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Culicidae (Diptera: Culicomorpha) in the southern Brazilian "Ana Leuch Lozovei" collection with notes on distribution and diversity

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Abstract

Biological collections are of extreme importance in acquiring knowledge of the biodiversity of a specific environment. In this article, we organise, list and catalogue the adult specimens belonging to the family Culicidae housed in the Parasitology Collection of the Basic Pathology Department at the Federal University of Paraná, southern Brazil. To this end, a data bank was created, containing information on the taxonomy and collecting of each sample. The culicids were collected using different methodologies in 18 municipalities in the state of Paraná, between 1967 and 1999. There are 5,739 catalogued specimens of which 4,704 (81.96%) are identified at a specific level, with a diversity of 205 species. Of these, 18 are new recorded samples for the state of Paraná and 3 for Brazil. This being the case, we propose, in honour of the 30 years dedicated to the study of culicids in the state of Paraná, the creation of the Ana Leuch Lozovei Entomological Collection, which is composed of insect vectors or potential vectors, of agents that cause diseases in humans.

Subjects Areas Animal and Plant Sciences, Biodiversity, Taxonomy.

MAIN CONTENT

Data description

The Parasitology Collection of the Basic Pathology Department, housed in the Biological Science Sector of the Federal University of Paraná (ColPar/DPAT/BL/UFPR), was set up in the 1960s through different research projects. One of researchers who contributed to this initiative was Professor and Doctor Ana Leuch Lozovei, who, with her students and collaborators, collected and identified the different taxonomic groups found there. The collection includes some insect vector families, notably the family Culicidae, comprising specimens captured in different municipalities in the state of Paraná, in southern Brazil, between 1967 and 1999.

Professor Ana Leuch Lozovei was a member of the teaching staff and taught Parasitology and Medical Entomology in the Basic Pathology Department of the Federal University of Paraná. She contributed significantly to the training of several generations of health, Natural Sciences and education professionals working throughout Brazil today. Driven by a sharp intuition, she built collections of diverse taxonomic groups, with a view to utilizing them didactically. However, after the years of work and contributions of her post-graduate students, the material increasingly gained scientific dimension as the knowledge of the areas in which she worked increased. This was how the Culicidae section of her collection began to occupy a place of great distinction for knowledge of entomofauna of medical importance and of the ecological aspects of these insects in the areas studied, with special care in identification, organisation and conservation. These samples afforded the Basic Pathology Department the construction of a valuable legacy that highlights the importance of the collection to its creator and to the state of Paraná. It reflects a life dedicated to knowledge. Professor Ana Leuch Lozovei is now retired, but, those who meet her describe the same sensation as that in the times when she taught in the department: “It`s impossible to leave the classroom with a question unanswered, always motivated to be curious”. The Professor Ana Leuch Lozovei Collection, which has incredible growth potential thanks to its importance, is able to serve as a reference source for researchers interested in the culicid fauna of Paraná. The collecting of samples aimed for knowledge of the diversity of species and the ecological aspects of Culicidae, in addition to specifying the species as potentially medical and veterinary in the areas studied. But more specifically, Dr. Ana Lozovei and her collaborators intended to map species distribution and contribute with advances in medical entomology in the state of Paraná.

To honour the contribution of this researcher, who spent more than 30 years studying the family Culicidae, we propose in this article to create the Ana Leuch Lozovei Entomological Collection which is an integral part of ColPar/DPAT/BL/UFPR.

The collection boasts a total of 5,739 specimens, represented by 2 subfamilies of Culicidae, with 7 tribes, 23 genera, 37 subgenera and 205 species. A total of 943 individuals (16.43%) are identified only at subgenus level and 93 (1.62%) at genus level. Among the individuals identified at a specific level, 4,704 (81.96%), 18 species constitute the first recorded sample for the state of Paraná (*Anopheles albimanus* Wiedmann, 1820, *Anopheles costai* da Fonseca & da Silva Ramos, 1940, *Anopheles rangeli* Gabaldon, Cova-Garcia & Lopez, 1940, *Culex aquarius* Strickman, 1990, *Culex bastagarius* Dyar & Knab, 1906, *Culex foliaceus* Lane, 1945, *Culex alinkios* Sallum & Hutchings, 2003, *Culex faurani* Duret, 1968, *Culex lucifugus* Komp, 1936, *Culex hedys* Root, 1927, *Culex ocossa* Dyar & Knab, 1919, *Culex oedipus* Root, 1927, *Culex lanei* Oliveira Coutinho & Forattini, 1962, *Aedes fulvithorax* (Lutz, 1904), *Culex theobaldi* (Lutz, 1904), *Culex pleuristriatus* Theobald, 1903, *Aedes eucephalaeus* (Dyar, 1918) and *Uranotaenia ditaenionota* Prado, 1931). Three of these are new recorded samples for Brazil (*Culex aquarius*, *Culex lucifugus* and *Aedes eucephalaeus*), which signifies the expansion of geographical distribution of the species previously restricted to certain locations or countries.

Capturing the culicids was carried out in nature reserves in 18 municipalities (**Figure 1**) in the state of Paraná between 1967 and 1999. The Dense Ombrophilous Forest phytogeographic region is represented in the collection as the area that contains the majority of samples (n= 4,831) with the municipality of Morretes having 4,774 (98%) recorded samples. In fact, this region has been used as a collection place for culicids by different researchers, bearing in mind the availability of conservation areas in the region. [1–4]. Throughout the 30 years of study, identifications were carried out and confirmed by taxonomists in the group, including Dr. Ana Lozovei, as well such collaborators as Dr. Samira Chahad-Ehlers, Dr. Luiz Gonzaga dos Santos-Neto and Dr. Adson Luís Sant'Ana, who are three of the co-authors of this article. Some identifications were confirmed at the time by Dr. Maria Anice Mureb Sallum of the Public Health Faculty of the University of São Paulo. The Parasitology Collection of the Basic Pathology Department is part of the

Information System on Brazilian Diversity (SiBBr) and can be accessed on https://collectory.sibbr.gov.br/collectory/public/show/co446.

Context

Biodiversity is a world heritage and must be valued for the development of each nation. Similarly, national scientific collections must be seen as the memorial heritage of the country's diversity [5–7], since they are temporary records of the diversity of the organisms in an environment. Furthermore, biological collections are of extreme importance to science, given that their data allow for strategic research of the country and are of enormous value in complying with international commitments and treaties [5,8,9]. Their use in research is essential for any researcher in need of reference to a currently recognized name and other information related to any taxon of interest [10,11].

Insects of the family Culicidae (order Diptera), commonly known as mosquitoes, have a wide geographic distribution. There are currently 3,591 described species, divided into two subfamilies (Anophelinae and Culicinae), distributed in 113 genera [12] with around 31% found in the Neotropical region [13,14]. There are 530 recorded species in Brazil, belonging to 23 genera distributed throughout all biomes and six of these are endemic to the country [16]. There are currently 191 culicidae species in the state of Paraná [17–19], though these numbers show a tendency to increase with the intensification of research due to the epidemiological importance of this group. [20,21].

Bearing in mind the relevance of culicids to diverse areas of natural and applied sciences and the importance of biological collections as a source of conservation of biodiversity data, it is thus essential that all information about this insect should be published, shared and made available to the entire general and scientific community. Thus, the data collection on culicids and cataloguing of the Ana Leuch Lozovei Entomological Collection at ColPar/DPAT/BL/UFPR, has led to a repository of information on the culicid fauna of some phytogeographic regions in the state of Paraná. The collection presents important potential for the utilisation of data and such information as knowledge of the entomofauna of places that were not degraded at one time or to reveal species that are currently difficult to collect in the state, so contributing to future studies of the fauna and environmental conservation. The subfamily Culicinae represents the major part of the present species and the genus *Culex* presented the highest number of specimens in the collection, corresponding to around 40% of the total, distributed among 52 species, making it the most diverse. By contrast, the genera *Aedeomyia, Lutzia,* *Onirion* and *Shannoniana* are the least represented, with just one species each. As for Anophelinae, there are two recorded genera, namely *Anopheles*, represented by 30 species, and Chagasia, with just one. The period of 30 years spent on study furnishes a timeframe for one to understand the dynamics of population fluctuation or the detection of species not previously recorded, enabling the generation of data on areas of epidemiological potential for diseases related to culicids [22].

These mosquitoes represent an important link in the transmission chain of many neglected, emerging and re-emerging diseases [22–24]. The collection boasts samples of diverse species of great medical importance (Table 1), for example, *Aedes* (*Stegomyia*) *albopictus* (Skuse, 1895) and *Aedes* (*Stegomyia*) *aegypti* (Linnaeus, 1762), considered to be the main vectors of Dengue (DENV), Zika Virus (ZIKV), and Chikungunya (CHIKV). *Aedes aegypti* is also an important element in the transmission of Yellow Fever (YFV) in the urban environment [25,26]. The species *Haemagogus* (*Conopostegus*) *leucocelaenus* (Dyar & Shannon, 1924) and *Aedes* (*Ochlerotatus*) *fulvus* (Wiedemann, 1828), included in the Aedini tribe, are also associated with yellow fever, but in forested environments [27,28]. In recent laboratory research, Lourenço-de-Oliveira and Failoux [29] observed the vectorial competence of the species *Hg. leucocelaenus* and *Aedes* (*Protomacleaya*) *terrens* (Walker, 1856) for the Chikungunya virus, noting that both can transmit this virus. Furthermore, the genus *Culex* is an important group in the transmission of *Wuchereria bancrofti* (lymphatic filariasis), encephalitis, and such serious haemorrhagic fevers as Oropouche fever [30–32], while the genus *Anophele*s is the one most responsible for the transmission *Plasmodium* spp., which cause human malaria [33–36]. In addition to the importance for public health, culicids participate effectively in the transmission of diverse pathogens that cause diseases of veterinary interest, some of which, such as Equine Infectious Anaemia (EIA), dirofilariasis and West Nile fever [37–41], have zoonotic potential, reaffirming the importance that culicids have in the epidemiological chain of diseases transmitted by vectors [21,42,43].

METHODS

Study area

The state of Paraná, situated in the subtropical region of South America, in southern Brazil, between the coordinates 22°30’44” S – 26°43’08” S and 48°00’11” W – 54°36’32” W, has a territorial area of 199,298 km² [44], composed of five phytogeographic regions: Seasonal Semideciduous Forest, Mixed Ombrophilous Forest, Dense Ombrophilous Forest, Steppe and Savanna [45,46]. According to the Köppen classification, the state's climate is divided into subtropical and tropical, with an average annual temperature of 19°C, varying between 25.9 and 12°C and average annual precipitation of 1,300 mm [47].

Collecting methods

The geographical coordinates of the 18 sample municipalities were extracted from the platform *Global Gazetteer Version* 2.3 (http://www.fallingrain.com/world/.). These data were the basis for the devising of a map covering the phytogeographic areas [46], utilising *QGis* software (V. 3.22.3-Białowieża). The culicids in the collection were captured by different methods, such as entomological nets, aspiration, light traps (CDC) and Shannon traps containing a fluorescent bulb as bait. [1,2,17].

Cataloguing process for the culicids

The cataloguing work was carried out at the Parasitology Collection in the Basic Pathology Department located in the Biological Sciences Sector of the Federal University of Paraná (UFPR), where Culicidae specimens collected by Dr. Ana Leuch Lozovei, her students and collaborators can be found. The classification utilised for Culicidae follows the system proposed by Harbach [12], Wilkerson et al. [13] for the tribe Aedini, with abbreviations according to Reinert [48].

Only information on dry preserved male and female culicids, mounted with entomological pins was used for the DataSet. Data on each individual were tabulated on a spreadsheet using Microsoft Office® v. 2016 (Microsoft Corporation, Redmond, WA, USA) and later transferred to a Darwin Core spreadsheet. [49].

RESULTS

DATA VALIDATION AND QUALITY CONTROL

Throughout the years of dedicated to research into culicid fauna in the state of Paraná, several works were published by Dr. Ana Leuch Lozovei and her group, [2,3,17,34,50–52], reinforcing the importance of culicids in the transmission of diseases and in environmental quality. Moreover, it was possible to carry out this work through the data obtained.

REUSE POTENTIAL

Climatic alterations with constant modifications in the environment over time promote significant changes in biodiversity, above all in the insect population, where one can observe a greater dispersion in the environment, mainly of those species of medical/epidemiological interest. The data made available in this work could be fundamental in future studies on aspects regarding ecology, the environment and biodiversity, principally of the species of medical interest from the perspective of “One Health”. An important point concerning the current collection is that it represents 18 new first recorded samples of species for the state of Paraná, serving as an important reference for research into the biodiversity of mosquitoes. This demonstrates and reaffirms the importance of maintaining and constantly updating biological collections.

DATA AVAILABILITY STATEMENT

The dataset supporting this article are available in the SiBBr repository [53].

Declarations

List of abbreviations

ColPar – Parasitology Collection; DPAT – Basic Pathology Department; Biological Sciences SectorBL; UFPR: Federal University of Paraná.

Ethical Approval

Not applicable

Competing Interests

The authors declare that they have no competing interests.

Funding

Not applicable

Authors' Contributions

MSC writing of the manuscript, compilation and organization of data; SCE sample collecting, identification, data revision and writing of the manuscript; LGSN sample collecting, identification, data revision; ALSA sample collecting and identification; GPM compilation and organization of data; DRK writing of the manuscript, collection maintenance; TMB writing of the manuscript; CLSI writing of the manuscript and data revision; RAG writing of the manuscript and data revision; ALL sample collecting, identification; AJA writing of the manuscript, compilation and organization of data.

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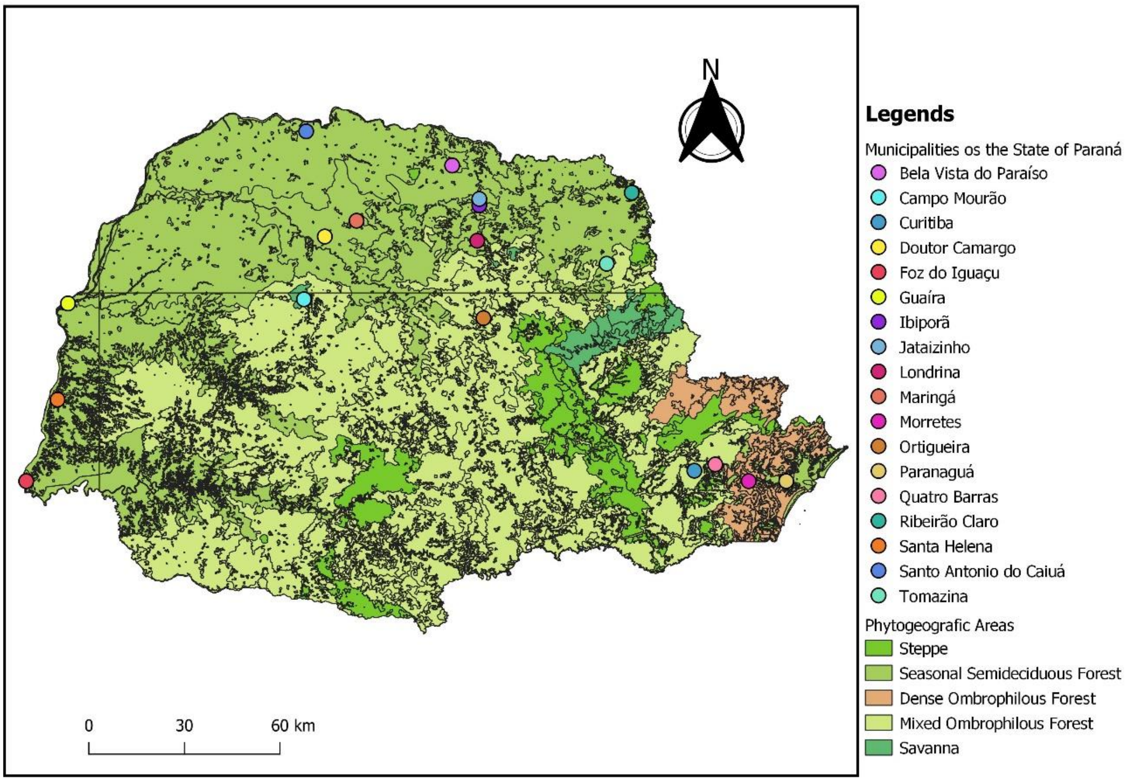
Legends

Figure 1. Municipalities and phytogeographic regions of the State of Paraná, where the culicid samples housed in the Ana Leuch Lozovei Entomological Collection of the Federal University of Paraná, Brazil were collected.

Table 1. Species of mosquitoes (Diptera: Culicidae) present in the state of Paraná, Brazil, and associated pathogens.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Legends
Municipalities os the State of Paraná
Bela Vista do Paraíso
Campo Mourão
Curitiba
Doutor Camargo
Foz do Iguaçu
Guaíra
Ibiporã
Jataizinho
Londrina
Maringá
Morretes
Ortigueira
Paranaguá
Quatro Barras
Ribeirão Claro
Santa Helena
Santo Antonio do Caiuá
Tomazina
Phytogeografic Areas
Steppe
Seasonal Semideciduous Forest
Dense Ombrophilous Forest
Mixed Ombrophilous Forest
Savanna
0
30
60 km

Figure 1

Genus	Subgenus	Species	Pathogens	References
Aedomyia	*Aedeomyia*	*squamipennis* (Lynch Arribálzaga, 1878)	*Plasmodium* spp. (aviary) Encefalite Equina Venezuelana virus (VEEV) Gamboa virus (GAMV) Bunyawera virus (BUNV) Everglades virus (EVEV)	GABALDON, A.; ULLOA, G.; GODOY, N.; MARQUEZ, E. & PULIDO, J. (1977) *Aedeomyia squamipennis* (Diptera: Culicidae) vector natural de malária aviária en Venezuela. **Bol. Dir. Malariol. Y San. Amb**., 17: 9-13.
			Plasmodium spp. (aviary) Encefalite Equina Venezuelana virus (VEEV) Gamboa virus (GAMV) Bunyawera virus (BUNV) Everglades virus (EVEV)	PEREIRA, A.C.N.; PEREIRA FILHO, A.A.; BRITO, G.A.; MORAES, J.L.; REBÊLO, J.M.M. (2017) First record of *Aedeomyia squamipennis* (Lynch Arribálzaga, 1878) (Diptera: Culicidae) in the state of Maranhão: epidemiological implications and distribution in Brazil. *Check List*, 13(2): 2084. doi: https://doi.org/10.15560/13.2.2084
				BURKETT-CADENA, N.D.; BLOSSER, E.M. (2017) *Aedeomyia squamipennis* (Diptera: Culicidae) in Florida, USA, a New state and Country Record. **Journal of Medical Entomology**, 54(3):788-792. doi:https://doi.org/10.1093/jme/tjw226
				SEGURA, M.N.O.; CASTRO, F.C. (2007) **Culicídeos na Amazônia Brasileira.** Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Anopheles	*Anopheles*	*costai* Fonseca & Ramos, 1939	*Plasmodium vivax* *Plasmodium falciparum*	KLEIN, T.A.; LIMA, J.B.; TADA, M.S. (1991) Suscetibilidade comparativa de mosquitos anofelinos ao *Plasmodium falciparum* em Rondônia, Brasil. **Amer. J. trop. Med. Hyg** , 44 : 598-603.
				KLEIN, T.A; LIMA, J.B.P.; TADA, M.S.; MILLER, R. (1991) Suscetibilidade comparativa de mosquitos anofelinos em Rondônia, Brasil, à infecção por *Plasmodium vivax*. **Amer. J. trop. Med. Hyg**, 45: 463-470
Anopheles		*eiseni* Coquillet, 1902	*Plasmodium falsiparum*	Walter Reed Biosystematics Unit (2022). *Anopheles eiseni* species page. Walter Reed Biosystematics Unit Website Disponível em: Disponivel em: https://wrbu.si.edu/vectorspecies/mosquitoes/eiseni. Acesso em:03 de fevereiro de 2022.
Anopheles		*fluminensis* Root, 1927	*Plasmodium brasilianum* *Plasmodium falciparum* *Plasmodium malariae* *Plasmodium simium* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles fluminensis* species page. Walter Reed Biosystematics Unit Website Disponível em: Disponivel em: https://wrbu.si.edu/vectorspecies/mosquitoes/fluminensis. Acesso em:03 de fevereiro de 2022.
Anopheles		*intermedius* (Chagas, 1908)	*Plasmodium falciparum*	DUSFOUR, I.; ISSALY, I.; CARINCI, R.; GABORIT, P.; GIDOR, R. (2012) Incrimination of *Anopheles* (*Anopheles*) *intermedius* Peryassú, An. *(Nyssorhynchus*) *nuneztovari* Gabaldón, *An.*

				(*Nys.*) *oswaldoi* Peryassú as natural vectors of *Plasmodium falciparum* in French Guiana. **Mem. Inst. Oswaldo Cruz,** 107(3):429-432.
Anopheles		*mediopunctatus* (Lutz, 1903)	*Plasmodium falciparum*	Walter Reed Biosystematics Unit (2022). *Anopheles mediopunctatus* species page. Walter Reed Biosystematics Unit Website Disponível em:). Disponivel em: https://wrbu.si.edu/vectorspecies/mosquitoes/mediopunctatus. Acesso em:03 de fevereiro de 2022.
Anopheles		*punctimacula* Dyar & Knab, 1906	*Plasmodium vivax* *Plasmodium falciparum*	ULLOA, A.; GONZÁLEZ-CERÓN, L.; RODRÍGUEZ, M.H. (2006). HOST SELECTION AND GONOTROPHIC CYCLE LENGTH OF A*NOPHELES PUNCTIMACULA* IN SOUTHERN MEXICO. **Journal of the American Mosquito Control Association**, 22(4):648–653. doi:10.2987/8756-971x(2006)22[648:hsagcl]2.0.co;2
Anopheles		*shannoni* Davis, 1931		
Anopheles		*tibiamaculatus* (Neiva, 1906)		
Anopheles	*Kerteszia*	*bellator* Dyar & Knab, 1906	*Wuchereria bancrofti* *Plasmodium* spp.	Walter Reed Biosystematics Unit (2022). *Anopheles bellator* species page. Walter Reed Biosystematics Unit Website. Disponível em: http://wrbu.si.edu/mosquitoes/vectorspecies/bellator. Acesso em: 03 de fevereiro de 2022.
				CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) **Principais mosquitos de importância sanitária no Brasil** / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Anopheles		*cruzii* Dyar & Knab, 1908	*Plasmodium vivax* *Plasmodium falciparum*	BRANQUINHO, M.S.; MARRELLI, M.T.; CURADO, I.; NATAL, D.; BARATA, J.M.; TUBAKI, R.; CARRERI-BRUNO, G.C.; MENEZES, R.T.; KLOETZEL, J.K. (1997) Infecção de *Anopheles* (*Kerteszia*) *cruzii* por *Plasmodium vivax* e *Plasmodium vivax* variante VK247 nos municípios de São Vicente e Juquitiba, São Paulo. **Rev Panam Salud Pública** 2: 189-193.
Anopheles		*homunculus* Komp, 1937	*Plasmodium falciparum* *Plasmodium* spp. *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles homunculus* species page. Walter Reed Biosystematics Unit Website. Disponível em: http://wrbu.si.edu/mosquitoes/vectorspecies/homunculus. Acecsso em: 03 de fevereiro de 2022.
Anopheles	*Nyssorhynchus*	*albimanus* Weidemann, 1820	Chikungunya cirus (CHIKV) Sindbis virus (SINV) Semliki Forest virus (SFV) Tlacotalpan virus (TLAV) *Plasmodium berghei* *Plasmodium falciparum* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles albimanus s*pecies page. Walter Reed Biosystematics Unit Website. Disponível em: http://wrbu.si.edu/mosquitoes/vectorspecies/homunculus. Acecsso em: 03 de fevereiro de 2022.

Anopheles		*albitarsis* Lynch Arribálzaga, 1878	Las Maloyas virus (LMV) St. Louis Encephalitis virus (SLEV) Western Equine Encephalitis virus (WEEV) *Plasmodium falciparum* *Plasmodium malariae* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles albitarsis* species page. Walter Reed Biosystematics Unit Website. Disponível em: http://wrbu.si.edu/vectorspecies/mosquitoes/albitarsis. Acesso em: 03 de fevereiro de 2022.
Anopheles		*antunesi* Galvão & Franco do Amaral, 1940		
Anopheles		*argyritarsis* Robineau-Desvoisdy, 1827	*Plasmodium vivax*	FARAN, M.E.; LINTHICUM, K.J. (1981) A handbook of the Amazonian species of *Anopheles* (*Nyssorhynchus*) (Diptera: Culicidae). **Mosquitos Systematics**, 13: 1-81.
Anopheles		*benarrochi* Gabaldón, Cova García & Lopez, 1941	*Plasmodium vivax* *Plasmodium falciparum*	Walter Reed Biosystematics Unit (2022). *Anopheles benarrochi* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/benarrochi. Acesso em: 03 de fevereiro de 2022.
Anopheles		*braziliensis* (Chagas, 1907)	*Plasmodium falciparum* *Plasmodium malariae* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles braziliensis* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/braziliensis. Acesso em: 03 de fevereiro de 2022.
Anopheles		*darlingi* Root, 1926	*Plasmodium falciparum* *Plasmodium malariae* *Plasmodium vivax* *Wuchereria bancrofti*	Walter Reed Biosystematics Unit (2022). *Anopheles darlingi* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/an_darlingi. Acesso em: 03 de fevereiro de 2022.
Anopheles		*daeneorum* Rosa-Freitas, 1989	*Plasmodium vivax* *Plasmodium falciparum*	Walter Reed Biosystematics Unit (2022). *Anopheles deaneorum* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/deaneorum. Acesso em: 03 de fevereiro de 2022.
Anopheles		*evansae* (Brèthes, 1926)		
Anopheles		*galvaoi* Causey Deane & Deane, 1943	*Plasmodium vivax* *Plasmodium falciparum*	Walter Reed Biosystematics Unit (2022). *Anopheles galvaoi* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/galvaoi. Acesso em: 03 de fevereiro de 2022.
Anopheles		*konderi* Galvão & Damasceno, 1942	*Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles konderi* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/konderi. Acesso em: 03 de fevereiro de 2022.
Anopheles		*lutzii* Cruz, 1901	*Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles lutzii* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/lutzii. Acesso em: 03 de fevereiro de 2022.

Anopheles		*oryzalimnetes* Wilkerson & Motoki, 2009		
Anopheles		*oswaldoi (*Peryassú, 1922*)*	*Plasmodium falciparum* *Plasmodium malariae* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles oswaldoi* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/oswaldoi. Acesso em: 03 de fevereiro de 2022.
Anopheles		*parvus* (Chagas, 1907)	*Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles parvus* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/parvus. Acesso em: 03 de fevereiro de 2022.
Anopheles		*rangeli* Gabaldón, Cova García & Lopez, 1941	*Plasmodium brasilianum* *Plasmodium falciparum* *Plasmodium malariae* *Plasmodium simium* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles rangeli* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/rangeli. Acesso em: 03 de fevereiro de 2022.
Anopheles		*rondoni* (Neiva & Pinto, 1922)	*Plasmodium vivax* *Plasmodium falciparum*	Walter Reed Biosystematics Unit (2022). *Anopheles rondoni* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/rondoni. Acesso em: 03 de fevereiro de 2022.
Anopheles		*strodei* Root, 1926	*Plasmodium falciparum* *Plasmodium malariae* *Plasmodium* spp. *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles strodei* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/strodei. Acesso em: 03 de fevereiro de 2022.
Anopheles		*triannulatus* (Neiva & Pinto, 1922)	Breu Branco virus Las Maloyas virus (LMV) *Plasmodium falciparum* *Plasmodium vivax*	Walter Reed Biosystematics Unit (2022). *Anopheles triannulatus* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/vectorspecies/mosquitoes/triannulatus. Acesso em: 03 de fevereiro de 2022.
Chagasia		*fajardi* (Lutz, 1904)		
Coquillettidia	*Rynchotaenia*	*albiscosta* (Chagas, 1908)		
Coquillettidia		*albifera* (Prado, 1931)		
Coquillettidia		*crhysonotum* (Peryassú, 1922)		
Coquillettidia		*fasciolata* (Lynch Arribálzaga, 1891)		
Coquillettidia		*hermanoi* (Lane & Coutinho, 1940)		

Coquillettidia		*juxtamansonia* (Chagas 1907)		
Coquillettidia		*lynchi* (Shannon, 1931)		
Coquillettidia		*nigricans* (Coquillet, 1904)		
Coquillettidia		*nitens* (Cerqueira, 1943)		
Coquillettidia		*shannoni* (Lane & Antunes, 1937)		
Coquillettidia		*venezuelensis* (Theobald, 1912)	Oropouche virus (OROV)	MARCONDES, C.B. (eds.) (2017). Arthropod borne disease. Switzerland: Springer, 645p.
			Catu virus (CATUV) Guama virus (GMAV) Itaporanga virus (ITPV) Moju virus (MOJUV) Mucambo virus (MUCV) Oriboca virus (ORIV) Oropouche virus (OROV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) **Culicídeos na Amazônia Brasileira.** Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Culex	*Aedinus*	*amazonensis* (Lutz, 1905)		
Culex	*Carrolia*	*iridescens* (Lutz, 1905)		
Culex		*kompi* Valencia, 1973		
Culex		*soperi* Antunes & Lane, 1937		
Culex	*Culex*	*acharistus* Root, 1927		
Culex		*aquarius* Strickman, 1990		
Culex		*bidens* Dyar, 1922	Venezuelan Equine Encephalitis virus (VEEV)	SABATTINI, M.S.; AVILÉS, G.; MONATH, T, P. (1998) Historical, epidemiological and ecological aspects of arboviruses in Argentina: Flaviviridae, Bunyaviridae and Rhabdoviridae. In: Travassos da Rosa APA, Vasconcelos PFC, Travassos da Rosa JFS, editors. An Overview of Arbovirology in Brazil and Neighbouring Countries. Instituto Evandro Chagas; 1998. pp. 113–134.
Culex		*bonneae* Dyar & Knab, 1919		
Culex		*chidesteri* Dyar, 1921		
Culex		*coronator* Dyar & Knab, 1906	West Nile Virus (WNV)	ALTO, B.W.; CONNELLY, C.R.; O'MEARA, G.F.; HICKMAN, D.; KARR, N. (2014) Reproductive biology and susceptibility of Florida *Culex coronator* to infection with West Nole Virus. **Vector-borne and Zoonotic Diseases**, 14(8):606-614. doi:10.1089/vbz.2013.1501

			Zika virus (ZIKV)	VIVEIROS-ROSA, S.G.; REGIS, E.G.; SANTOS, W.C. (2020) Vector competence of *Culex* mosquitoes (Diptera: Culicidae) in Zika virus transmission: an integrative review. **Rev Panam Salud Publica,** 44:e7. https://doi.org/10.26633/RPSP.2020.7
			St. Louis Encephalitis virus (STLV)	CARDOSO et al. (2010). Novos registros e potencial epidemiológico de algumas espécies de mosquitos (Diptera: Culicidae), no Estado do Rio Grande do Sul. ***Rev. Soc. Bras. Med. Trop.***, 43(5):552-556. https://doi.org/10.1590/S0037-86822010000500016
Culex		*declarator* Dyar & Knab, 1906	Oropouche virus (OROV) St. Louis Encephalitis virus (SLEV) West Nile Virus (WNV)	LAURITO, M.; HOYOS-LÓPEZ, R. (2018) First record of *Culex* (*Culex*) *bidens* (Diptera: Culicidae) in Colombia: Taxonomic and epidemiological implications. **Acta Tropica**, 188(2018):251-257. doi:http://doi.org/10.1016/j.actatropica.2018.09.010
Culex		*dolosus* (Lynch Arribálzaga, 1891)		
Culex		*eduardoi* Casal & García, 1968		
Culex		*foliaceus* Lane, 1945		
Culex		*laticlasper* Galindo & Blanton, 1954		
Culex		*lygrus* Root, 1927		
Culex		*mollis* Dyar & Knab, 1906		
Culex		*nigripalpus* Theobald, 1901	Cabassou virus (CABV) Eastern Equine Encephalitis virus (EEEV) Everglades virus (EVEV) Hart Park virus (HPV) Keystone virus (KEYV) St. Louis Encephalitis virus (STLV) TEnsaw virus (TENV) Venezuelan Equine Encephalitis virus (VEEV) West Nile Virus (WNV) Vesicular Stomatitis (NJ serotype) virus (VSNJV) Wyeomyia virus (WYOV)	Walter Reed Biosystematics Unit (2022). *Culex nigripalpus* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/nigripalpus. Acesso em: 03 de fevereiro de 2022.

Culex		*pipiens* Linnaeus, 1758	Japanese Encephalitis virus (JBEV) La Crosse virus (LACV) Rift Valley fever virus (RVFV) Rocio virus (ROCV) Venezuelan Equine Encephalitis virus (VEEV) West Nile virus (WNV) *Wuchereria bancrofti*	Walter Reed Biosystematics Unit (2022). *Culex pipiens* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/pipiens. Acesso em: 03 de fevereiro de 2022.
Culex		*quinquefasciatus* Say, 1823	Chikungunya virus (CHIKV) Eastern Equine Encephalitis virus (EEEV) Oropouche virus (OROV) Rocio virus (ROCV) Rift Valley fever virus (RVFV) St. Louis Encephalitis virus (SLEV) Venezuelan Equine Encephalitis virus (VEEV) West Nile virus (WNV) *Plasmodium relictum* *Wuchereria bancrofti*	Walter Reed Biosystematics Unit (2022). *Culex quinquefasciatus* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/quinquefasciatus. Acesso em: 03 de fevereiro de 2022.
Culex		*saltanensis* Dyar, 1928		
Culex		*tatoi* Casal & García, 1971		
Culex		*usquatus* Dyar, 1918		
Culex	*Melanococion*	*alinkius* Sallun & Hutchings, 2003		
Culex		*bastagarius* Dyar & Knab, 1906		
Culex		*delpontei* Duret, 1969		
Culex		*dunni* Dyar, 1918		
Culex		*faurani* Duret, 1968		
Culex		*idottus* Dyar, 1920		
Culex		*inhibitator* Dyar & Knab, 1906		

Culex		*lucifugus* Komp, 1936		
Culex		*lopesi* Sirivanakam & Jakob, 1979		
Culex		*misionensis* Duret, 1953		
Culex		*ocossa* Dyar & Knab, 1919	Babanki virus (BBKV) Para virus (PARAV) Venezuelan Equine Encephalitis virus (VEEV) Western Equine Envephalitis virus (WEEV)	Walter Reed Biosystematics Unit (2022). *Culex ocossa* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/ocossa. Acesso em: 03 de fevereiro de 2022.
Culex		*oedipus* Root, 1927		
Culex		*pedroi* Sirivanakam & Belkin, 1980		
Culex		*pilosus* (Dyar & Knab, 1906)		
Culex		*ribeirensis* Forattini & Sallum, 1985		
Culex		*theobaldi* (Lutz, 1904)		
Culex		*vaxus* Dyar, 1920		
Culex		*sacchettae* Sirivanakam & Jakob, 1982		
Culex		*spissipes* (Theoblad, 1903)	Carapupu virus (CARV) St. Louis Encephalitis virus (SLEV) Venezuelan Equine Encephalitis virus (VEEV)	Walter Reed Biosystematics Unit (2022). *Culex spissipes* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/spissipes. Acesso em: 03 de fevereiro de 2022.
Culex		*zeteki* Dyar, 1918		
Culex	*Microculex*	*elongatus* Rozeboom & Komp, 1950		
Culex		*hedys* Root, 1927		
Culex		*imitator* Theobald, 1903		
Culex		*lanei* Oliveira Coutinho & Forattini, 1962		
Culex		*microphyllus* Root, 1927		
Culex		*neglectus* Lutz, 1904		

Culex		*pleuristriatus* Theobald, 1903		
Culex	*Phenacomyia*	*corniger* Theobald, 1903		
Culex		*ocellatus* Theobald, 1903)		
Georgecraigius	*Horsfallius*	*fluviatilis* (Lutz, 1904)	Chikungunya virus (CHIKV)	XIMENES et al. (2020) Arbovirus expansion: New species of culicids infected by the Chikungunya virus in na urban park of Brazil. **Acta Tropica**, 209:105538. doi:https://doi.org/10.1016/j.actatropica.2020.105538.
			Yellow Fever virus (YFV) *Dirofilaria immitis*	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Haemagogus	*Conopostegus*	*leucocelaenus* (Dyar & Shannon, 1924)	Yellow Fever virus (YFV)	MARCONDES, C.B.; ALENCAR, J. (2010) Revisión de los mosquitos del género *Haemagogus* Williston (Diptera: Culicidae) de Brasil. **Rev. Biomed.**, 21 (2010):221-238. https://doi.org/10.32776/revbiomed.v21i3.115
			Chikungunya virus (CHIKV)	LOURENÇO-DE-OLIVEIRA, R.; FAILLOUX, A.B. (2017) High risk for Chikungunya virus to initiate an enzootic sylvatic cycle in the tropical Americas. **PLoS Negl. Trop. Dis.**, 11 (2017): e0005698. https://doi.org/10.1371/journal.pntd.0005698
			Ileus virus (ILHV) Maguari virus (MAGV) Una virus (UNAV) Wyeomyia virus (WYOV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Howardina		*fulvithorax* (Lutz, 1904)	Yellow Fever virus (YFV)	NAVARRO, J.C.; ENRÍQUEZ, S.; DUQUE, P.; CAMPAÑA, Y. BENÍTEZ-ORTÍZ, W. (2015) New mosquito species records for Ecuador, from Pululahua volcano (Andes) and Napo province (Amazon). **Journal of Entomology and Zoology Studies**, 3(6):392-396.
Limatus		*durhamii* Theobald, 1901	Maguari virus (MAGV) Guama virus (GMAV) Tucunduba virus (TUCV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Limatus		*flavisetosus* de Oliveira Castro, 1935	Maguari virus (MAGV) Guama virus (GMAV) Tucunduba virus (TUCV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Limatus		*pseudomethysticus* (Bonne-Wepster & Bonne, 1920)		
Lutzia	*Lutzia*	*bigoti* (Bellardi, 1862)		
Mansonia	*Mansonia*	*amazonensis* (Theobald, 1901)		
Mansonia		*flaveola* (Coquillet, 1906)		

Mansonia		*fonsecai* (Pinto, 1932)		
Mansonia		*humeralis* Dyar & Knab, 1916		
Mansonia		*iguassuensis* Barbosa da Silva & Sallum, 2007		
Mansonia		*indubitans* Dyar & Shannon, 1925		
Mansonia		*pessoai* (Barretto & Coutinho, 1944)		
Mansonia		*pseudotitillans* (Theobald, 1901)	St. Louis Encephalitis virus (STLV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Mansonia		*titillans* (Walker, 1848)	Venezuelan Equine Encephalitis virus (VEEV)	BECKER, N.; PETRIC, D.; ZGOMBA, M.; BOASE, C.; DAHL, C.; MADON, M.; KAISER, A. (2010) **Mosquitoes and Their Control**. Switzerland: Springer. 557p.
			Larvas de *Dermatobia hominis*	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Mansonia		*wilsoni* (Barretto & Coutinho, 1944)		
Ochlerotatus	*Chrysoconops*	*fulvus* (Wiedemann, 1828)	Yellow Fever Virus (YFV) St. Louis Encephalitis virus (SLEV) Ilheus virus (ILHV) Western Equine Encephalitis virus (WEEV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Ochlerotatus		*pennai* (Antunes & Lane, 1938)		
Ochlerotatus		*stigmaticus* (Edwards, 1922)		
Ochlerotatus	*Ochlerotatus*	*crinifer* (Theobald, 1903)		
Ochlerotatus		*rhyacophylus* (da Costa Lima, 1933)		

Ochlerotatus		*scupularis* (Rondani, 1848)	Ilheus virus (ILHV) Kairi virus (KRIV) Lukini virus (LUKV) Maguari virus (MAGV) Mayaro virus (MAYV) Melao virus (MELV) Oropouche virus (OROV) Playas virus (PLAV) St. Louis Encephalitis virus (SLEV) Venezuelan Equine Encephalitis virus (VEEV) Wyeomyia virus (WYOV) Yellow Fever virus (YFV) *Dirofilaria immitis* *Wuchereria bancrofti*	Walter Reed Biosystematics Unit (2022). *Aedes scapularis* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/scapularis. Acesso em: 03 de fevereiro de 2022.
Ochlerotatus	*Protoculex*	*argyrothorax* (Bonne-Wepster & Bonne, 1920)	Ilheus virus (ILHV) Wyeomyia virus (WYOV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Ochlerotatus		*eucephalaeus* (Dyar, 1918)		
Ochlerotatus		*hastatus* (Theobald, 1903)	Venezuelan Equine Encephalitis virus (VEEV)	PISANO, M.B.; RÉ, V.E.; DÍAZ, L.A.; FARÍAS, A.; STEIN, M.; SANCHES-SECO, M.P.; TENORIO, A.; ALMIRÓN, W.R.; CONTIGIANI, M.S. (2010). Enzootic Activity of Pixuna and Rio Negro Viruses (Venezuelan Equine Encephalitis complex) in a Neotropical Region of Argentina. **Vector-Borne and Zoonotic Diseases**, 10(2):199–201. doi:10.1089/vbz.2008.0156
			Pixuna virus (PIXV)	DANTUR JURI et al. (2012) New records of mosquitoes from Northwestern Argentina. **Journal of the American Mosquito Control Association**, 28(2):111-113. doi:10.2987/12-622r.1
Ochlerotatus		*nubilus* (Theobald, 1903)		
Ochlerotatus		*oligopistus* (Dyar, 1918)		

Ochlerotatus		*serratus* (Theobald, 1901)	Aura virus (AURAV) Caraparu virus (CARV) Venezuelan Equine Encephalitis virus (VEEV) St. Louis Encephalitis virus (SLEV) Guama virus (GMAV) Ilheus virus (ILHV) Mirim virus (MIRV) Mucambo virus (MUCV) Oriboca virus (ORIV) Oropouche virus (OROV) Una virus (UNAV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Ochlerotatus	*Protomacleaya*	*argyrothorax* (Bonne-Wepster & Bonne, 1920)	Ilheus virus (ILHV) Wyeomyia virus (WYOV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
			Yellow Fever virus (YFV)	PAUVOLID-CORRÊA et al. (2010) Preliminary investigation of Culicidae species in South Pantanal, Brazil and their potential importance in arbovirus transmission. **Rev. Inst. Med. Trop. S. Paulo**, 52(1):17-23. doi: 10.1590/S0036-46652010000100004
Ochlerotatus		*terrens* (Walker, 1856)	Chikungunya virus (CHIKV)	LOURENÇO-DE-OLIVEIRA, R.; FAILLOUX, A.B. (2017) High risk for Chikungunya virus to initiate an enzootic sylvatic cycle in the tropical Americas. **PLoS Negl. Trop. Dis.**, 11 (2017): e0005698. https://doi.org/10.1371/journal.pntd.0005698
Onirion		*personatum* (Lutz, 1904)		
Psorophora	*Grabhamia*	*cingulata* (Fabricius, 1805)	Oropouche virus (OROV)	PEREIRA-SILVA et al. (2021) Distribution and diversity of mosquitoes and Oropouche-like virus infection rates in an Amazonian rural settlement. PLoS ONE, 16(2): e0246932. DOI: https://doi.org/10.1371/journal.
Psorophora		*confinnis* (Lynch Arribálzaga, 1891)	Venezuelan Equine Encephalitis virus (VEEV)	BELLO et al. (2001) A new continuous cell line from the mosquito *Psorophora confinnis* (Diptera: Culicidae) and its susceptibility to infections with some arboviruses. **Memórias do Instituto Oswaldo Cruz**, 96(6):865-873. doi: https://doi.org/10.1590/S0074-02762001000600022
Psorophora	*Janthinosoma*	*albigenu* (Peryassú, 1908)	Western Equine Encephalitis Virus (WEEV)	Turrel MJ, O'Guinn ML, Dohm D, Zyzak M, Watts D, Fernandez R, Calampa C, Klein TA, Jones JW. 2008. Susceptibility of Peruvian mosquitoes to eastern equine encephalitis virus. **J Med Entomol,** 45:720–725.

Psorophora		*albipes* (Theobald, 1907)	Yellow Fever virus (YFV) Venezuelan Equine Encephalitis virus (VEEV) Guama virus (GMAV) Ilheus virus (ILHV) Kairi virus (KRIV) Mayaro virus (MAYV) Uma virus (UNAV) Wyeomyia virus (WYOV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Psorophora		*champerico* (Dyar & Knab, 1906)		
Psorophora		*circumflava* Cerqueira, 1943		
Psorophora		*discucians* (Walker, 1856)		
Psorophora		*ferox* (von Humboldt, 1819)	Guaroa virus (GROV) Ieri virus (IREIV) Ilheus virus (ILHV) Kairi virus (KRIV) Maguari virus (MAGV) Mayaro virus (MAYV) Oriboca virus (ORIV) Oropouche virus (OROV) Una virus (UNAV) Venezuelan Equine Encephalitis virus (VEEV) West Nile virus (WNV) Wyeomyia virus (WYOV)	Walter Reed Biosystematics Unit (2022). *Psorophora ferox* species page. Walter Reed Biosystematics Unit Website. Disponível em: https://wrbu.si.edu/index.php/vectorspecies/mosquitoes/ferox. Acesso em: 03 de fevereiro de 2022.
			Dermatobia hominis eggs	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Psorophora		*johnstonii* (Grabham, 1905)		
Psorophora		*lanei* Shannon & Cerqueira, 1943		
Psorophora		*lutzii* (Theobald, 1901)	Guama virus (GMAV) Ilheus virus (ILHV) Una virus (UNAV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.

Psorophora		*pseudomelatona* Barata & Cotrim, 1971		
Psorophora		*varipes* (Coquillet, 1904)		
Psorophora	*Psorophora*	*ciliata* (Fabricius, 1794)	West Nile Virus (WNV) Eastern Equine Encephalitis virus (EEEV) Venezuelan Equine Encephalitis virus (VEEV) Tansal virus	FOSS, K. A., & DEYRUP, L. D. (2007). NEW RECORD OF PSOROPHORA CILIATA IN MAINE, UNITED STATES. **Journal of the American Mosquito Control Association**, 23(4):476–477. doi:10.2987/5582.1
Runchomyia	*Runchomyia*	*cerqueirai* (Stone, 1944)		
Runchomyia		*reversa* (Lane & Cerqueira, 1942)		
Runchomyia		*theobaldi* (Lane & Cerqueira, 1942)		
Sabethes	*Peytonulus*	*aurescens* (Lutz, 1905)		
Sabethes		*identicus* Dyar & Knab, 1905	Yellow Fever virus (YFV)	FIORAVANTI, C.N. (2018) O combate à Febre Amarela no Estado de São Paulo: História, desafios e inovações. São Paulo: CVE/SES. 184p. Disponível em: https://www.saude.sp.gov.br/resources/cve-centro-de-vigilancia-epidemiologica/publicacoes/febre_amarela_web_2018.pdf. Acesso em: 05 de fevereiro de 2022.
Sabethes		*soperi* Lane & Cerqueira, 1942	Tucunduba virus (TUCV) Macaua virus (MCAV)	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
			Yellow Fever virus (YFV)	MARCONDES, C.B. (eds.) (2017). Arthropod borne disease. Switzerland: Springer, 645p.
Sabethes		*undosus* (Coquillet, 1906)	Yellow Fever virus (YFV)	FIORAVANTI, C.N. (2018) O combate à Febre Amarela no Estado de São Paulo: História, desafios e inovações. São Paulo: CVE/SES. 184p. Disponível em: https://www.saude.sp.gov.br/resources/cve-centro-de-vigilancia-epidemiologica/publicacoes/febre_amarela_web_2018.pdf. Acesso em: 05 de fevereiro de 2022.
Sabethes		*whitmani* Lane & Cerqueira, 1942		
Sabethes	*Sabethes*	*albiprivus* Theobald, 1903	Yellow fever virus (YFV)	LIRA-VIEIRA et al. (2013) Ecological aspects of mosquitoes (Diptera: Culicidae) in the gallery forest of Brasília National Park, Brazil, with na enphasis on potential vectors of yellow fever. **Revista da Sociedade Brasileira de Medicina Tropical**, 46(5):566-574. doi:http://dx.doi.org/10.1590/0037-8682-0136-2013
Sabethes		*batesi* Lane & Cerqueira, 1942		

Sabethes		*belisarioi* Neiva, 1908	St. Louis Encephalitis virus (STLV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Sabethes		*purpureus* (Theobald, 1907)		
Sabethes		*shannoni* Cerqueira, 1961		
Sabethes	*Sabethinus*	*idiogenes* Harbach, 1994		
Sabethes		*intermedius* (Lutz, 1904)	Tucunduba virus (TUCV) Macaua virus (MCAV)	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Sabethes		*melanonymphe* Dyar, 1924	Yellow Fever virus (YFV)	ALMEIDA, A.O. (2018) Tracking primates against yellow fever. **Revista FAPESP**, 3:3-9. Disponível em:https://revistapesquisa.fapesp.br/wp-content/uploads/2019/04/Ingles_Dez2018_completo.pdf. Acesso em: 05 de fevereiro de 2022.
Sabethes		*xhyphydes* Harbach, 1994		
Sabethes	*Sabethoides*	*chloropterus* (von Humboldt, 1819)	Yellow Fever virus (YFV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
			West Nile virus (WNV) Yellow Fever virus (YFV)	CLEMENTS, A.N. (2012). **The biology of mosquitos v.3.** Cambridge: Cambridge University Press. 571p.
			St. Louis Encephalitis virus (STLV) Ilheus virus (ILHV)	CONSOLI, R.A.G.B.; LOURENÇO-DE-OLIVEIRA, R. (1994) Principais mosquitos de importância sanitária no Brasil / Routraut A.G.B. Consoli, Ricardo Lourenço de Oliveira. Rio de Janeiro: Fiocruz, 1994. 228p.
Sabethes		*conditus* Moses Howard & Harbach, 2000		
Sabethes		*glaucodaemon* (Dyar & Shannon, 1925)	Yellow Fever virus (YFV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
Sabethes		*tridentatus* Cerqueira, 1961		
Sabethes	*Davismyia*	*petrocchiae* (Shannon & del Ponte, 1928)	Yellow Fever virus (YFV)	COUTO-LIMA et al. (2017) Potential risk of re-emergence of urban transmission of Yellow Fever virus in Brazil facilitated by competent *Aedes* populations. **Sci Rep**. 2017;7.
			Yellow Fever virus (YFV)	LI et al. (2022) Mapping environmental suitability of *Haemagogus* and *Sabethes* spp. mosquitoes to understand sylvatic transmission risk of yellow fever virus in Brazil. PLoS Negl Trop Dis 16(1): e0010019. doi: https://doi.org/10.1371/journal.pntd.0010019
Sallumia		*hortator* (Dyar & Knab, 1907)		

Shanonniana		*fluviatilis* (Theobald, 1903)		
Stegomyia	*Stegomyia*	*aegypti* (Linnaeus, 1762)	Dengue virus (DENV:1,2,3,4) Chikungunya virus (CHIKV) Yellow Fever virus (YFV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
			Zika virus (ZIKV) Dengue virus (DENV) Yellow Fever virus (YFV) Venezuelan Equine Encephalitis virus (VEEV) Mayaro virus (MAYV)	MARCONDES, C.B.; XIMENES, M.F.F.M. (2016) Zika virus in Brazil and the danger of infestation by *Aedes* (*Stegomyia*) mosquitoes. Rev. Soc. Bras. Med. Trop., 49(1):1-7. doi: http://dx.doi.org/10.1590/0037-8682-0220-2015
Stegomyia		*albopicta* (Skuse, 1895)	Dengue virus (DENV:1,2,3,4) Chikungunya virus (CHIKV) Yellow Fever virus (YFV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.
			Zika virus (ZIKV) Dengue virus (DENV) Yellow Fever virus (YFV) Venezuelan Equine Encephalitis virus (VEEV) Mayaro virus (MAYV)	MARCONDES, C.B.; XIMENES, M.F.F.M. (2016) Zika virus in Brazil and the danger of infestation by *Aedes* (*Stegomyia*) mosquitoes. Rev. Soc. Bras. Med. Trop., 49(1):1-7. doi: http://dx.doi.org/10.1590/0037-8682-0220-2015
Toxorhynchites	*Lynchiella*	*bambusicola* (Lutz & Neiva, 1913)		
Toxorhynchites		*pusillus* (Costa Lima, 1931)		
Trichoprosopon		*compressum* Lutz, 1905		
Trichoprosopon		*digitatum* (Rondani, 1848)	Bussuquara virus (BSQV) Ilheus virus (ILHV) Pixuna virus (PIXV) Wyeomyia virus (WYOV)	SEGURA, M.N.O.; CASTRO, F.C. (2007) Culicídeos na Amazônia Brasileira. Belém: Instituto Evandro Chagas, FIOCRUZ. p.67.

			Aruac virus (ARUV) Bussuquara virus (BSQV) Cocal virus (COCV) Dengue virus (DENV) Ilheus virus (ILHV) Pixuna virus (PIXV) St. Louis Encephalitis virus (STLV) Triniti virus (TNTV) Wyeomyia virus (WYOV)	Walter Reed Biosystematics Unit (2022). *Trichoprosopon digitatum* species page. Walter Reed Biosystematics Unit. Disponível em: http://wrbu.si.edu/vectorspecies/mosquitoes/digitatum. Acesso em: 05 de fevereriro de 2022.
Trichoprosopon		*pallidiventer* (Lutz,1905)	Anhembi virus (AMBV)	SOTO, S.U.; SUAZA-VASCO, J.D. (2021) El género neotropical *Trichoprosopon* Theobald 1901 (Diptera: Culicidae) en Colombia: registros de distribución e importancia médica. Rev. Acad. Colomb. Cienc. Ex. Fis. Nat**.** 45(176):638-650. doi: https://doi.org/10.18257/raccefyn.1376
Trichoprosopon		*simile* Lane & Cerqueira, 1942		
Trichoprosopon		*soaresi* Lane & Cerqueira, 1942		
Uranotaenia	*Uranotaenia*	*apicalis* Theobald, 1903		
Uranotaenia		*calosomata* Dyar & Knab, 1907		
Uranotaenia		*ditaenionota* Prado, 1931		
Uranotaenia		*geometrica* Theobald, 1901		
Uranotaenia		*lowii* Theobald, 1901		
Uranotaenia		*mathesoni* Lane, 1943		
Uranotaenia		*nataliae* Lynch Arribálzaga, 1891		
Uranotaenia		*pallidoventer* Theobald, 1903		
Uranotaenia		*pulcherrima* Lynch Arribálzaga, 1891		
Wyeomyia	*Miamyia*	*limai* Lane & Cerqueira, 1942		
Wyeomyia		*lutzi* (Costa Lima, 1931)		
Wyeomyia		*oblita* (Lutz, 1904)		
Wyeomyia		*sabethea* Lane & Cerqueira, 1942		

Wyeomyia	*Phoniomyia*	*antunesi* Lane & Cerqueira, 1937
Wyeomyia		*davisi* (Lane & Cerqueira, 1942)
Wyeomyia		*edwardsi* (Lane & Cerqueira, 1942)
Wyeomyia		*fuscipes* Edwards, 1922
Wyeomyia		*galvaoi* (Corrêa & Ramalho, 1956)
Wyeomyia		*incaudata* Root, 1928
Wyeomyia		*quasilongirostris* (Theobald, 1907)
Wyeomyia		*theobaldi* (Lane & Cerqueira, 1942)
Wyeomyia	*Prosopolepis*	*confusa* (Lutz, 1905)
Wyeomyia	*Spilonympha*	*mystes* Dyar, 1924
Wyeomyia	*Wyeomyia*	*abebela* Dyar & Knab, 1908
Wyeomyia		*arthrostigma* (Lutz, 1905)
Wyeomyia		*medioalbipes* Lutz, 1904
Wyeomyia	(subgenus uncertain)	*negrensis* Gordon& Evans, 1922
Wyeomyia	(subgenus uncertain)	*occulta* Bonne-Wepster & Bonne, 1919
Wyeomyia	(subgenus uncertain)	*serratoria* (Dyar & Nunez Tovar, 1927)
Sabethes	*Peytonulus*	*shannoni* Lane & Cerqueira, 1942
Wyeomyia	(subgenus uncertain)	*undulata* del Ponte & Cerqueira, 1938

Table