

TWO NEW NEOTROPICAL SPECIES OF PREDACEOUS MIDGES OF THE TRIBE SPHAEROMIINI (DIPTERA: CERATOPOGONIDAE)

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Two new Neotropical species of the tribe Sphaeromiini are described and illustrated, Mallochohelea limitrofe from Argentina and Uruguay, and Neobezzia wirthi from Argentina. The first species is only known from the female sex, being the second one described from both, female and male specimens.

Key words: Neotropical predaceous midges – Tribe Sphaeromiini – *Mallochohelea limitrofe* n. sp. – *Neobezzia wirthi* n. sp.

The genus *Mallochohelea* Wirth is presently known in the Neotropical region by 4 species: *aenipes* (Macfie) and *nemoralis* (Macfie) from Guyana, and *nigripes* and *pullata* (Wirth) from Brazil (Wirth, 1974).

Wirth & Ratanaworabhan (1972) proposed the Neotropical genus *Neobezzia* for 5 new species: *albitarsis*, *blantoni*, *clavipes*, *costaricae* and *fittkai*, and transferred *Bezzia amnicola* Macfie and *Macropeza brasiliae* Lane to their new genus. Finally, Spinelli (1984) described *Neobezzia termophila* from northwestern Argentina.

The purpose of this paper is to present the description of two new species recently collected, *Mallochohelea limitrofe* from the Province of Corrientes, Argentina, and northwestern Uruguay, and *Neobezzia wirthi* from the Province of Corrientes, Argentina.

For an explanation of general ceratopogonid terminology see Downes & Wirth (1981); for special terms dealing with genera in the tribe Sphaeromiini, see Wirth (1962) and Wirth & Grogan (1979).

The holotypes of the new species are deposited in the Collection of the Museo de La Plata

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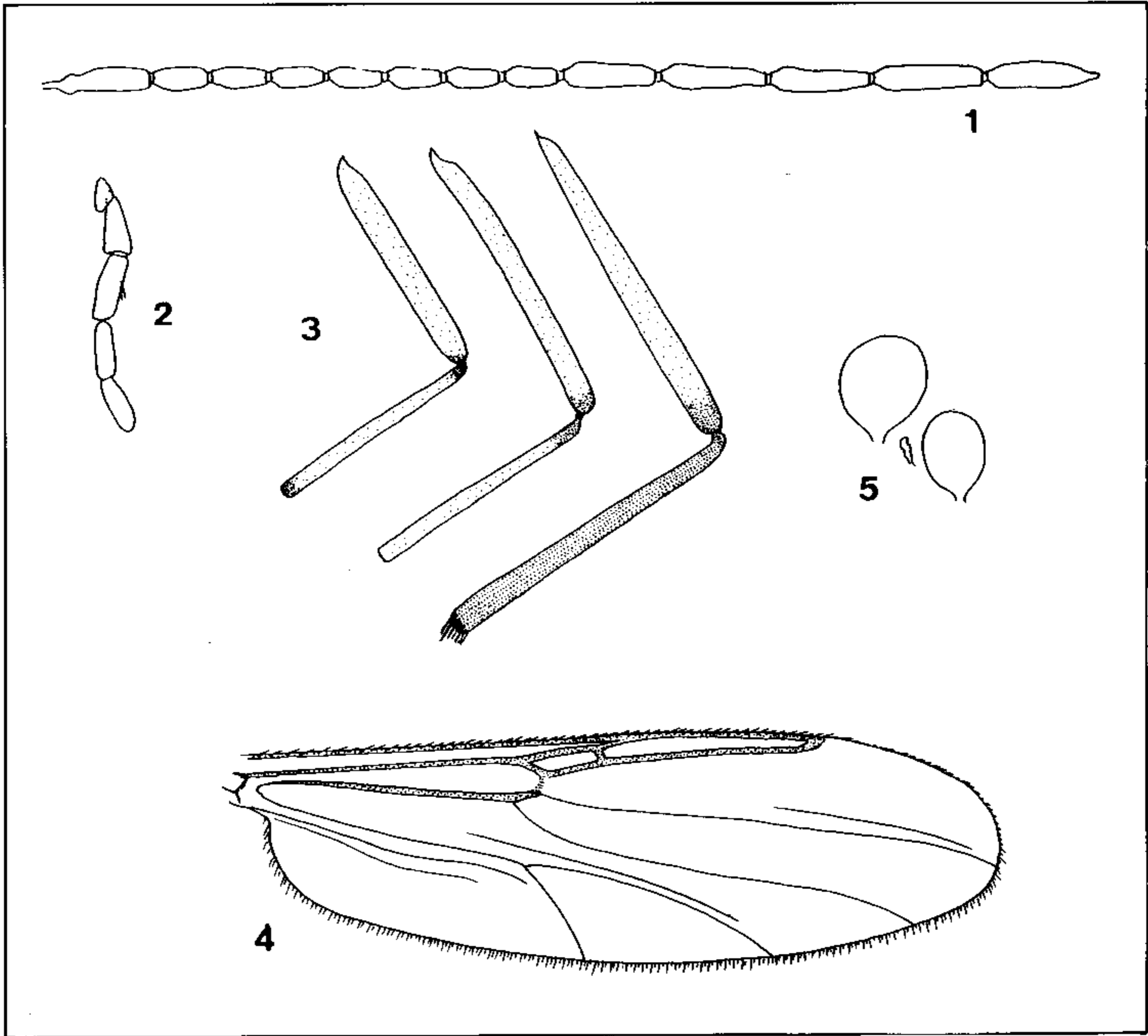
(MLP), Argentina, and paratypes of both species (no. 195-196) in the Collection of the Instituto Oswaldo Cruz (IOC), Rio de Janeiro, Brazil.

Mallochohelea limitrofe n. sp. (Figs 1-5)

Female: wing length 2.18 mm; breadth 0.69 mm.

Head: dark brown. Eyes bare, narrowly separated by a distance equal to diameter of 1 ommatidial facet. Antenna with scape pale brown, pedicel dark brown; flagellum (Fig. 1) entirely dark brown; lengths of flagellomeres in proportion of 26-12-12-12-12-12-13-12-21-24-23-25-25; antennal ratio 1.06. Palpus (Fig. 2) dark brown, lengths of segments in proportion of 7-14-16-13-14; palpal ratio 2.90; 3rd segment with scattered sensilla on inner margin. Mandible with 7-8 coarse teeth.

Thorax: entirely dark brown; scutum with two longitudinal rows of about 12 strong setae; 4 prealar setae, 1 postalar. Legs (Fig. 3) yellowish, hind tibia dark brown, knees darkish; hind tibial comb with 7 bristles, spur plumose. Tarsomeres 1-2 yellowish, 3-5 infuscated; a pair of stout, black, ventral spines at apices of tarsomeres 1-3 of mid leg; ventral palisade setae absent on fore tarsus, in one row on tarsomere 1 of mid leg and tarsomere 2 of hind leg, in two rows on tarsomere 1 of hind leg; hind tarsal ratio 2.30; 4th tarsomeres cordiform; 5th tarsomere with 14 moderately blunt-tipped batonnets on all legs; tarsal claws equal on all



Mallochohelea limitrofe, n. sp., female. Fig. 1: flagellum. Fig. 2: palpus. Fig. 3: legs (left to right), fore, mid and hind. Fig. 4: wing. Fig. 5: spermathecae.

legs, nearly straight, each with small, external basal tooth. Wing (Fig. 4) with costa extending to 0.77 of total length; membrane slightly infuscated, anterior veins dark brown; venation as figured; 2 radial cells, the 2nd 3 times as long as 1st; cell R5 with intercalary vein. Halter dark brown.

Abdomen: dark brown. Genital segment with a pair of tufts composed by 10 hairs. Two ovoid spermathecae with evident necks (Fig. 5), measuring 0.095 by 0.076 mm, and 0.076 by 0.057 mm.

Male: unknown.

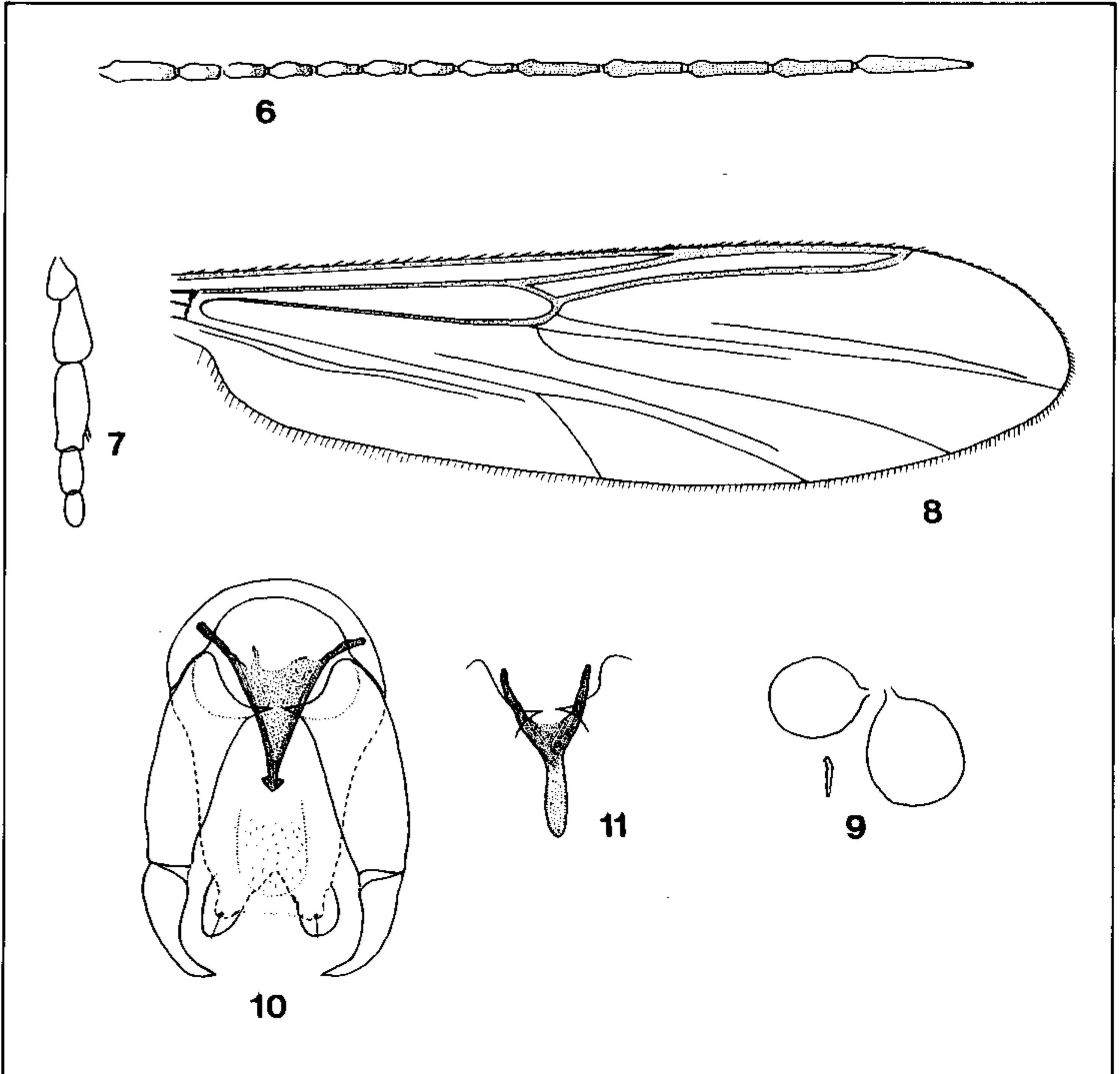
Distribution: Argentina (Prov. of Corrientes) and Uruguay (Dept. of Artigas).

Types: holotype female, Argentina, Corrientes, Monte Caseros (camping), 13.xi.1987, G. R. Spinelli, at light (MLP). Paratype female, Uruguay, Colonia San Gregorio ("arrocera de Conti"), 8/9.xii.1987, G. R. Spinelli, CDC trap (IOC).

Discussion: this species is similar to *Mallochohelea nigripes*, from which it can be distinguished especially by the yellowish legs (dark brown in *nigripes*), hind tarsal ratio 2.30 (2.00 in *nigripes*), and costal ratio 0.77 (0.87 in *nigripes*).

Neobezzia wirthi n. sp.
(Figs 6-11)

Female: wing length 2.73 (2.68-2.88, n = 3) mm; breadth 0.79 (0.75-0.83, n = 3) mm.



Neobezzia wirthi, n. sp. Figs. 6-9: female. Figs. 10-11: male. Fig. 6: flagellum. Fig. 7: palpus. Fig. 8: wing. Fig. 9: spermathecae. Fig. 10: genitalia (parameres removed). Fig. 11: parameres.

Head: dark brown. Eyes bare, separated by a distance equal to diameter of 2.5 ommatidial facets (0.045 mm). Antenna with scape pale brown, pedicel dark brown; flagellum (Fig. 6) dark brown, bases of flagellomeres 1-8 pale; lengths of flagellomeres in proportion of 26-14-14-14-14-15-17-25-25-25-26-36; antennal ratio 1.10 (1.07-1.15, n = 3). Palpus (Fig. 7) short, very dark brown; lengths of segments in proportion of 8-14-17-9-8; palpal ratio 2.35 (2.30-2.40, n = 3); 3rd segment with scattered, distal sensilla on inner margin. Mandible with 6-7 stout teeth.

Thorax: scutum very dark brown; 5 prealar setae, 1 postalar; scutellum yellowish, with 6-7

setae and numerous small hairs; postscutellum dark brown. Legs yellowish, knees blackish; distal 1/4 of fore femur and narrow apices of tibiae brownish; fore femur slightly swollen distally; hind tibial comb with 7 bristles. Tarsi yellowish, 5th tarsomeres dark brown; a pair of stout, black, ventral spines at apices of tarsomeres 1-3 of mid leg, smaller and paler on fore and hind legs; ventral palisade absent on fore tarsus, in one row on tarsomere 1 of mid leg and tarsomere 2 of hind leg, in two rows on tarsomere 1 of hind leg; hind tarsal ratio 2.65 (2.55-2.80, n = 3); 4th tarsomeres sub-cylindrical; 5th tarsomere with 12 moderately blunt-tipped batonnets on all legs; tarsal claws equal on all legs, nearly straight, each with

small, external basal tooth. Wing (Fig. 8) with costa extending to 0.82 ($n = 3$) of total length; membrane slightly infuscated, anterior veins yellowish brown; venation as figured; cell R5 with intercalary vein; vein M extending in cell M1, just below vein Ml. Halter knob dark brown, pedicel pale brown.

Abdomen: dark brown. Genital segment with a pair of tufts composed by 14-16 hairs. Two ovoid spermathecae with evident necks (Fig. 9), measuring 0.087 by 0.079 mm, and 0.076 by 0.069 mm; a vestigial 3rd present.

Male: wing length 1.65 mm; breadth 0.48 mm; costal ratio 0.74. Similar to female with the usual sexual differences. Flagellum missing. Genitalia (Fig. 10): ninth sternum short, with a deep, rounded, caudomedian excavation; 9th tergum elongated, tapering, with blunt apicolateral processes, each with a distal seta; 10th segment broad, rounded caudally, spiculate; cerci rounded. Gonocoxite slender, 3 times as long as greatest breadth, with a pointed anteromesal protuberance; gonostylus short, 0.55 as long as gonocoxite, slightly curved, with pointed tip. Aedeagus as long as basal breadth; basal arch very low, with irregular margins; basal arms well developed, slender, strongly sclerotized; main body slender and tapering to small, caplike tip. Parameres (Fig. 11) strongly sclerotized anteriorly, fused on distal halves; basal arch low, extending to 0.3 of total length; basal arms subparallel, strongly sclerotized.

Distribution: Argentina (Province of Corrientes).

Types: holotype female, allotype male, Argentina, Corrientes, Monte Caseros, 13.i.1987, L. Biestro, CDC trap (MLP). Two female paratypes, same anterior data except 22.x.1987, G. R. Spinelli, at light (1 in MLP, 1 in IOC).

Discussion: the female of *Neobezzia wirthi* is readily distinguished from the female of *Neobezzia amnicola* (Macfie) by the yellowish legs, costal ratio 0.82 (0.87 in *amnicola*), yellowish scutellum, shorter antennal ratio, smaller spermathecae, and by the presence of an intercalary vein in cell R5. The male genitalia differs in the basistyle, with a pointed anteromesal protuberance; by the broader aedeagus, with basal arms well developed; and by the parameres with lower basal arch and distal portion without a spatulate lobe.

This species is named in honor of Dr. Willis W. Wirth, in recognition of his outstanding contributions to the study of Ceratopogonidae during the past 40 years.

REFERENCES

- DOWNES, J. A. & WIRTH, W. W., 1981. Ceratopogonidae, p. 393-421. In J. F. McAlpine et al., eds., *Manual of Nearctic Diptera*, Vol. 1, Agriculture Canada, Ottawa.
- SPINELLI, G. R., 1984. Notas sobre Ceratopogonidae (Diptera: Nematocera) de la República Argentina. IV. Descripción de adulto y pupa de *Neobezzia termophila* sp. nov. *Neotropica*, 30: 197-200.
- WIRTH, W. W., 1962. A reclassification of the *Palpomyia-Bezzia-Macroepeza* groups, and a revision of the North American Sphaeromiini (Diptera: Ceratopogonidae). *Ann. Ent. Soc. Amer.*, 55: 272-287.
- WIRTH, W. W., 1974. *A catalogue of the Diptera of the Americas south of the United States*, 14. *Ceratopogonidae*. Museu de Zoologia, Univ. São Paulo, 89 p.
- WIRTH, W. W. & GROGAN, W. L. Jr, 1979. Natural history of Plummers Islands, Maryland. XXIV. Biting midges (Diptera: Ceratopogonidae). 2. The species of the tribes Heteromyiini and Sphaeromiini. *Proc. Biol. Soc. Wash.*, 91: 847-903.
- WIRTH, W. W. & RATANAWORABHAN, N. C., 1972. *Neobezzia*, a new Neotropical biting midge genus of the tribe Sphaeromiini (Diptera: Ceratopogonidae). *J. Kansas Ent. Soc.*, 45: 476-490.