

First record of the genus *Bezzia* in Chile, with a description of a new species of the *venustula* group (Diptera: Ceratopogonidae)

Primer registro del género *Bezzia* en Chile, con la descripción de una especie nueva del grupo *venustula* (Diptera: Ceratopogonidae)

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ABSTRACT

A new species of ceratopogonid diptera from central Chile, *Bezzia chilensis*, is described and illustrated based on an adult male and five female specimens, and also the widespread species *Bezzia nobilis* (Winnertz) is firstly recorded for the country.

Key words: *Bezzia*, new species, Chile, new record.

RESUMEN

Sobre la base de ejemplares adultos macho y hembras, se describe una nueva especie de díptero ceratopogónido de la zona central de Chile, *Bezzia chilensis*. Además, se registra por primera vez para este país a la especie de amplia distribución *Bezzia nobilis* (Winnertz).

Palabras clave: *Bezzia*, nueva especie, Chile, nuevo registro.

INTRODUCTION

Midges of the worldwide distributed genus *Bezzia* Kieffer 1899 are important predators of small invertebrates, mainly midges of the family Chironomidae. Its preimaginal stages are relatively common inhabitants of different kind of wetlands, mainly streams, lakes, and ponds, as well as other breeding habitats, such as sphagnum bogs, rice fields, hoofprints in a sandy creek bed, water in tree holes, and water in bromeliads.

The genus was fully reviewed for the Neotropics in a series of papers by Spinelli & Wirth (1989a, 1989b, 1990, 1991), describing and/or reporting 45 species for the entire region. After that, only one species, *Bezzia schmitzorum* Dippolito & Spinelli was described from the Brazilian Amazon (Dippolito et al. 1995). Almost every country of the Caribbean and Central and South America exhibit records of any of these 46 species, except Chile and Peru.

The existence in the collection of the Museo de La Plata of specimens of *Bezzia* from Central Chile, that were kindly donated by the late W. W. Wirth, prompted detailed examination of the material. This article presents results of this study, in

which we describe a new species of the *venustula* group, and provide the first records for the country of the widely distributed species *Bezzia nobilis* (Winnertz 1852).

MATERIAL AND METHODS

Specimens are slide mounted in Canada Balsam, and were examined, measured and drawn using a binocular microscope with camera lucida. Illustrations are based on the holotype and allotype. Holotype and three paratypes are deposited in the collection of the Museo de La Plata, Argentina (MLPA), while two paratypes in the collection of the Museo Entomológico, Facultad de Agronomía, Universidad de Chile, Santiago, Chile (MEUC). Data on measurements are presented as follows: mean value (minimum value-maximum value, n = number of measurements).

For general ceratopogonid terminology see Downes & Wirth (1981); diagnosis of the subgenus *Homobezzia*, and keys for Neotropical species groups and species included in the *venustula* group are found in Spinelli & Wirth (1991).

RESULTS

Bezzia chilensis n. sp.

Diagnosis. A medium-sized species of the *venustula* group distinguished by the following combination of characters: antenna uniformly brown; legs brown, the hind one darker; vein M1 narrowly sessile; 3 pairs of gland rods; gonocoxite with blunt anteromesal protuberance; gonostylus with blunt tip; basal arch of aedeagus nearly straight; ventral membrane of aedeagus deeply spiculate at distal 1/2 (Fig. 1).

Description. Female: wing length 1.96 (1.74-2.07, n = 6) mm; breadth 0.63 (0.60-0.69, n = 6) mm; head dark brown; eyes separated by a distance equal to diameter of one ommatidial facet (0.010 mm). Antenna (Fig. 1A and 1B) uniformly brown; lengths of flagellomeres in proportion of 14-11-11-11-11-12-11-12-23-22-23-23-24; antennal ratio 1.30 (1.12-1.45, n = 6). Palpus (Fig. 1C) brown, lengths of segments in proportion of 6-20-21-14-16; palpal ratio 2.63 (2.33-2.85, n = 6); third segment slender with scattered capitate sensilla at midportion. Mandible with 10-12 teeth. Thorax: scutum with small anterior spine; dark brown, humeral areas slightly paler; surface covered by fine pubescence and short hairs; four prealar setae, one postalar; scutellum slightly paler with 4-5 setae and numerous fine hairs. Legs (Fig. 1B) brown, the hind one darker; fore and midtibiae narrowly infuscated at apex, hindtibia with faint subbasal pale ring; fore femur armed with 3-4 spines of similar lengths; foretibia with apical spur and several stout, nearly straight subapical setae; midtibia with stout apical spinelike seta; hind tibial comb with seven spines; tarsi pale brown, tarsomeres 4-5 infuscated; a pair of strong black ventral spines at apices of tarsomeres 1-3 on midleg, smaller and paler on fore and hind legs; ventral palisade setae absent on foretarsus, in one row on tarsomeres 1-3 of midleg and tarsomere 3 of hindleg, in two rows on tarsomeres 1-2 of hindleg; claws small, slightly curved, each with internal basal tooth. Wing (Fig. 1E) with costal ratio 0.74 (0.72-0.76, n = 6); vein M1 narrowly sessile; membrane hyaline, anterior veins yellowish brown. Halter pale brown. Abdomen: dark brown; three pairs of slender gland rods; two subspheric spermathecae (Fig. 1F), measuring 0.050 by 0.040 mm and 0.040 by 0.030 mm, oblique necks 0.010 mm long; no trace of a rudimentary third.

Description. Male: similar to female with usual sexual differences. Antenna (Fig. 1G): yellowish brown, flagellomeres distinctly separated. Wing length 1.29 mm; breadth 0.45 mm; costal ratio

0.81. Genitalia (Fig. 1H, 1I, 1J): sternite 9 short with shallow caudomedian excavation. Gonocoxite with blunt anteromesal protuberance; gonostylus short, stout, strongly curved hooklike, tapering to blunt tip (Fig. 1I). Aedeagus triangular, slightly shorter than basal breadth; basal arch low, nearly straight; basal arms slender, strongly sclerotized, tapering distally to blunt tip; ventral surface deeply spiculate at distal 1/2. Parameres (Fig. 1J) with well developed, bilobed anterolateral plates; distal process long and slender, slightly narrowed subapically, with rounded tip.

Distribution. Known only from the type locality (Fig. 2).

Types. Holotype male, allotype female and five female paratypes: Chile, Valparaíso, Los Perales at river Marga Marga (330 m), 3-II-1967, M.E. Irwin.

Remarks. This species belongs to the *venustula* group by virtue of the small male (considerably smaller than the female), flagellomere 10 of male no longer than 11, fore femur slender and armed ventrally with one or more short black spines, scutum with anterior spine, presence of two functional spermathecae, and aedeagus triangular with ventral surface with minute spinules or hairs.

Bezzia nobilis (Winnertz)

Ceratopogon nobilis Winnertz, 1852: 79 (female; Germany). *Bezzia nobilis*: Kieffer, 1901: 153 (combination; in key).

References: for detailed descriptions see Wirth (1983) and Spinelli & Wirth (1989b); for synonymy with Nearctic and Palearctic species see Borkent & Wirth (1997).

Bezzia acanthodes Macfie, 1940: 192 (female; Guyana); Spinelli & Wirth (1989b): 113 (synonymy).

Distribution. Widespread in the Palearctic, Nearctic and Neotropical regions. In the later, south to southern Argentina and Chile (Fig. 2 for records in Chile).

New records: Chile, Valparaíso, Los Perales at river Marga Marga (330 m), 3-II-1967, M.E. Irwin, 2 females; Osorno, pond at east margin of river Nilahue (200 m), 28-XI-1992, G. Spinelli, 1 male, sweep net (MLP).

DISCUSSION

In our opinion, the lack of records of *Bezzia* spp. in Chile would simply obey to a sampling device defect. Moreover, the development of a sampling program specially devoted to collect

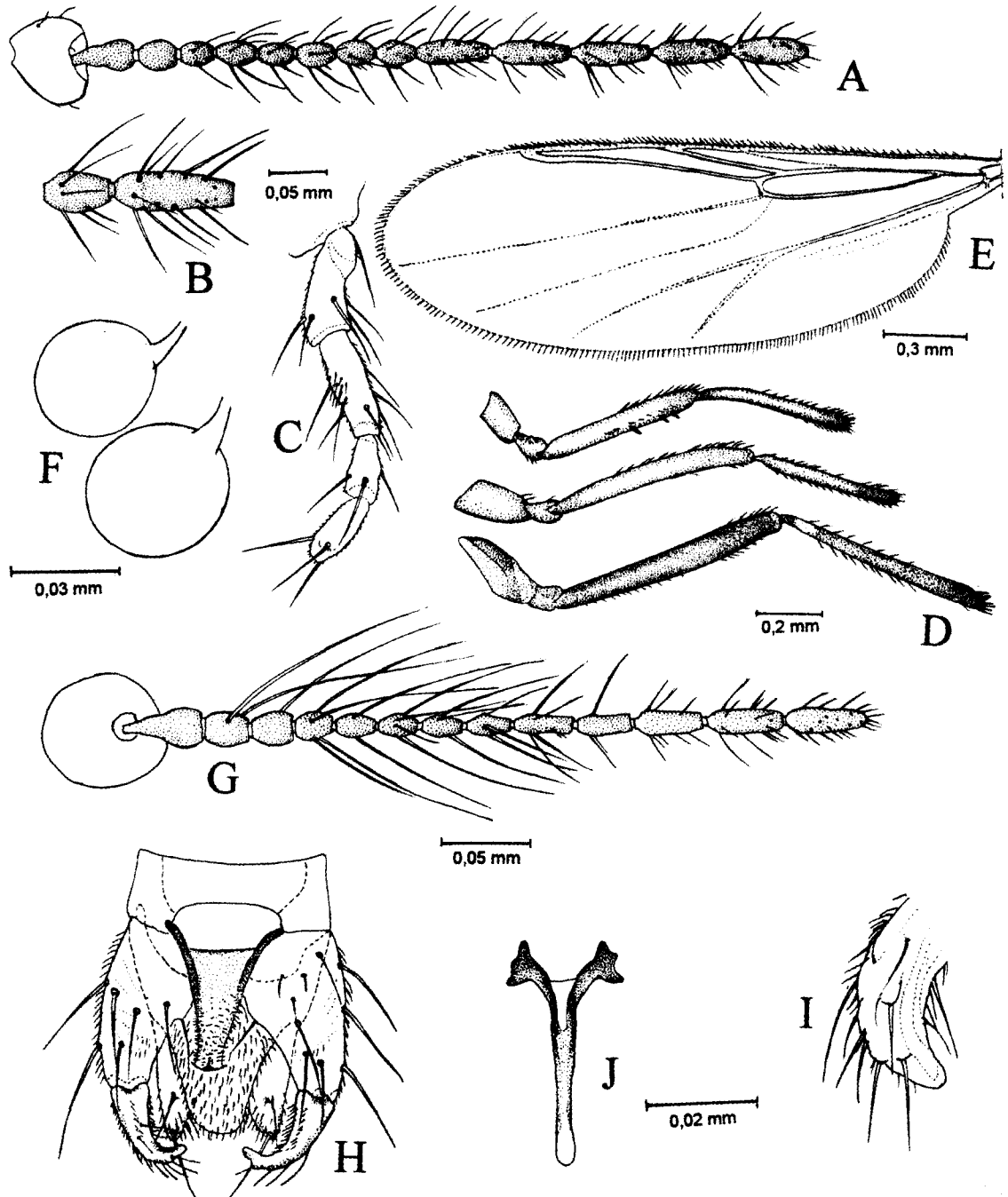


Fig. 1: Bezzia chilensis n. sp.; A-F: female; G-J: male. A, G: pedicel and flagellum of antenna; B: flagellomeres 8-9; C: palpus; D: legs, except tarsi (top to bottom, fore, mid, hind); E: wing; F: spermathecae; H: genitalia, except parameres; I: detail of tip of gonostylus; J: parameres.

Bezzia chilensis n. sp.; A-F: hembra; G-J: macho. A, G: pedicelo y flagelo de la antena; B: flagélómeros 8-9; C: palpo; D: patas, excepto tarsos (de arriba hacia abajo: anterior, media, posterior); E: ala; F: espermatecas; H: genitalia, excepto parámetros; I: detalle del extremo distal del gonostilo; J: parámetros.

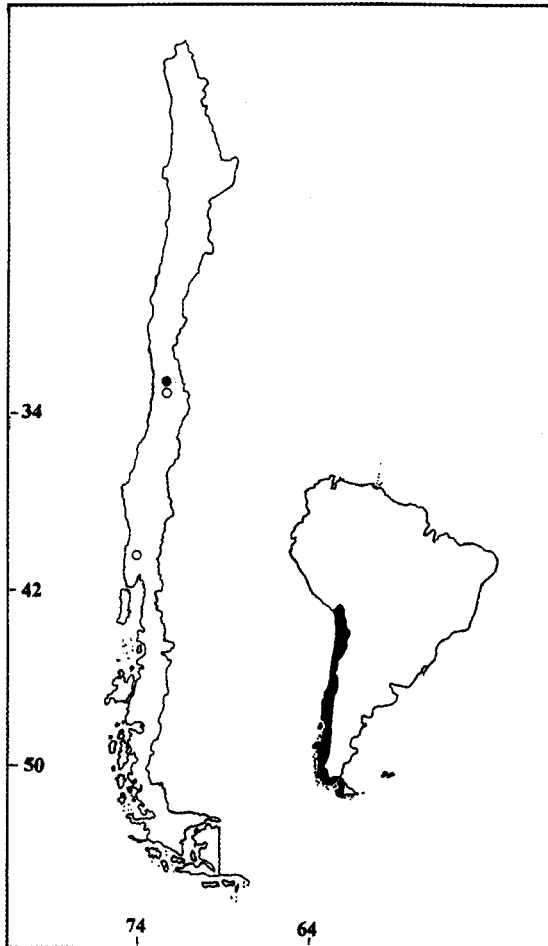


Fig. 2: Locality records for *Bezzia chilensis* (closed circle), and *B. nobilis* (open circles).

Localidades citadas para *Bezzia chilensis* (círculo cerrado) y *B. nobilis* (círculos abiertos).

ceratopogonids, will most probably increase in a significant way the number of species of this genus for Chile.

Although the new species herein described, *B. chilensis*, is very similar to its widespread congener *Bezzia venustula* (Williston 1896), the latter differs in the following characters: narrow bases of flagellomeres pale, darker legs, tibiae with conspicuous subbasal pale rings, four pairs of gland rods, curved basal arch of aedeagus, and gonostylus with sharp pointed tip.

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LITERATURE CITED

- BORKENT A & WW WIRTH (1997) World species of biting midges (Diptera: Ceratopogonidae). Bulletin of the American Museum of Natural History 233: 1-257.
- DIPPOLITO A, GR SPINELLI & WW WIRTH (1995) A report on a collection of Ceratopogonidae (Diptera) from Rondonia (Brazil) and Iquitos (Peru) 1. Tribes Palpomyiini and Stenoxenini. Insecta Mundi 9: 53-60.
- DOWNES JA & WW WIRTH (1981) Ceratopogonidae. In: McAlpine JF, BV Peterson, GE Shewell, HJ Teskey, JR Vockeroth & DM Wood (eds) Manual of Nearctic Diptera, Volume 1. Agriculture Canada (Ottawa) 1: 393-421.
- KIEFFER JJ (1899) Description d'un nouveau genre et tableau des genres européens de la famille des Chironomides (Dipt.). Bulletin de la Société Entomologique de France 1899: 66-70.
- KIEFFER JJ (1901) Synopse des représentants européens du group *Ceratopogon* avec description de quelques espèces nouvelles. Bulletin de la Société d'Histoire Naturelle de Metz 9: 143-165.
- MACFIE JWS (1940) Ceratopogonidae (Diptera) from British Guiana and Trinidad. Part 2. Proceedings of the Royal Entomological Society of London 9: 187-195.
- SPINELLI GR & WW WIRTH (1989a) The Neotropical predaceous midges of the genus *Bezzia* (Diptera: Ceratopogonidae) Part 1. The *glabra* and *brevicornis* groups. Limnobiology 2: 762-778.
- SPINELLI GR & WW WIRTH (1989b) Las especies neotropicales del género *Bezzia* (Diptera: Ceratopogonidae) II. Los grupos *nobilis* y *punctipennis*. Revista de la Sociedad Entomológica Argentina 45: 109-129.
- SPINELLI GR & WW WIRTH (1990) The Neotropical predaceous midges of the genus *Bezzia* (Diptera: Ceratopogonidae) Part III. The *gibbera* group of species. Insecta Mundi 4: 1-22.
- SPINELLI GR & WW WIRTH (1991) The Neotropical predaceous midges of the genus *Bezzia* (Diptera: Ceratopogonidae) Part IV. The *dentifemur* and *venustula* groups. Insecta Mundi 5: 1-18.
- WILLISTON SW (1896) On the Diptera of St. Vincent (West Indies). Transactions of the Entomological Society of London 1896: 253-446.
- WINNERTZ J (1852) Beitrag zur Kenntniss der Gattung *Ceratopogon* Meigen. Linnaea Entomologica 6: 1-80.
- WIRTH WW (1983) A review of the American predaceous midges of the *Bezzia nobilis* group (Diptera: Ceratopogonidae). Proceedings of the Entomological Society of Washington 85: 670-685.