

## New records of mosquito species (Diptera: Culicidae) from Catamarca and Santa Fe provinces, Argentina

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### Nuevos registros de especies de mosquitos (Diptera: Culicidae) en las provincias de Catamarca y Santa Fe, Argentina.

**RESUMEN.** Se extiende la distribución geográfica de *Culex acharistus*, *C. bidens*, *C. chidesteri*, *C. dolosus*, *C. interfor*, *C. maxi*, *C. saltanensis* y *Ochlerotatus scapularis*, incrementando el número de especies de mosquitos citadas de las provincias de Catamarca, de 14 a 20, y de Santa Fe, de 57 a 59.

**PALABRAS CLAVE.** *Culex*. *Ochlerotatus*. Distribución. Diversidad.

**ABSTRACT.** The geographical distribution of *Culex acharistus*, *C. bidens*, *C. chidesteri*, *C. dolosus*, *C. interfor*, *C. maxi*, *C. saltanensis* and *Ochlerotatus scapularis* is extended, increasing the number of mosquito species in the provinces of Catamarca, from 14 to 20, and Santa Fe, from 57 to 59.

**KEY WORDS.** *Culex*. *Ochlerotatus*. Distribution. Diversity.

The knowledge about mosquito species distribution in a country is of great importance in order to determine areas of potential risk of pathogen transmission. The last contribution that summarizes the composition and distribution of mosquito fauna in Argentina belongs to Campos & Maciá (1998). Since then, other publications followed with reports of new records for the country or expanding the distribution of some species, such as Visintin *et al.* (2009, 2010), Campos (2011), Diez *et al.* (2011), Rossi & Vezzani (2011), Dantur Juri *et al.* (2012), Grech *et al.* (2012) and Stein *et al.* (2012). The present contribution updates the mosquito fauna list of Argentina increasing the number of species in Catamarca and Santa Fe provinces from 14 to 20 and 57 to 59 respectively.

Specimens were collected as a part of two entomological surveillance projects carried out in Catamarca and Santa Fe provinces. Immature stages, fourth-instar larvae and pupae, were collected with a 300 ml dipper in Catamarca Province, while adults were collected in Santa Fe Province with Centers for Disease Control and Prevention light traps baited with CO<sub>2</sub>. Larvae were individually reared to obtain larval and pupal exuviae associated with the respective adult. Species identification, particularly of representatives of the genus *Culex* L., was based on male genitalia dissections as well as keys (Darsie, 1985; Forattini, 2002), re-descriptions (Almirón & Harbach, 1996; Laurito *et al.*, 2008, 2009) and subsequent taxonomic works for some species (Harbach *et al.*, 1986).

The abbreviations of life stages and other terms used are as follows: larval exuviae (Le), pupal exuviae (Pe), male genitalia (MG), female (F), male (M), the person who determined the species (det.) and the collector (coll.). Information on collection locality (using a Garmin GPS, 60CSx) and date, phytogeographical region (taken from Cabrera 1976), climate and breeding sites is summarized as follows: Site 1: Catamarca Province: Ambato department, La Puerta locality, 28° 11' 1.7" S - 65° 48' 40.7" W, 1099 m.a.s.l., December 2012, semiarid Chaco phytogeographical province, arid climate of the hills and plains, immature stages were collected in a permanent natural pool originated by rainfalls or overflowing, between rocks; Site 2: Catamarca Province: Capayán department, S.F. del Valle de Catamarca city, 28° 24' 42.9" S - 65° 43' 9.8" W, 560 m.a.s.l., December 2012, arid Chaco phytogeographical region, arid climate of the hills and plains, immature stages were collected in a temporary flooded depression, near the road; Site 3: Santa Fe Province: Capital department, Santa Fe city, 31° 35' 56" S - 60° 40' 59" W, 15 m.a.s.l., November 2009, Pampean phytogeographical province, temperate climate, residential neighborhood; Site 4: Santa Fe Province: Capital department, Santa Fe city, 31° 38' 10" S - 60° 40' 21" W, 20 m.a.s.l., April 2010, Pampean phytogeographical province, temperate climate, Universidad Nacional del Litoral ecological reserve. Besides, the number of examined and deposited individuals, stage and sex of the collected specimens, collectors and current distribution are included for each species. Collected material is mounted as follows: adults in cardboard triangles with steel pin support and immature stages and genitalia structures in Canada balsam as microscopic preparations. These voucher specimens are deposited in the entomological collection of the Centro de Investigaciones Entomológicas de Córdoba, Universidad Nacional de Córdoba, Argentina.

#### **Culex** Linneo

*Culex (Culex) acharistus* Root. Site 1; Laurito, Lorenzo & Visintin coll. 1 Pe, 1 M, 1 MG; Laurito det. Current distribution in Argentina: Buenos Aires, Catamarca (new record), Chubut, Córdoba, Corrientes, Jujuy, Neuquén, Río Negro and Tucumán provinces.

*Culex (Culex) bidens* Dyar. Site 1; Laurito, Lorenzo & Visintin coll. 1 Pe, 1 M, 1 MG; Almirón & Laurito det. Current distribution in Argentina: Buenos Aires, Catamarca (new record), Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, La Rioja, Misiones, Salta, Santa Fe and Tucumán provinces.

*Culex (Culex) chidesteri* Dyar. Sites 3 and 4; Berrón & Diez coll.; 5 M, 5 MG; Laurito det. Current distribution in Argentina: Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Misiones, Salta, San Juan, Santa Fe (new record) and Tucumán provinces.

*Culex (Culex) dolosus* (Lynch Arribáizaga). Site 3; Berrón & Diez coll.; 2 M, 2 MG; Laurito det. Current distribution in Argentina: Buenos Aires, Córdoba, Corrientes, Entre Ríos, La Pampa, La Rioja, Mendoza, Misiones, Neuquén, Río Negro, Santa Fe (new record) and Tucumán provinces.

*Culex (Culex) interfor* Dyar. Site 1; Laurito, Lorenzo & Visintin coll.; 2 Le, 5 Pe, 5 M, 5 MG; Almirón & Laurito det. Current distribution in Argentina: Buenos Aires, Catamarca (new record), Chaco, Córdoba, Corrientes, Entre Ríos, La Pampa, La Rioja, San Luis, Santa Fe and Tucumán provinces.

*Culex (Culex) maxi* Dyar. Site 1; Laurito, Lorenzo & Visintin coll.; 4 Pe, 4 M, 4 MG; Laurito det. Current distribution in Argentina: Buenos Aires, Catamarca (new record), Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Misiones, Salta, Santa Fe, Santiago del Estero and Tucumán provinces.

*Culex (Culex) saltanensis* Dyar. Sites 1 and 2; Laurito, Lorenzo & Visintin coll.; 4 Le, 5 Pe, 2 F, 5 M, 5 MG; Laurito det. Current distribution in Argentina: Catamarca (new record), Chaco, Córdoba, Corrientes, Formosa, La Pampa, La Rioja, Misiones, Salta, San Juan, Santa Fe, Santiago del Estero and Tucumán provinces.

#### **Ochlerotatus** Lynch Arribáizaga

*Ochlerotatus (Ochlerotatus) scapularis* (Rondani). Site 2; Laurito, Lorenzo & Visintin coll. 2 F, 2 M; Laurito & Visintin det. Current distribution in Argentina: Buenos Aires, Catamarca (new record), Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, Mendoza, Misiones, Río Negro, Salta, Santa Fe, Santiago del Estero, Tierra del Fuego and Tucumán provinces.

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