

Annotated checklist, distribution, and taxonomic bibliography of the mosquitoes (Insecta: Diptera: Culicidae) of Argentina

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Abstract: A decade and a half have passed since the last publication of the mosquito distribution list in Argentina. During this time several new records have been added, and taxonomic modifications have occurred at the genus and subgenus level. Therefore, considering these changes, I decided to create an updated list of the 242 species present in Argentina, along with their distributions by province. Two first records for Argentina (*Culex lopesi* and *Cx. vaxus*), two old records unregistered by authors (*Cx. albinensis* and *Wyeomyia fuscipes*), 13 new provincial records for 11 species (*Cx. apicinus*, *Cx. bidens*, *Cx. eduardoi*, *Cx. lahillei*, *Cx. pipiens*, *Cx. tatoi*, *Cx. usquatus*, *Cx. imitator*, *Cx. oedipus*, *Sabethes chloropterus*, and *Wy. oblita*), and the extension of distribution of other species are presented. The list of literature references for the documents concerning mosquitos is included.

Key words: mosquitoes, Neotropical Region, Argentina, checklist, new records, inventory

INTRODUCTION

Mosquitos are perhaps the most significant of the haematophagous insects impacting human and animal health. They act as vectors of numerous diseases such as dengue, yellow fever, malaria, and arboviruses responsible for encephalitis, bacteriosis, and helminthiasis.

The last update dating back more than 25 years and including all the then-available information regarding the Argentine mosquito fauna was carried out by Mitchell and Darsie (1985) and encompassed the distribution of 208 species reported for 22 provinces. Campos and Maciá (1998) completed the information gathered in those years, thereby increasing the number of species to 211.

Since 1998, the number of species and their distribution have changed significantly thus warranting a new update. Biological, ecological, taxonomic, and

epidemiological studies have increased the number of species known from various localities, greatly expanding the information on the distribution within the country. The last reference to the number of species found in Argentina at the present, was mentioned by Visintin et al. (2010) who raised the number to 228 species.

The aim of this report is to update the list of mosquito species and their distribution in Argentina by provinces, to correct existing record errors, to note recent taxonomic changes, and to present a full bibliography for use as a tool for researchers.

MATERIALS AND METHODS

Based on the Campos and Maciá (1998) list a data matrix was developed. The records presented here come from the collection of the Museo de La Plata (MLP), Buenos Aires, Argentina. I also considered changes in taxonomic level (i.e., the establishment and/or relocation of subgenera, synonyms, the revalidation of species) that are relevant exclusively to the Argentine fauna. Table 1 presents the list of mosquito species in alphabetical order and their distribution by province. Figure 1 present the provinces of Argentina and the number of species known from each province in 1998 and in 2014. I do not discuss the relevant literature and status changes since that information has been included by the authors in the respective publications.

The determinations were done by the author, except where indicated. The abbreviations used here are: M, male; F, female; L, larva; P, pupa; Le, larval exuviae; Pe, pupal exuviae; MG, male genitalia; and FG, female genitalia. Adults are mounted on pins and the immatures and the genitalia on Canada-balsam slides. The coordinates are given in the degree-minute-second format for the exact sampling site. In other instances (e.g., old records) the coordinates correspond to the locality and are given as degree-minutes. All coordinates correspond to the WGS 84 system. Voucher specimens are deposited in the MLP, the institutional catalogue

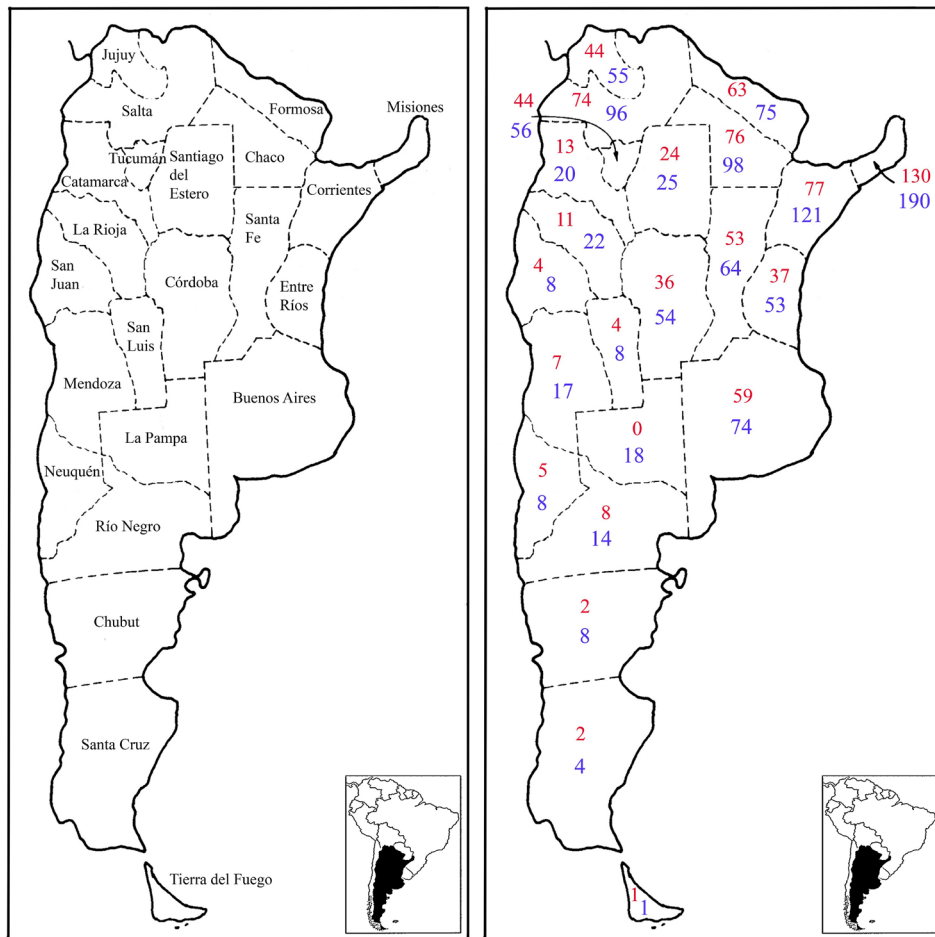


Figure 1. Left: Provinces of Argentina. **Right:** numbers of species known from each province, up to 1998 (red) and to March 2014 (blue).

number of the vouchers is indicated as (C-xxxx). The method of capture is indicated as follows: for adults, (net) for hand net, (CDC) for CDC-type traps and for immatures, (dip) dipper, with no indication of when the method is unknown.

An asterisk in the literature list indicates the publications used here. Abbreviations of genera and subgenera follow Reinert (2009), the species classification used is taken from Harbach (2014) and Wilkerson et al. (2015) for tribe Aedini.

RESULTS

First records for Argentina

Culex (Melanoconion) lopesi Sirivanakarn and Jakob, 1979. **Misiones province:** Bernardo de Irigoyen ($26^{\circ}14'45''$ S, $053^{\circ}38'56''$ W), 1M, 1 MG (CDC) (C-2963), 3/XII/2006, D'Oria, M. coll.; Iguazú National Park ($25^{\circ}40'32''$ S, $054^{\circ}26'49''$ W), 2 F, (CDC) (C-DS-08, DS-04 (provisory)), 29/V/2006, Lestani, E. coll.

Culex (Melanoconion) vaxus Dyar, 1920. **Corrientes province:** Ituzaingó ($27^{\circ}34'29''$ S, $056^{\circ}40'17''$ W), 17 M, 17 MG (C-1801/18), 22/IV/1996; Santa Tecla ($27^{\circ}36'36''$ S, $056^{\circ}24'21''$ W) 1 M, 1 MG (C-1711), 20/II/1996; idem, 1 M, 1 MG (C-1711), 20/III/1996; idem, 5 M, 5 MG (C-1239/40),

17/VI/1994; idem, 1 M, 1 MG (C-1290), 12/7/1994; idem, 1 M, 1 MG (C-1663), 20/III/1996, all (CDC) and G. Rossi coll.; Itá Ibaté, ($27^{\circ}25'18''$ S, $057^{\circ}19'35''$ W), 1 M, 1 MG (C-1124), all (CDC), G. Rossi coll. **Entre Ríos province:** Concordia, Puerto Luis, ($31^{\circ}15'3''$ S, $057^{\circ}57'24''$ W), 1 M, 1 MG (CDC) (C-0126), 19/2/1992, G. Rossi and J. Schanck colls. **Misiones province:** Martires stream ($27^{\circ}21'53''$ S, $055^{\circ}57'18''$ W), 1 M, 1 MG (C-1073), 14/II/1994; idem, 1 M, 1 MG (C-1131), 11/IV/1994; idem, 1 M, 1 MG (C-1253), 11/VI/1994, all (CDC), G. Rossi and D. Carpintero colls.; Zaiman Stream ($27^{\circ}24'37''$ S, $055^{\circ}53'37''$ W), 1 M, 1 MG (C-1130), 11/IV/1994; idem, 1 M, 1 MG (C-1064), 17/XI/1994, D. Carpintero coll.; idem, 1 M, 1 MG (C-931), 1/IV/1996, all (CDC), G. Rossi coll.; Corpus, Puerto Maní ($27^{\circ}06'22''$ S, $055^{\circ}31'19''$ W), 12 M, 12 MG (C-1713/26, 14-18/III/1996; idem, 10 M, 10 MG (C-3048/57), 11/IV/1996; idem, 2 M, 2 MG (C-1614, 1616), 24/IV/1996, all (CDC) and G. Rossi coll.; idem, 3 M, 3 MG (CDC) (C-0842/44), 19/II/1997, F. Krsticevic coll.; idem, 1 M, 1 MG, 1 H, 1 Pe, 1 Le, (dip) (C-0954/55), 16/X/1998, N. Pascual coll.; Candelaria ($27^{\circ}26'57''$ S, $055^{\circ}43'58''$ W), 1 M, 1 MG (C-1447), 11/XII/1995; idem, 1 M, 1 MG (C-1602), 14/III/1996, both (CDC), G. Rossi and F. Krsticevic colls.; Itaembé ($27^{\circ}21'20''$ S, $056^{\circ}1'57''$ W), 1 M, 1 MG, 14/VIII/1995, G. Rossi coll.; Montecarlo port ($26^{\circ}35'57''$

S, 054°46'40" W), 1 M, 1 MG (C-1077), 14/II/1994, all (CDC), D. Carpintero coll.

New provincial records

Culex (Cux.) apicinus Philippi, 1865. **Misiones province:** Iguazú (25°35' S, 054°35' W), 1 M, 2 F (C-2998/3000), X/1965, Inst. Nac. Microbiol. coll. Posadas, Villa Cabello (27°21' S, 055°55' W) and, Miguel Lanus (27°25' S, 055°52' W), more than one thousand larvae captured by *Brigada anti aegypti* (Posadas Municipality) coll., E. Gauto, G. Rossi det.

Culex (Cux.) bidens Dyar, 1922. **La Pampa province:** Santa Rosa, (36°37' S, 064°18' W), 2 M, 2 MG, (net) (C-2914 and 2936), V/1986, D. Carpintero coll.

Culex (Cux.) eduardoi Casal and García, 1968. **Corrientes province,** Santa Tecla (27°36'36" S, 056°24'21" W), 2 M, 2 MG (CDC) (C-1250-51), 17/VI/1994, G. Rossi coll.

Culex (Cux.) lahillei Bachmann and Casal, 1962. **Corrientes province,** San Nicolás (farm), (28°39'21" S, 057°26'04" W), 1 F (net) (C-2782), 16/IX/2009, G. Spinelli coll. **Santa Fé province,** Rosario (32°57' S, 060°37' W), 1 F, (net) (C-2993), X/1996, D. Carpintero coll.

Culex (Cux.) pipiens Linnaeus, 1758 (hybrids form). **Corrientes province,** Paso de los Libres (29°42' S, 057°5' W), 1 M, 1 MG, (C-2974), 19/VII/1967, J. P. Duret coll.

Culex (Cux.) tatoi Casal and García, 1971. **Corrientes province,** Monte Caseros, National Route 14 and the bridge over the Mocoreta river (30°37'38" S, 057°58'56" W), 1 M 1 MG (CDC) (C-0021), 18/V/1989, Marino, H., A. Maciá coll.; Santa Tecla (27°36'36" S, 056°24'21" W), 2 M, 2 MG (C-1109, 1112), G. Rossi coll.; Ituzaingo (27°34'29" S, 056°40'17" W), 1 M, 1 MG, (C-1509), 14/II/1996; idem, 6 M, 6 MG (C-1510, 1538, 1660, 1788, 1792, 1795), 24/VI/1996, all (CDC), G. Rossi coll.; Villa Olivari (27°36'11" S, 056°45'48" W), 1 M, 1 MG (C-1667), 22/V/1996; idem, 2 M, 2 MG (C-1523, 1526), 24/VI/1996, (CDC) G. Rossi coll. **Misiones province,** Candelaria, (27°26'57" S, 055°43'58" W), 5 M, 5 MG, 3 H, 3 Pe, (dip), 24/VI/1996, F. Krsticevic coll.; Corpus, Puerto Maní, (27°06'22" S, 055°31'19" W), 1 M, 1 MG, 14/III/1996, (CDC), G. Rossi coll.

Culex (Cux.) usquatus Dyar, 1918. **Corrientes province,** Santa Tecla (27°36'36" S, 056°24'21" W), 1 M. 1 MG (CDC) (C-1241), 17/VI/1994, G. Rossi coll.

Culex (Mcx.) imitator Theobald, 1903. **Salta province,** San Ramón de la Nueva Orán (23°07' S, 064°18' W) 1 M, 1 MG, (C-2923), XI/1963, H. Hepper coll.

Culex (Mel.) oedipus Root, 1927. **Corrientes province,** Monte Caseros, (30°15'43" S, 057°39'8" W), 7 M, 7 MG, 5 F, 11 Pe (dip, reared) (C-0038/0049), 7/IX/1989, J. Schnack coll.

Sabethes (Sbo.) chloropterus von Humboldt, 1819. **Santa Fé province,** Villa Guillermina (28°13' S, 059°26' W), 5 F, (C-3011 (2 spec.), C-3248 (3 spec.)) (net), 5/V/1949, Inst. Nac. Microbiol. coll.

Wyeomyia (Mya.) oblita (Lutz, 1904). **Tucumán province,** Horco Molle (26°46' S, 065°19' W), 1 F, (C-3012), XI/1960, Inst. Nac. Microbiol. coll.

Extent of distribution within the provinces

Anopheles (Nys.) albitarsis Lynch Arribálzaga, 1878. **Buenos Aires province,** Tandil (37°20'13" S, 059°07'58" W), 1 M (lighth trap) (C-2940), II/2003, P. Dellapé coll.

Anopheles (Ano.) annulipalpis Lynch Arribálzaga, 1878. **Entre Ríos province,** Concepción del Uruguay (32°30' S, 58°14' W), 1 F (C-2984), V/1969, Hepper H. coll. **Misiones province:** Wanda (25°58' S, 054°36' W), 3 F (C-2981/83) MLP, VIII/1972, H. Hepper coll. **Salta province:** Tartagal (22°31' S, 063°46' W), 1 F, (C-2980), IX/1963, H. Hepper coll.

Anopheles (Nys.) argyritarsis Robineau-Desvoidy, 1827. **Misiones province:** Iguazú, Cabureí (25°40' S, 054°08' W), 1 F (C-3041), X/1989, D. Carpintero (Sr.) coll.

Anopheles (Nys.) darlingi Root, 1928. **Corrientes province:** Itá Ibaté (27°25' S, 057°19' W), 7 L (dip), (C-0924/30). X, XII/1997 and I/1998, Vallejos and Losokan (MSP) colls.

Anopheles (Nys.) parvus Chagas, 1907. **Misiones province:** Bernardo de Irigoyen (26°14'47" S, 053°38'56" W), 1 F (CDC) (C-2973), 3/XII/2006, M. D'Oría coll.

Culex (Ads.) amazonensis (Lutz, 1905). **Misiones province:** Puerto Maní, Corpus (27°06'22" S, 055°31'19" W), 1 M, 1 MG (CDC) (C-3045), 11/IV/1996, G. Rossi coll.

Culex (Car.) soperi Antunes and Lane, 1937. **Misiones province:** Wanda (25°58' S, 054°36' W), 1 M (C-2760), 01/VIII/1994, D. Carpintero (Sr.) coll. and det.

Culex (Cux.) apicinus Philippi, 1865. **Mendoza province:** Las Heras, San Ramón (32°51' S, 68°47' W) 1 F (C-2995), X/1983, D. Carpintero (Sr.) coll; **Salta Province,** Tartagal (22°31' S, 063°46' W), 1 M, 1 MG, IX/1963, H. Hepper coll.

Culex (Cux.) brethesi Dyar, 1919. **Corrientes province:** Rincón del Socorro farm (28°40'44" S, 057°26'06" W), 1 M, 1 MG (net) (C-2776), 5/IX/2009, G. Spinelli coll.

Culex (Cux.) cuyanus Duret, 1968. **Mendoza province:** Jocolí and National Route 40 (32°41' S, 068°40' W), 1 M, 1 MG (C-2294), 9/XI/1983; accessing Mendoza on National Route 40 (32°78' S, 068°74' W), 1 H C-3036), 9/XI/1983, Carpintero, D. coll.

Culex (Cux.) chidesteri Dyar, 1921. **Chaco province:** Tres Estacas (26°54'57" S, 061°36'50" W), 2 F (C-3005/06) (human bait), 9/VII/2011, G. Marti and A. Balsalobre colls.

Culex (Cux.) fernandezi Casal, García and Cavallieri, 1966. **Salta province:** Tartagal (22°31' S, 063°46' W, 478 masl), 1 F (C-2992), 1/IX/1963, H. Hepper coll.

Culex (Mel.) serratimarge Root, 1927. **Corrientes province:** Batel stream and bridge at route 6 (28°17'40" S, 058°01'50" W, 65 masl), 2 M, 2 MG, (net) (C-2946, 3829), 8/XII/2010, G. Spinelli, G. Rossi colls.

Psorophora (Pso.) holmbergi Lynch Arribálzaga, 1891. **Buenos Aires province:** Olavarría (36°52' S, 060°18' W), 1 F (human bait) (C-2768), XI/2011, Rural Zoonosis (Buenos Aires Province) coll.

Psorophora (Pso.) pallescens Edwards, 1922. **Santiago del Estero province:** Termas de Río Hondo (27°29' S, 064°50' W), 1 F (C-2929), VIII/1971, without other data.

Wyeomyia serratoria Dyar and Nuñez Tovar, 1927. **Misiones province:** Bernardo de Irigoyen (26°14'47" S, 053°38'56" W), 1 F (CDC) (C-2969), 3/XII/2006, M. D 'Oria coll.

Records omitted from the literature after 1989

Wyeomyia (Pho.) fuscipes (Edwards, 1922). **Misiones province:** Eldorado, Piray Guazú stream and Natinal Route 12 (26°28' S, 054°39' W), 1 F, (net), 23/VI/1965, García and Casal colls. and det.

Culex (Mel.) albinensis Bonne Wepster & Bonne, 1920. **Santa Fe province:** Vera Dept.: Vera, (29°28' S, 60°13' W) 25/XI/80, (CDC), 1 M, 1 MG; Las Colonias Dept.: marsh, Esperanza (31°28' S, 060°47' W), 15/XI/80, (CDC), 1 M, 1 MG, M. Sabattini and J. Daffner colls, S. Sirivanakarn det.

DISCUSSION

Forattini and Sallum (1993) considered *Cx. vaxus* a valid species in its own right and removed it from synonymy with *Cx. educator*. According to those authors *Cx. vaxus* occupied the area between Suriname and Argentina but was not present in Central America, though they recommended a review of the museum specimens to establish the distribution of both species. I reviewed the material of the MLP collection corresponding to the provinces of Corrientes and Misiones (Rossi et al. 2002) and concluded that they corresponded those cited by Forattini and Sallum. For this reason in those provinces the assignment of *Cx. educator* should be replaced by *Cx. vaxus*. The mention made of *Cx. educator* in the Formosa province by Darsie et al. (1991) and Hoyos et al. (2011), in Córdoba and Chaco provinces by Visintin et al. (2009, 2010, respectively), and in Misiones province by Duret (1953, 1954) and Castro (1959) should be reviewed since those sightings could possibly have corresponded to *Cx. vaxus*.

Specimens of the province of Misiones captured by E. Lestani part of the catch for the development of his doctoral thesis, therefore *Cx. lopesi* have temporary numbers in the institutional catalogue number of the vouchers.

An. guarani (Table 1), has been recently revalidated from the incorrect synonymy with *An. lutzii* (Nagaki et al. 2011). That species was previously registered in the province by Duret (1950) and was more recently reported by Rossi and Lestani (2014) as present in Puerto Iguazú and Esmeralda Provincial Park in Misiones province. Specimens from San Ignacio, Corpus, Puerto Maní, Iguazú National Park, Posadas, and Puerto Rico (all

Misiones province), originally classified as *An. lutzii* and belonging to the MLP collection, were reviewed. Since their characteristics correspond to those of *An. guarani*, the latter is the species present in these localities. Appointments for other locations such as Iguazú National Park, Montecarlo, Eldorado, Puerto Piray, Colonia Caraguatay, Las Delicias, and Los Helechos (Duret, 1950) were specimens not reviewed by me and thus remain to be checked.

Darsie (1985), Mitchell and Darsie (1985), and Campos and Maciá (1998) have omitted consigning the record of *Wy. (Pho.) fuscipes* in Eldorado, Misiones registered by García and Casal (1968), in the absence of considering other records that appeared in the same publication. In fact this appointment configures the first record of the species for Argentina. *Culex. albinensis* is present in Santa Fe according to data presented by Sirivanakarn and Jakob (1981), a province that was omitted by Darsie (1985), Mitchell and Darsie (1985), and Campos and Maciá (1998) in their three publications.

Recently, Micieli et al. (2013) reported the presence of *Culex (Cux.) pipiens* form *molestus* Forskal in the Buenos Aires province, whose identity was confirmed by molecular markers (microsatellites). Being fully aware of the presence of hybrid forms between *Cx. pipiens* and *Cx. quinquefasciatus* in other provinces (Almirón et al. 1986, 1995; Morais et al. 2010; Diez et al. 2011), we decided to examine the specimens in the MLP collection and together with the aforementioned literature citations added the *Cx. (Cux.) pipiens* hybrid forms in Table 1 as separate from *Cx. pipiens* and *Cx. quinquefasciatus*. Clearly, not all specimens in the MLP collection can be differentiated with certainty. These hybrid forms are currently referred to as "Pipiens Complex". Harbach (2012) suggested that the term should be "Pipiens Assemblage" instead of "Complex" by non having the same meaning as used for species of the genus *Anopheles*.

The records of *Cx. mollis* in different provinces should be reviewed, given that species' similarity to *Cx. tatoi*. The two species can be distinguished by the male-genitalia features and by the larval habitat. The *Cx. mollis* larvae are primarily found in natural containers (holes in trees or rocks), whereas the *Cx. tatoi* larvae are found in areas of appreciable water. The *Cx. mollis* assignments of the Corrientes and Misiones provinces in Rossi et al. (2002) were subsequently replaced by *Cx. tatoi*.

For *An. albitarsis*, the city of Tandil (Buenos Aires province), most notably, marks the southernmost region where specimens have been found within the genus *Anopheles*, and an Olavarría (Buenos Aires province) sighting is the southernmost identification for *Ps. holmbergi*.

With respect to *An. annulipalpis*, Carcavallo et al. (1995) recorded the species as being present in the Salta province without providing other data.

The presence of *An. darlingi* in the Corrientes

province, clarifies that the few records referred to in the literature correspond to very small scale maps and, moreover, without any reference to the location in the text (e.g., García and Ronderos 1962; Bejarano 1972), or only to specific provinces (Mitchell and Darsie 1985). These authors mentioned as present at *An. darlingi* in Entre Ríos province as quoted by Bejarano (1959 (1960)) but this author does not mention the province in the reference's work, or other papers dealing with the subject. Thus, *An. darlingi* cannot be considered its presence on the province.

As to *Ps. pallescens*, the only sighting recorded in the province of Santiago del Estero corresponds to the location of Troncal, 40 km from Salavina (Duret 1951) and more than 200 km from Termas de Río Hondo.

The record of *Cx. fernandesi* and *Ae. (Och.) patersoni* in the Misiones province (Lestani et al. 2007) was an error in determination. These specimens, in fact, correspond to the *Cx. dolosus* Complex and to *Ae. (Och.) rhyacophilus*, respectively. Recently, Wilkerson et al. (2015) propose simplified aedine generic designations and restore the classic classification system keeping only some of the changes proposed by them. (See Table 1 for classification of argentine species).

The record of *Cx. imitator* in the Buenos Aires province (Ronderos et al. 1992) is an erroneous assignment because specimens of the collection in the MLP cannot be classified to the level of the species, may belong to the subgenus *Melanoconion* of *Culex*. Thus, *Cx. imitator* cannot be considered its presence in the province.

The following provincial records were taken from the abstracts of congresses (e.g., *Jornadas Regionales sobre Mosquitos*), but these recordings have not appeared in subsequent publications: *Cq. albicosta* (Peryassú) and *Cq. fasciolata* (Lynch A.) in the Corrientes province (Molina 2002); *Cx. apicinus* and *Cx. chidesteri* in the San Juan province (Murúa et al. 2005); and *Cx. rooti* and *Cx. mollis* in the Chaco province (Stein et al. 2002). Leguizamón (1997) mention as “present in Argentina” the subgenus *Stethomyia* of *Anopheles* and *Ctenogoeldia* of *Runchomyia* without any other comment or detail, and also *Johnbelkinia leucopus* (Dyar & Knab) “from the jungle of the Salta province (Orán)”. *Stethomyia* is not very likely to be found in northern Argentina as one of the species has been in Bolivia, and the possibility of finding representatives of *Ru. (Ctenogoeldia)* or *Jb. leucopus* (Dyar & Knab) inhabiting northern South America and Central America, respectively, is highly unlikely. Moreover, the author has not published on the subject, while the current investigators do not mention its presence despite their working in Orán, Salta (Dantur Juri, et al. 2011; Mangudo et al. 2014). For these reasons, those data are not included in the list of mosquitoes present in Argentina.

Onirion brucei (Del Ponte & Cerqueira) is known to

be present in the Misiones province, but Harbach and Peyton (2000), on describing the genus, mentioned one female in “Corrientes, Les Piedias, XII.66, Duret (USNM)”. This location is unknown.

Mitchell and Darsie (1985) recorded 208 species of mosquitos in Argentina, but added that they had not taken into account *Aedes aegypti* L. records, not present at that time. Campos and Maciá (1998) brought that total number up to 211 species distributed within 20 genera. Probably some publications either had been lost or had not reached the authors in time—such as Sallum et al. (1988); Rossi (1997); Rosa Freitas (1998) since the manuscript was submitted in 1997. Moreover, small errors in detail have been found in certain assignments—as one mistake subsequently corrected by Mitchell and Darsie (1985) with respect to *Ps. varipes* (Coquillett), along with typographical errors (*Sa. intermedius* in Buenos Aires, *Ps. ferox* in Santa Cruz) The real number of species in Argentina in 1998 was 217.

I have kept species in the list that are of doubtful presence, until the appropriate specimens have been reviewed, e.g., *Cx. educator/Cx. vaxus* (cf. above) and *Cx. mollis/Cx. tatoi* (cf. Casal and García, 1971).

The records that have been added here are the following: two first records for Argentina, 11 new records for different provinces, two records omitted, and an expansion of the distribution of 16 species. Consequently, including these new data, a total of 242 mosquito species, distributed over 23 provinces, are represented in Argentina (Table 1 and Figure 1).

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To the reference list submitted by Mitchell and Darsie (1985) and Campos and Maciá (1998) are added any publications overlooked at that time plus those articles appearing from 1998 to present. An asterisk (*) indicates those used in this paper.

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Table 1. Distribution by province of mosquitoes present in Argentina. The provinces represented by the numbers: 1: Buenos Aires, 2: Catamarca, 3: Chaco, 4: Chubut, 5: Córdoba, 6: Corrientes, 7: Entre Ríos, 8: Formosa, 9: Jujuy, 10: La Pampa, 11: La Rioja, 12: Mendoza, 13: Misiones, 14: Neuquén, 15: Río Negro, 16: Salta, 17: San Juan, 18: San Luis, 19: Santa Cruz, 20: Santa Fe, 21: Santiago del Estero, 22: Tierra del Fuego, 23: Tucumán.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Aedeomyia (Aedeomyia) squamipennis</i> (Lynch Arribalzaga, 1878) | * | | | | | | | | | | | | | | | * | | | | | | | * |
| <i>Aedes (Geograigius) fluviatilis</i> (Lutz, 1904) | | | | | | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Howadina) aurivittatus</i> Cerqueira, 1943 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Howadina) martinezi</i> Berlin, 1969 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Howadina) pseudodominicci</i> Komp, 1936 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Howadina) vanemdeni</i> Martini, 1931 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) albifasciatus</i> (Macquart, 1838) | * | * | * | * | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) crinifer</i> (Theobald, 1903) | * | * | * | * | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) fulvus</i> (Wiedeman, 1828) | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) hastatus</i> Dyar, 1922 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) jorgi</i> Carpintero & Leguizamón, 2000 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) meprai</i> Martínez & Prosen, 1953 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) milleri</i> Dyar, 1922 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) nubilis</i> Theobald, 1903 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) oligopistus</i> Dyar, 1918 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) patersoni</i> Shannon & del Ponte, 1927 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |
| <i>Aedes (Ochlerotatus) pennai</i> Antunes & Lane, 1938 | | | | | * | * | * | * | * | | | * | * | * | | | | | | | | | * |

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Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Aedes (Ochlerotatus) raymondi</i> Del Ponte, Castro & García, 1951 | | | | | | | | * | | | | | | | | | | | | | | | |
| <i>Aedes (Ochlerotatus) rhyacophilus</i> Da Costa Lima, 1933 | | | | | | | | | | | | | * | | | | | | | | | | |
| <i>Aedes (Ochlerotatus) scapularis</i> (Rondoni, 1848) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Aedes (Ochlerotatus) serratus</i> (Theobald, 1901) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Aedes (Ochlerotatus) stigmaticus</i> Edwards, 1922 | | | | | | | | * | | | | | | | | | | | | | | | |
| <i>Aedes (Ochlerotatus) synchyttus</i> Arnell, 1976 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Aedes (Stegomyia) aegypti</i> (Linnaeus, 1762) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Aedes (Stegomyia) albopictus</i> (Skuse, 1895) | | | | | | | | | | | | | * | | | | | | | | | | |
| <i>Aedes subgenus uncertain casali</i> Schick, 1970 | | | | | | | | | | | | | * | | | | | | | | | | |
| <i>Aedes subgenus uncertain terreus</i> (Walker, 1856) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Anopheles) annulipalpis</i> Lynch Arribalzaga, 1878 | | | | | | | | * | | | | * | | | | | | | | | | | |
| <i>Anopheles (Anopheles) apicimacula</i> Dyar & Knab, 1906 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Anopheles) evandroi</i> Da Costa Lima, 1937 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Anopheles) fluminensis</i> Root, 1928 | | | | | | | | * | | | | | | | | | | | | | | | |
| <i>Anopheles (Anopheles) intermedius</i> (Peryassú, 1908) | | | | | | | | * | | | | | | | | | | | | | | | |
| <i>Anopheles (Anopheles) maculipes</i> (Theobald, 1903) | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Anopheles) mediopunctatus</i> (Theobald, 1903) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Anopheles) minor</i> Da Costa Lima, 1929 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Anopheles) neomaculipalpus</i> Curry, 1931 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Anopheles) pseudopunctipennis</i> Theobald, 1901 | | | | | | | | * | | | | * | | | | | | | | | | | |
| <i>Anopheles (Anopheles) punctimacula</i> Dyar & Knab, 1906 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Anopheles) tibiamaculatus</i> (Neiva, 1906) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Kerteszia) bambusicolus</i> Komp, 1937 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Kerteszia) cruzi</i> Dyar & Knab, 1908 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Kerteszia) laneanus</i> Correa & Cerqueira, 1944 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) albitarsis</i> Lynch Arribalzaga, 1878 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Anopheles (Nyssorhynchus) antunesi</i> Galvao & Amaral, 1940 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) argyritarsis</i> Robineau-Desvoidy, 1827 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) braziliensis</i> (Chagas, 1907) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) darlingi</i> Root, 1928 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) deaneorum</i> Rosa-Freitas, 1989 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) evansae</i> (Brethes, 1926) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) galvaoui</i> Causey, Deane & Deane, 1943 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) guarani</i> Shannon, 1928 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) lutzii</i> Cruz, 1901 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) nigritarsis</i> (Chagas, 1907) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) nuneztovari</i> Gabaldon, 1940 | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) oswaldoi</i> (Peryassú, 1922) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) parvus</i> (Chagas, 1907) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) pictipennis</i> (Philippi, 1865) | | | | | | | | * | | | | | * | | | | | | | | | | |
| <i>Anopheles (Nyssorhynchus) rangeli</i> Gabaldon, Cova-García & López, 1940 | | | | | | | | * | | | | | * | | | | | | | | | | |

Continued

Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Anopheles (Nyssorhynchus) rondoni</i> (Neiva & Pinto) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Anopheles (Nyssorhynchus) strodei</i> Root, 1926 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Anopheles (Nyssorhynchus) triannulatus</i> (Neiva & Pinto, 1922) | * | | * | | * | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Chagasia fajardi</i> (Lutz, 1904) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) albicosta</i> (Peryassú, 1908) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) albifera</i> (Prado, 1931) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) chrysonotum</i> (Peryassú, 1922) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) fasciolata</i> (Lynch Arribalzaga, 1891) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) hermanoi</i> (Lane & Coutinho, 1940) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) juxtamazonia</i> (Chagas, 1907) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) neivai</i> (Lane & Coutinho, 1940) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) nigricans</i> (Coquillett, 1904) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) shannoni</i> (Lane & Antunes, 1937) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Coquillettidia (Rhynchoataenia) venezuelensis</i> (Theobald, 1912) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Aedinus) amazonensis</i> (Lutz, 1905) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Allimanta) trazaiguasi</i> Duret, 1954 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Anoediopora) cananensis</i> Lane & Withman, 1943 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Anoediopora) chaguanco</i> Casal, García & Fernandez, 1968 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Anoediopora) originator</i> Gordon & Evans, 1922 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Anoediopora) soperi</i> Antunes & Lane, 1937 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) acharistus</i> Root, 1927 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) ameliae</i> Casal, 1967 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) apicinus</i> Philippi, 1865 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) articularis</i> Philippi, 1865 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) bidens</i> Dyar, 1922 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) brethesi</i> Dyar, 1919 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) chidesteri</i> Dyar, 1921 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) coronator</i> Dyar & Knab, 1906 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) cuyanus</i> Duret, 1968 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) declarator</i> Dyar & Knab, 1906 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) dolosus</i> (Lynch Arribalzaga, 1891) | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) eduardoi</i> Casal & García, 1968 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) fernandezi</i> Casal, García & Cavallieri, 1966 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) interfor</i> Dyar, 1928 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) lahillei</i> Bachmann & Casal, 1962 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) levicastilloi</i> Lane, 1945 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) maxi</i> Dyar, 1928 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) mollis</i> Dyar & Knab, 1906 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) pipiens</i> Complex Linnaeus, 1758 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) pipiens molestus</i> Forskal, 1775 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |
| <i>Culex (Culex) pipiens</i> Linnaeus, 1758 | * | | * | | | * | * | * | * | | | * | | | | * | | | * | * | * | * | * |

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Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Culex (Culex) quinquefasciatus</i> Say, 1823 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Culex) riojanus</i> Duret, 1968 | | | | | | | | | | * | | | | | | | | | | | | | |
| <i>Culex (Culex) saltanensis</i> Dyar, 1928 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Culex) scheuberi</i> Carpintero & Leguizamón, 2004 | | | | | | | | | * | | | | | | | | | | | | | | |
| <i>Culex (Culex) spinosus</i> Lutz, 1904 | * | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Culex) tatoi</i> Casal & García, 1971 | * | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Culex) usquatissimus</i> Dyar, 1922 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Culex) usquatius</i> Dyar, 1918 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) albinensis</i> Bonne-Wepster & Bonne, 1920 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) aliciae</i> Duret, 1953 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) bahiensis</i> Duret, 1969 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) bejaranoi</i> Duret, 1953 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) clarki</i> Evans, 1924 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) delpontei</i> Duret, 1969 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) dummi</i> Dyar, 1918 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) dureti</i> Casal & García, 1968 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) educator</i> Dyar & Knab, 1906 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) elevator</i> Dyar & Knab, 1906 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) glyptosalpinx</i> Harbach, Peyton & Harrison, 1984 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) idottus</i> Dyar, 1920 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) inadmirabilis</i> Dyar, 1928 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) intricatus</i> Brethes, 1916 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) lopesi</i> Sirivanakarn & Jakob, 1979 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) lucifugus</i> Komp, 1936 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) martinezi</i> Casal & García, 1968 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) misionensis</i> Duret, 1953 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) ocosa</i> Dyar & Knab, 1919 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) oedipus</i> Root, 1927 | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) orfilari</i> Duret, 1953 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) pavlovskiyi</i> Casal & García, 1967 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) pedroi</i> Sirivanakarn & Belkin, 1980 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) pilosus</i> (Dyar & Knab, 1906) | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) plectopterae</i> Root, 1927 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) rabellii</i> Forattini & Sallum, 1987 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) ribeirensis</i> Forattini & Sallum, 1985 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) rooi</i> Rozeboom, 1935 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) serratimarge</i> Root, 1927 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) taeniopus</i> Dyar & Knab, 1907 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) theobaldi</i> (Lutz, 1904) | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) vaxus</i> Dyar, 1920 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Culex (Melanoconion) bastagarius</i> Dyar & Knab, 1906 | | | | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

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Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Culex (Microculex) davisi</i> Kumm, 1942 | | | * | | | * | | | | | | | * | | | * | | | | * | | | * |
| <i>Culex (Microculex) imitator</i> Theobald, 1903 | | | * | | | * | | * | | | | | * | | | | | | | * | | | * |
| <i>Culex (Microculex) neglectus</i> Lutz, 1904 | | | * | | | * | | | | | | * | | | | | | | | * | | | * |
| <i>Culex (Microculex) pleuristriatus</i> Theobald, 1903 | | | * | | | * | | | | | | * | | | | | | | | * | | | * |
| <i>Culex (Phenacomyia) airozai</i> Lane, 1945 | | | * | | | * | | | | | | * | | | | | | | | * | | | * |
| <i>Culex (Phenacomyia) corniger</i> Theobald, 1903 | | | * | | | * | | * | | | | * | | | | | | | | * | | | * |
| <i>Culex (Phytotelmatomyia) castroi</i> Casal & Garcia, 1967 | * | | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Culex (Phytotelmatomyia) hepperi</i> Casal & Garcia, 1967 | * | | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Culex (Phytotelmatomyia) renatoi</i> Lane & Ramalho, 1960 | * | | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Haemagogus (Conopostegus) leucocelaenus</i> (Dyar & Shannon, 1924) | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Haemagogus (Haemagogus) janthinomyis</i> Dyar, 1921 | | * | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Haemagogus (Haemagogus) spegazzini</i> Brethes, 1912 | | * | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Haemagogus (Haemagogus) capricornii</i> Lutz, 1904 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Isoptomyia espini</i> (Martini, 1914) | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Isoptomyia paranensis</i> (Brethes, 1910) | * | | | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Limatus durhamii</i> Theobald, 1901 | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Lutzia (Lutzia) bigoti</i> Bellardi, 1862 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Mansonia (Mansonia) flaveola</i> (Coquillett, 1906) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Mansonia (Mansonia) humeralis</i> Dyar & Knab, 1916 | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Mansonia (Mansonia) indubitans</i> Dyar & Shannon, 1925 | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Mansonia (Mansonia) pseudotitillans</i> (Theobald, 1901) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Mansonia (Mansonia) titillans</i> (Walker, 1848) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Onirion brucei</i> (del Ponte & Cerqueira, 1938) | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Onirion personatum</i> (Lutz, 1904) | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Orthodomyia peytoni</i> Carpintero & Leguizamón, 2005 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Orthopodomyia fasciipes</i> (Coquillett, 1906) | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Orthopodomyia sampaii</i> Da Costa Lima, 1935 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Grabhamia) cingulata</i> (Fabricius, 1805) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Grabhamia) confinis</i> (Lynch Arribalzaga, 1891) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Grabhamia) dimidiata</i> Cerqueira, 1943 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Grabhamia) paulli</i> Paterson & Shannon, 1927 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Grabhamia) varinervis</i> Edwards, 1922 | | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) albigena</i> (Peryassú, 1908) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) albipes</i> (Theobald, 1907) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) cyanescens</i> (Coquillett, 1902) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) discrucians</i> (Walker, 1856) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) ferox</i> (von Humboldt, 1819) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Janthinosoma) lutzii</i> (Theobald, 1901) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Psorophora) ciliata</i> (Fabricius, 1794) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Psorophora) cilipes</i> (Fabricius, 1805) | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |
| <i>Psorophora (Psorophora) holmbergi</i> Lynch Arribalzaga, 1891 | * | | * | | | * | | * | | | | * | | | * | | | | | * | | | * |

Continued

Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Psorophora (Psorophora) ochripes</i> (Macquart, 1850) | * | | | | | | | | | | | | | | | | | | | | | | |
| <i>Psorophora (Psorophora) pallidus</i> Edwards, 1922 | * | | | | | | | | | | | | | | | | | | | | | | |
| <i>Psorophora (Psorophora) saeva</i> Dyar & Knab, 1906 | * | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Runchomyia (Runchomyia) reversa</i> (Lane & Cerqueira, 1942) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Runchomyia (Runchomyia) frontosa</i> Theobald, 1903 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Davismyia) petrocchiae</i> (Shannon & Del Ponte, 1927) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Peytonulus) identicus</i> Dyar & Knab, 1907 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Peytonulus) soperi</i> Lane & Cerqueira, 194 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Peytonulus) undosus</i> (Coquillett, 1906) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Peytonulus) aurescens</i> (Lutz, 1905) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethes) albiprivus</i> Theobald, 1903 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethes) belisarioi</i> Neiva, 1908 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethes) cyaneus</i> (Fabricius, 1805) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethes) purpureus</i> (Theobald, 1907) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethinus) intermedius</i> (Lutz, 1904) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethinus) melanonymphae</i> Dyar, 1924 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Sabethes (Sabethoides) chloropterus</i> (von Humboldt, 1819) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Shannoniana fluvialis</i> (Theobald, 1903) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Ankylorhynchus) purpureus</i> (Theobald, 1901) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) bambusicola</i> (Lutz & Neiva, 1913) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) cavallerii</i> García & Casal, 1967 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) guadeloupeensis</i> Dyar & Knab, 1906 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) h. separatus</i> (Lynch Arribalzaga, 1891) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) solstitialis</i> (Lutz, 1904) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Toxorhynchites (Lynchiella) theobaldi</i> (Dyar & Knab, 1906) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Trichoprosopon castroi</i> Lane & Cerqueira, 1942 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Trichoprosopon compressum</i> Lutz, 1905 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Trichoprosopon obscurum</i> Lane & Cerqueira, 1942 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Trichoprosopon pallidiventer</i> (Lutz, 1905) | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Trichoprosopon simile</i> Lane & Cerqueira, 1942 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) apicalis</i> Theobald, 1903 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) davisii</i> Lane, 1943 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) ditaenionota</i> Prado, 1901 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) geometrica</i> Theobald, 1901 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) lanei</i> Martínez & Prosen, 19532 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) leucoptera</i> Lutz, 1907 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) lowii</i> Theobald, 1901 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) nataliae</i> Lynch Arribalzaga, 1891 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Uranotaenia (Uranotaenia) pulcherrima</i> Lynch Arribalzaga, 1891 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Wyeomyia serratoria</i> Dyar & Nuñez Tovar, 1927 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| <i>Wyeomyia (Dendromyia) luteoventralis</i> Theobald, 1901 | | | * | | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |

Continued

Table 1. Continued.

| Species | Provinces | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| <i>Wyeomyia (Menolepis) leucostigma</i> Lutz, 1904 | * | | | | | | | | * | | | | * | | | | | | | | | | * |
| <i>Wyeomyia (Miamiya) codiocampa</i> Dyar & Knab, 1907 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Miamiya) limai</i> Lane & Cerqueira, 1942 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Miamiya) lutzii</i> (Da Costa Lima, 1930) | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Miamiya) oblita</i> (Lutz, 1904) | | | | | | | | | | | | * | | | * | | | | | | | | * |
| <i>Wyeomyia (Miamiya) sabethea</i> Lane & Cerqueira, 1942 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Miamiya) serrata</i> (Lutz, 1905) | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Nunezia) lateralis</i> Petrocchi, 1927 | | | | | | | | | * | | | | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) flabellata</i> (Lane & Cerqueira, 1942) | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) fuscipes</i> Edwards, 1922 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) muehlensii</i> Petrocchi, 1927 | | | * | | | | | * | | | | * | | | | | | | * | | | | * |
| <i>Wyeomyia (Phoniomyia) pilicauda</i> Root, 1928 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) quasilonigrostris</i> (Theobald, 19807) | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) tripartita</i> (Bonne-Wepster & Bonne, 1921) | | | * | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Phoniomyia) diabolica</i> (Lane & Forattini, 1952) | | | * | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Spilonympha) mystes</i> Dyar, 1924 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Triomyia) aporonoma</i> Dyar & Knab, 1906 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia (Wyeomyia) arthro stigma</i> Dyar, 1924 | | | | | | | | | | | | * | | | | * | | | | | | | * |
| <i>Wyeomyia (Wyeomyia) medioalbipes</i> Lutz, 1904 | | | | | | | | | | | | * | | | | | | | | | | | * |
| <i>Wyeomyia melanocephala</i> Dyar & Knab, 1906 | | | * | | | | | | * | | | * | | | | * | | | | | | | * |