' W) (16, 17). INSPI collection - Sucumbios: Cuyabeno, Reserva Cuyabeno ECU10717. (E, W).</p>
<p>170. <i>Sabethes (Sabethoides) glaucodaemon</i> (Dyar & Shannon, 1925). Synonym: <i>Sabethoides glaucodaemon</i> Dyar & Shannon, 1925. INSPI collection - Sucumbíos: Cuyabeno (0°13'4.53''S, 75°48'33.55''W) ECU10716; Sucumbíos: Shushufindi, La Invasión (0°11'57.03''S, 76°37'31.83''W) ECU7093. (NR, E).</p>
<p>171. <i>Trichoprosopon compressum</i> Lutz, 1905. Synonym: <i>Trichoprosopon compressum</i> var. <i>Mogilasium</i> from Panama. <i>Trichoprosopon compressum mogilasium</i> (Dyar and Knab, 1907). Los Ríos: Quevedo, 4km W of Valencia (1°01'S, 79°21'W), Guayas: Quevedo, about 30km SW of, 3km S of El Empalme (1°06'S, 79°41'W) (16). Esmeraldas: Alto Tambo (0°55'49.00''N, 78°32'37.00''W) (75). INSPI collection - Morona Santiago: Parroquia Macuma. Research Station Wisui ECU3516. Sucumbíos: Shushufindi ECU20474. (E, W).</p>
<p>172. <i>Trichoprosopon digitatum</i> (Rondani, 1848). Synonyms: <i>Culex digitatus</i> Rondani, 1848; <i>Joblotia subsplendens</i> Martini, 1931; <i>Trichoprosopon nivipes</i> Theobald, 1901; <i>Trichoprosopon splendens</i> Lutz, 1904; <i>Trichoprosopon wilsoni</i> Ludlow, 1918. Los Rios: Montalvo, 30 K E of Babahoyo, Hacienda Mora, across river at end of main path of Montalvo. (01°49'11.9''S, 079°31'07.8''W) Los Rios: Quevedo, 1 km E of Valencia. (01°00'00''S, 076°00'00''W) Sto. Domingo de los Tsachilas (formerly Pichincha), Valle Hermoso. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W), Los Ríos: Valencia, 1km E of Valencia; 4km W of Valencia (same coordinates for both records: 1°01'S, 79°21'W), Los Ríos:</p>

<p>Babahoyo, about 30km E of Montalvo (1°48'S, 79°20'W), Napo: Cuyabeno, about 50km W of "Tarapoa, Campamento, 5.5km N" (0°10'S, 76°20'W) (16, 17). Orellana: Yasuní National Park: Tiputini Biodiversity Station, Lago trail 2200 m (0°38'9.80''S, 76°9'51''W), Lago Trail 2000 m (0°38'15.54''S, 76°9'51.82''W), Harpía Trail 800 m (0°37'48.64''S, 76°8'43.81''W), Tower: Shannon trap (0°39'52.99''S, 76°12'54.00''W), Numa trail (0°38'15.50''S, 76°8'59.31''W), Tower (0°38'17'' S, 076°08'42'' W), Main camp (0°38'13.52''S, 76°9'0.33''W), Main Camp at Chorongo Trail (0°38'10.87''S, 76°8'55.40''W), Lago Trail 975 m (0°38'17.01''S, 76°9'22.21''W), Lago Trail 1400 m (0°38'14.94''S, 76°9'34.46''W), near Main Camp (0°22'15.14''S, 76°9'0.32''W) (4). INSPI collection - Morona Santiago: Macuma, Research Station Wisui ECU3517; Sucumbíos: Shushufindi ECU14842; Chimborazo: Cumandá ECU20208. (E, W).</p>
<p>173. <i>Trichoprosopon lampropus</i> (Howard, Dyar & Knab, 1913). Synonym: <i>Lesticocampa lampropus</i> Howard, Dyar & Knab, 1913. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Lago Trail 975 m (0°38'17.01''S, 76°9'22.21''W) (4). (E).</p>
<p>174. <i>Trichoprosopon lanei</i> (Antunes, 1937). Synonym: <i>Goeldia lanei</i> Antunes, 1937. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W). Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). (E).</p>
<p>175. <i>Trichoprosopon pallidiventer</i> (Lutz, 1905). Synonym: <i>Hyloconops pallidiventer</i> Lutz, 1905. Recorded as "new sp near pallidiventer, Orellana (formerly Napo): Coca, about 50km E of "Isla Pompeya" (island in Rio Napo at confluence with Río Jivino) (0°26'S, 76°37'W) (16). INSPI collection - Imbabura: Cachaco; Esmeraldas: San Francisco de Bogotá; Pichincha: Nanegalito ECU3257. (E, W).</p>
<p>176. <i>Trichoprosopon vonplesseni</i> (Dyar & Knab, 1906) †. Synonym: <i>Lesticocampa vonplesseni</i> Dyar & Knab, 1906. TYPE: Lectotype 9, Upper Pastaza River (Napo-Pastaza) (8, 16) INSPI collection – Sucumbíos: Shushufindi ECU14745; Morona Santiago: Río Blanco ECU11583. (E).</p>
<p>177. <i>Wyeomyia</i> (<i>Decamyia</i>) <i>pseudopecten</i> Dyar & Knab, 1906. Synonyms: <i>Dendromyia bicompressa</i> Lutz, 1928; <i>Wyeomyia cara</i> Dyar & Knab, 1909; <i>Wyeomyia eloisa</i> Howard, Dyar & Knab, 1912; <i>Wyeomyia galoa</i> Dyar & Knab, 1906. Orellana (formerly Napo): Coca, confluence of Rio Coca and Rio Napo (00°26'12'' S, 076°37'07.5'' W), Coca, about 50km of "Isla Pompeya" (island in Rio Napo at confluence with Rio Jivino) (both records with the same coordinates 0°26'S, 76°37'W) (16, 17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Main camp (0°38'13.52''S, 76°9'0.33''W; 0°38'8.99''S, 76°9'34.96''W) (4). (E).</p>

<p>178. <i>Wyeomyia</i> (<i>Decamyia</i>) <i>ulocoma</i> (Theobald, 1903). Synonyms. <i>Dendromyia ulocoma</i> Theobald, 1903; <i>Wyeomyia cacodela</i> Dyar & Knab, 1909; <i>Wyeomyia oindus</i> Dyar & Knab, 1909; <i>Wyeomyia pantoia</i> Dyar & Knab, 1909. Orellana: Yasuní National Park, Tiputini Biodiversity Station, main camp (0°38'13.52''S, 76°9'0.33''W), Matapalo trail 450 m (0°38'15.11''S, 76°8'50.43''W) (4). (E).</p>
<p>179. <i>Wyeomyia</i> (<i>Dendromyia</i>) <i>complosa</i> (Dyar, 1928). Synonym; <i>Dendromyia complosa</i> Dyar, 1928. Los Rios: Quevedo, Valencia, 1 km E of Valencia. (00°56'47''S, 079°20'10.5''W) Los Rios: Quevedo, 1km E of Valencia. (01°01'S, 79°21'W), Quevedo: about 10km SW of Pichilingue (1°06'S, 79°29'W), Cañar: Cochancay, 86km E of Guayaquil on Rt 8 (02°28'08.4'' S, 079°17'50.6'' W) (16, 17). Pichincha: San Miguel de los Bancos (0°01'25.37''N, 78°53'42.74''W) (5). (W).</p>
<p>180. <i>Wyeomyia</i> (<i>Dodecamyia</i>) <i>aphobema</i> Dyar, 1918. Synonyms: <i>Wyeomyia aequatorialis</i> (13); <i>Wyeomyia bodkini</i> Edwards, 1922. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Main camp (0°38'13.52''S, 76°9'0.33''W), Guacamayo Trail 2300m (0°38'2.42''S, 76°9'49.87''W), Chorong Trail 375 m (4). (E).</p>
<p>181. <i>Wyeomyia</i> (<i>Hystatomyia</i>) <i>lamellata</i> (Bonne-Wepster & Bonne, 1919). Synonym: <i>Histatomyia lamellata</i> Bonne-Wepster & Bonne, 1919. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Main Camp (00°38'17'' S, 076°08'42'' W) (4). (E).</p>
<p>182. <i>Wyeomyia</i> (<i>Miamyia</i>) <i>codiocampa</i> Dyar & Knab, 1907. Orellana: Yasuní National Park, Tiputini Biodiversity Station, near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00''S, 76°12'54.00''W), Maquisapa trail 6200 m (00°37'54.9''S, 076°09'58.4''W) (4). (E).</p>
<p>183. <i>Wyeomyia</i> (<i>Miamyia</i>) <i>oblita</i> (Lutz, 1904). Synonyms: <i>Dendromyia oblita</i> Lutz, 1904; <i>Miamyia pinto</i> Lima, 1930; <i>Wyeomyia fallax</i> Bonne-Wepster & Bonne, 1919. Orellana: Yasuní National Park, Tiputini Biodiversity Station, near Rio Tiputini (c. 8 km from Tiputini Biodiversity Station) (0°39'53.00''S, 76°12'54.00''W), Maquisapa trail 6200 m (00°37'54.9''S, 076°09'58.4''W) (4). Orellana: Yasuni National Park, on river tip ~8 km from Tiputini (00°39'53'' S, 076°12'54'' W) (17). (E).</p>
<p>184. <i>Wyeomyia</i> (<i>Nunezia</i>) <i>bicornis</i> (Root, 1928). Synonym: <i>Dendromyia bicornis</i> Root, 1928. Imbabura: Lita (0°52'11.83''N, 78°27', 05.56''W) (75) (W).</p>

185. <i>Wyeomyia albosquamata</i> Bonne-Wepster & Bonne, 1919. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Main Camp (00°38'17'' S, 076°08'42'' W), Guacamayo Trail 2300m (0°38'2.42''S, 76°9'49.87''W) (4). (W).
186. <i>Wyeomyia chalconecephala</i> Dyar & Knab, 1906. Synonym: <i>Wyeomyia luciae</i> Senevet & Chabelard, 1942. Subgenus uncertain. Los Rios: Quevedo, 1 km E of Valencia. Guayas: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4'' S, 079°17'50.6'' W). Guayas: Guayaquil, 12 km W of on Rt 3, 0.9 K; W of checkpoint on Rt 3, K 12 on Rt 3 (02°11'32.6'' S, 079°59'09.7'' W), Cañar: Cochancay, km 86 on Rt 8 from Guayaquil (02°28'08.4'' S, 079°17'50.6'' W) (16, 17). (W).
187. <i>Wyeomyia melanocephala</i> Dyar & Knab, 1906. Synonyms: <i>Dendromyia melanoides</i> Root, 1928; <i>Dendromyia typharum</i> Shannon & Ponte, 1927; <i>Prosopolepis hemisiris</i> Dyar & Shannon, 1925; <i>Sabethes canfieldi</i> Dyar & Knab, 1907; <i>Wyeomyia agnostips</i> Dyar & Knab, 1907; <i>Wyeomyia fauna</i> Dyar & Knab, 1919; <i>Wyeomyia grenadensis</i> Edwards, 1916; <i>Wyeomyia modalma</i> Dyar, 1922; <i>Wyeomyia pandora</i> Dyar & Knab, 1909. Uncertain subgenus. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W). Orellana (formerly Napo): About 50 km E of El Coca, Isla Pompeya (island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16, 17). (E).
188. <i>Wyeomyia (Wyeomyia) arthrostigma</i> (Lutz, 1905). Synonyms: <i>Dendromyia arthrostigma</i> Lutz, 1905; <i>Wyeomyia bromeliarum</i> Dyar & Knab, 1906; <i>Wyeomyia drapetes</i> Dyar & Knab, 1909; <i>Wyeomyia espartana</i> Dyar & Knab, 1906; <i>Wyeomyia panamena</i> Dyar & Knab, 1907. Orellana (formerly Napo): About 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16, 17). (E).
189. <i>Wyeomyia (Wyeomyia) celanocephala</i> Dyar & Knab, 1906. Synonyms: <i>Phoniomyia chrysomus</i> Dyar & Knab, 1907; <i>Phoniomyia philophone</i> Dyar & Knab, 1907; <i>Wyeomyia mataea</i> Dyar & Knab, 1908; <i>Wyeomyia megalodora</i> Dyar & Knab, 1908. Carchi: El Baboso (0°53'47.05''N, 78°26'34.98''W) (75). (W).
190. <i>Wyeomyia (Wyeomyia) medioalbipes</i> Lutz, 1904. Synonyms: <i>Wyeomyia telestica</i> Dyar & Knab, 1906; <i>Wyeomyia abascanta</i> Dyar & Knab, 1908. Orellana: Yasuni National Park, Tiputini Biodiversity Station, Tower (0°38'17.00'S. 76°8'42.00''W) (4). (E).

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<p>191. <i>Toxorhynchites (Lynchiella) bambusicola</i> Knight & Rozeboom, 1946. Synonyms: <i>Megarhinus aldrichanus</i> Bonne-Wepster & Bonne, 1919; <i>Megarhinus bambusicola</i> Lutz & Neiva, 1913. Orellana: Yasuní National Park, Tiputini Biodiversity Station, Maquisapa trail 6200 m (00°37'54.9''S, 076°09'58.4''W), Rio tiputini (6 km from Tiputini Biodiversity Station) (0°39'50.00''S, 76°12'56.01''W) (4). (E).</p>
<p>192. <i>Toxorhynchites (Lynchiella) guadeloupensis</i> (Dyar & Knab, 1906). Synonyms: <i>Megarrhina horei</i> Gordon & Evans, 1922; <i>Megarhinus tucumanus</i> Brèthes, 1926; <i>Megarhinus arborealis</i> Shannon & Ponte, 1927; <i>Megarrhina guianensis</i> Bonne-Wepster & Bonne, 1953. INSPI collection - Manabí: La Pila (1°6'43.28''S, 80°35'18.33''W) ECU11017. (NR, W).</p>
<p>193. <i>Toxorhynchites (Lynchiella) haemorrhoidalis</i> (Fabricius, 1787). Synonym: <i>Culex haemorrhoidalis</i> Fabricius, 1787. Orellana (formerly Napo): Coca, about 50 km E of “Isla Pompeya” (island in Río Napo at confluence with Río Jivino) (0°26'00''S, 76°36'60''W), about 50km W of “Tarapoa, Campamento J-C”, about 50km W of “Tarapoa, 200 m sur de la pista aerea” (0°10'00''S, 76°20'00''W) (16, 17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Chorong Trail 800 m (0°37'59.04''S, 76°9'2.02''W), Maquisapa Trail 7200 m (0°37'54.89''S, 76°9'58.37''W) (4). INSPI collection – Sucumbíos: Nueva Loja ECU16346. Sucumbíos: Shushufindi ECU14789. (E).</p>
<p>194. <i>Toxorhynchites (Lynchiella) hypoptes</i> Knab, 1907. Guayas: Guayaquil, 12 km W of on Rt. 3. (2°11'20.73''S, 79°59'1.73''W). Manabi: Portoviejo (01°03'S, 080°27'W) (16). (W).</p>
<p>195. <i>Toxorhynchites (Lynchiella) theobaldi</i> (Dyar & Knab, 1906). Synonyms: <i>Culex ferox</i> Wiedemann, 1828; <i>Megarhinus ambiguus</i> Dyar & Knab, 1906; <i>Megarhinus moctezuma</i> Dyar & Knab, 1906; <i>Megarhinus theobaldi</i> Dyar & Knab, 1906; <i>Megarhinus trinidadensis</i> Dyar & Knab, 1906; <i>Megarhinus wiedemanni</i> Dyar & Knab, 1906. Manabi: Portoviejo (01°03'01.4''S, 080°27'01.5''W), Guayaquil; 12 Km W Of On Rt 3: 0.9 K; W Of checkpoint on Rt 3; K 12 on Rt 3 (17). INSPI collection – Esmeraldas: Tonsupa ECU11472. (W).</p>
<p>196. <i>Uranotaenia (Uranotaenia) calosomata</i> Dyar & Knab, 1907. Synonym: <i>Uranotaenia albitarsis</i> Gordon & Evans, 1922. Orellana (formerly Napo): Coca, confluence of Coca River and Napo River, 250 m (00°28'12'' S, 076°58'07.5'' W) (16, 17). Orellana: Yasuní National Park, Tiputini Biodiversity Station, Lake (c. 4 hectares) (0°38'13.52''S, 76°9'0.33''W) (4). INSPI collection – Loja: Chaguarpamba ECU4385. (E).</p>
<p>197. <i>Uranotaenia (Uranotaenia) ditaenionota</i> Prado, 1931. Synonym: <i>Uranotaenia burkii</i> Lane, 1936. INSPI collection - El Oro: Marcabellí, Aguas Negras (3°47'6.10''S, 79°54'44.37''W) ECU4911. (NR, W).</p>

198. *Uranotaenia (Uranotaenia) geometrica* Theobald, 1901. Guayas: Guayaquil and its surroundings (8). Orellana (formerly Napo): about 50 km E of El Coca, "Isla Pompeya"(island in Rio Napo at confluence with Rio Jivino) (00°26'12'' S, 076°37'07.5'' W) (16). Sto. Domingo de los Tsachilas (formerly part of Pichincha): Valle Hermoso, near Hosteria (00°05'06''S, 079°16'35''W). Orellana: Yasuni National Park, Tiputini Biodiversity Station (00°38'13.5'' S, 076°09'0.3'' W) (17). (E, W).

199. *Uranotaenia (Uranotaenia) leucoptera* (Theobald, 1907). Synonym: *Anisocheleomyia leucoptera* Theobald, 1907. INSPI collection – Sucumbíos: Nueva Loja ECU13915. (E).

200. *Uranotaenia (Uranotaenia) lowii* Theobald, 1901. Synonyms: *Uranotaenia continentalis* Dyar & Knab, 1906; *Uranotaenia minuta* Theobald, 1907; *Uranotaenia monilis* Shannon & Ponte, 1927. Los Rios: Babahoyo 5 km W of, 50m. Guayas: Chongon, 24 km W of Guayaquil on Rt. 3 near road to Chongon (02°13'10.5''S, 080°05'05.6''W). Guayas: Guayaquil, 10 km W of on Rt. 3 (02°11'32.6''S, 079°58'05''W). Esmeraldas: near Atacames (00°52'40'' N, 079°49'47'' W) (16, 17). INSPI collection – El Oro: Huaquillas ECU20195. (W).