Two New Neotropical Species of *Monohelea* Kieffer and *Downeshelea* Wirth & Grogan (Diptera: Ceratopogonidae)

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Two new Neotropical predaceous midges are described and illustrated, Downeshelea charrua *from Uruguay, and* Monohelea bidentata *from Argentina. The first species is described from female and male specimens; only one male is known from the second.*

Key words: Neotropical predaceous midges - *Downeshelea charrua* sp.n. - *Monohelea bidentata* sp.n.

Both genera, *Downeshelea* Wirth & Grogan and *Monohelea* Kieffer exhibit a worldwide distribution. Thirteen species of each genus have been recorded from the Neotropical region (Wirth 1974, Wirth & Grogan 1988), but none of them for Argentina and/or Uruguay.

In this paper we described two new species, *Downeshelea charrua* from the Department of Salto, Uruguay and *Monohelea bidentata* from the Province of Buenos Aires, Argentina.

The terminology used is that adopted by Wirth and Williams (1964) for North American species of *Monohelea*, Lane and Wirth (1964) for Neotropical species and Ratanaworabhan and Wirth (1972) for Oriental species.

Downeshelea charrua Felippe-Bauer & Spinelli new species (Figs 1-11)

Type locality: El Espinillar, Salto, Uruguay.

Female Allotype: wing length 1.56 mm; breadth 0.62 mm.

Head: reddish-brown. Eyes (Fig. 3) bare, narrowly contiguous in lower portion. Antenna (Fig. 4) brown, bases of flagellomeres 1-10 pale; flagellomeres cylindrical, with lengths in proportion of 35-23-25-26-26-27-27-27-39-39-40-43-53; A.R. (11-15/3-10) 0.99. Palpus (Fig. 7) uniformly brown, slightly longer than proboscis; lengths of segments in proportion of 14-25-30-25-22; 3rd segment cylindrical, with a small, shallow, rounded sensory organ in mid portion; P.R. 2.5. Mandible with 11-12 teeth.

Thorax: scutum golden brown, humeral pits whitish; scutellum dark in middle, with four strong setae. Legs (Fig. 5) brown, the hind slightly darker; basal 3/4 of mid femur and basal 2/3 of hind femur paler, knees yellowish; fore and hind tibiae with apical spur, longer in fore leg; hind tibial comb with eight bristles; lengths of trochanters, femora and tibiae of fore, mid and hind legs in proportion of 15-70-70, 15-85-85, 15-100-95. Tarsi (Fig. 6) pale, pilose; ventral palisade setae in one row on hind basitarsus; fore and hind basitarsi with one basal and one apical

Wing photographs of *Downeshelea charrua* sp.n. Fig. 1: female. Fig. 2: male.

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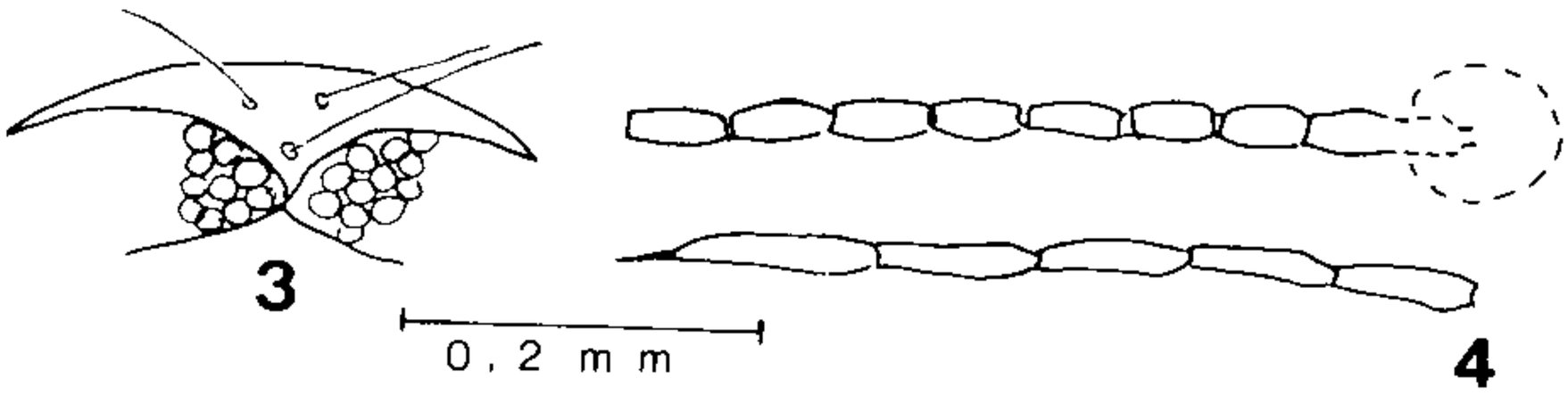
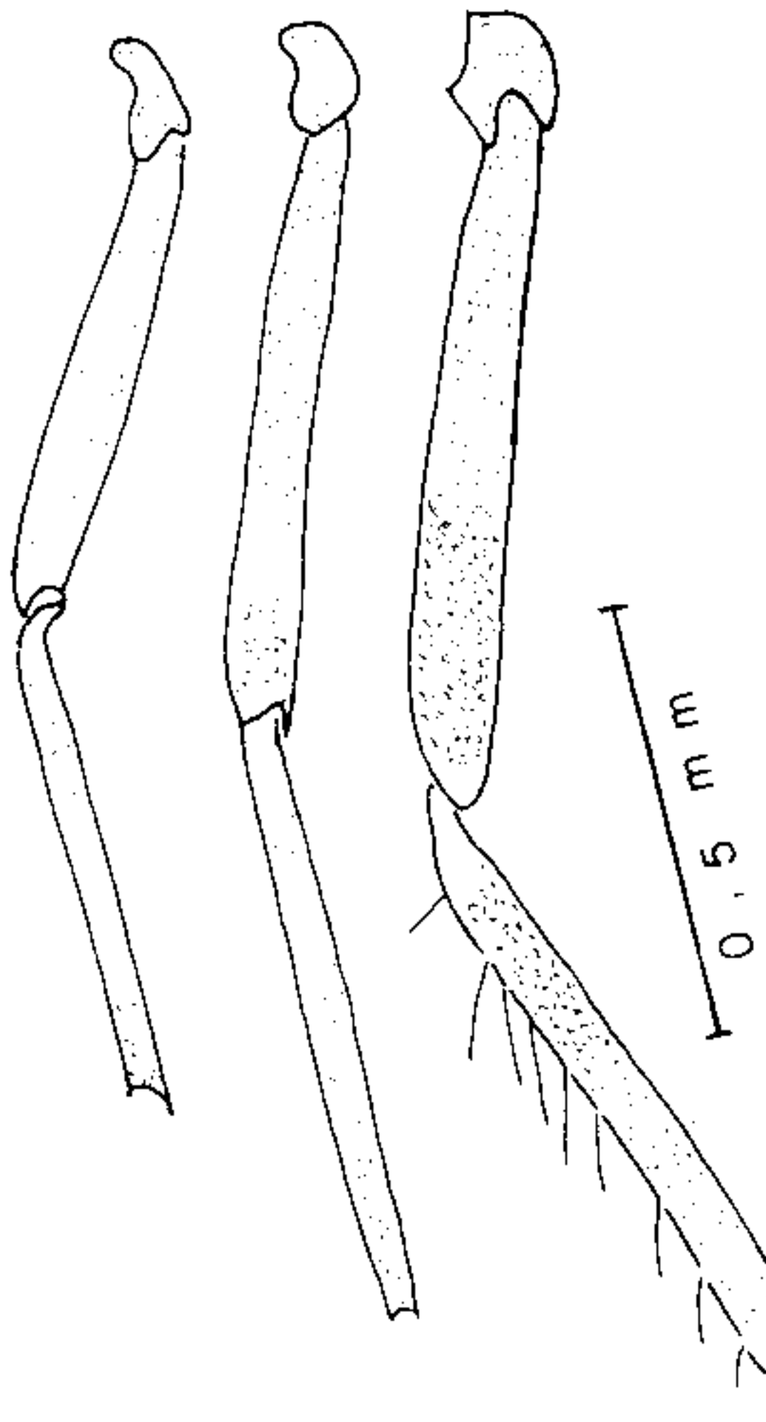
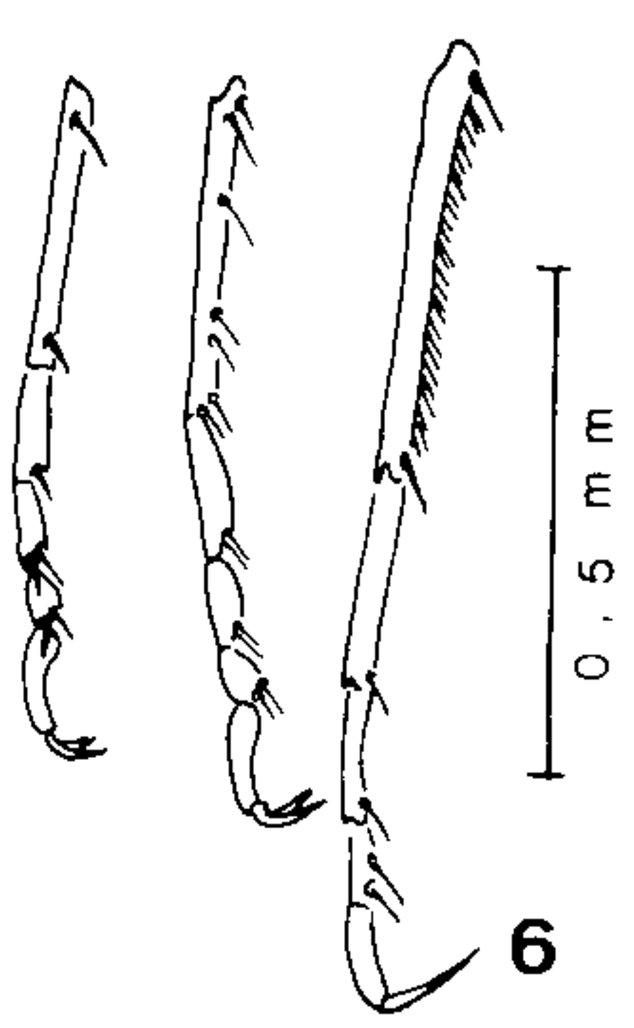
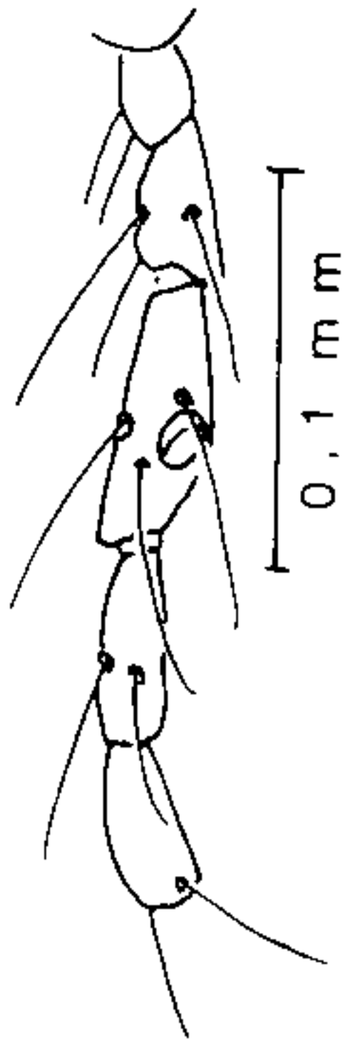
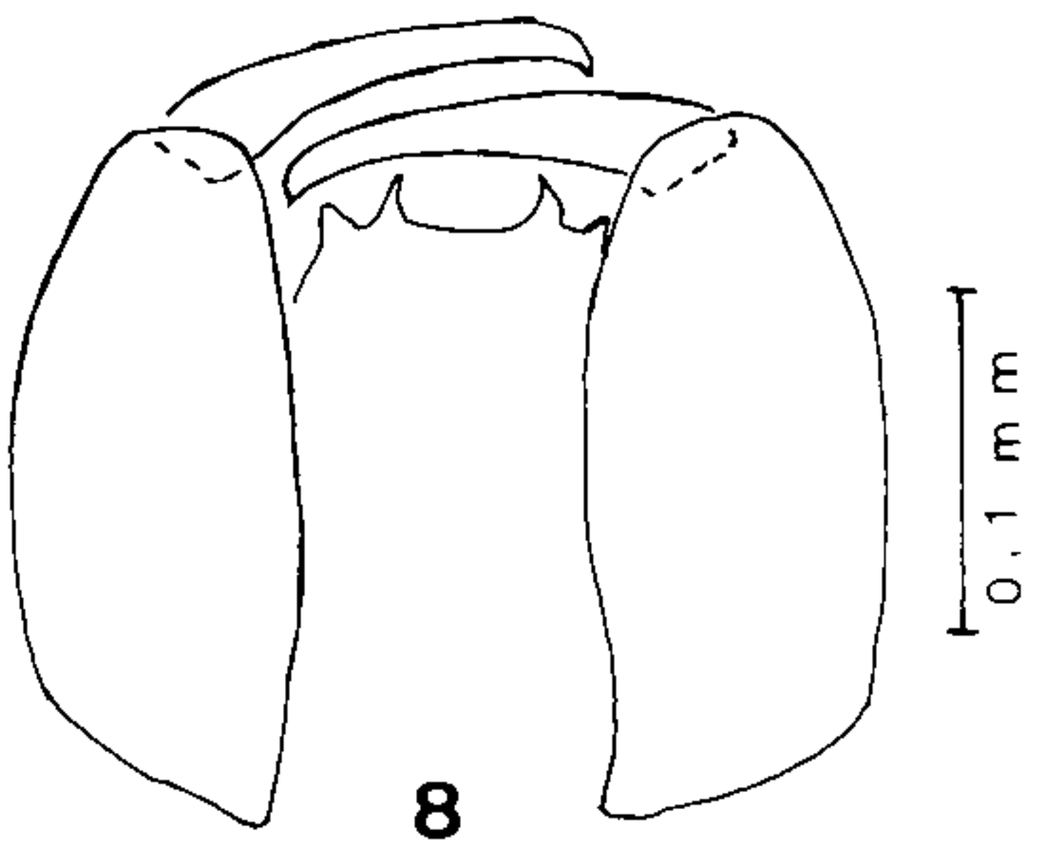
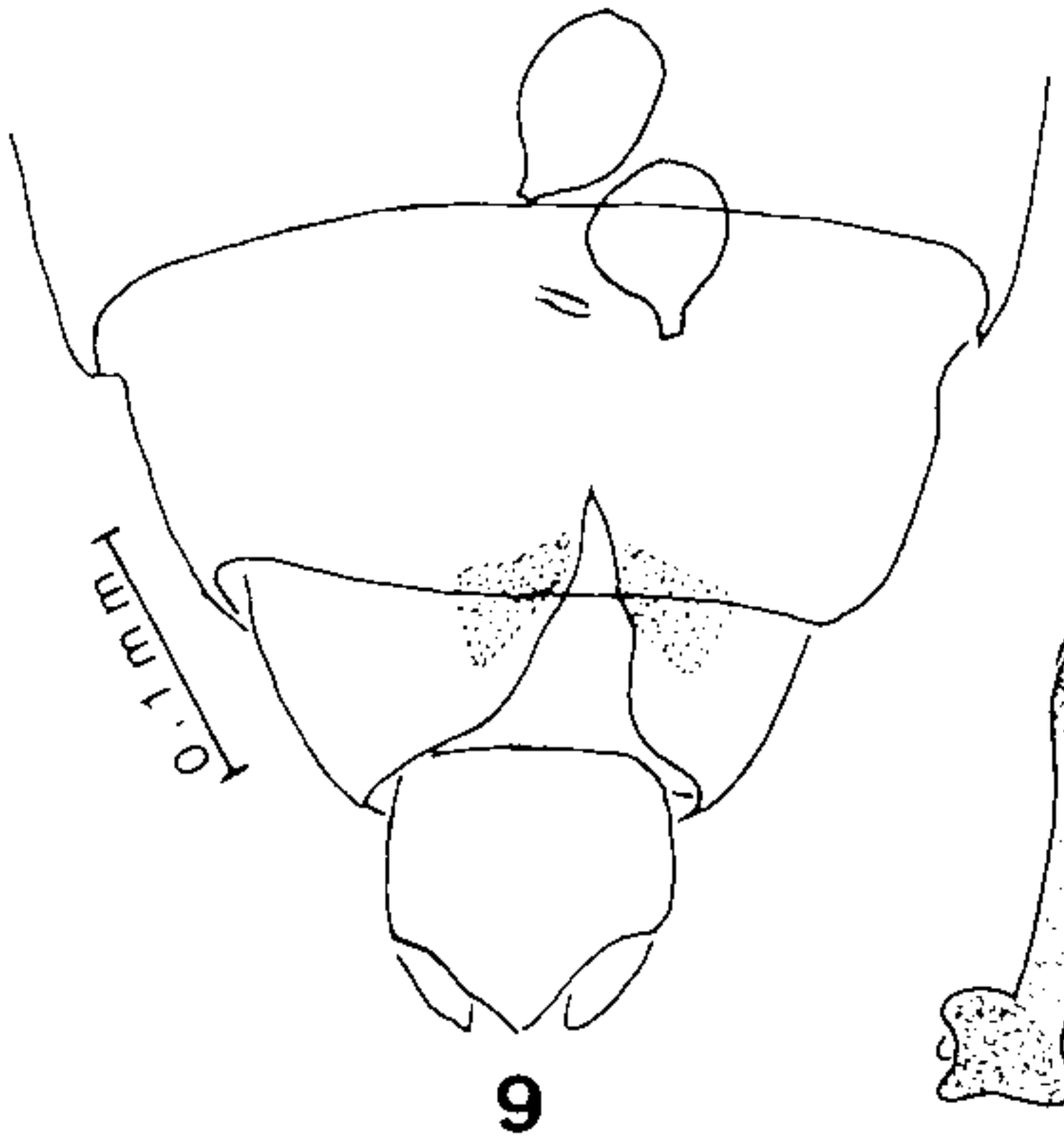


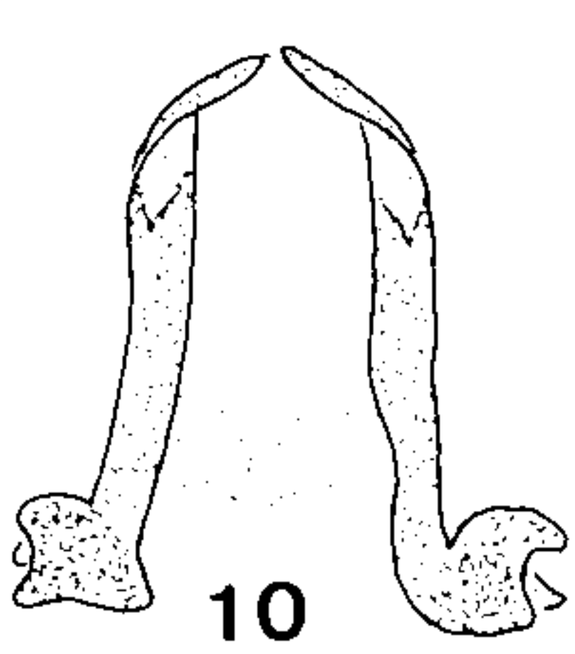


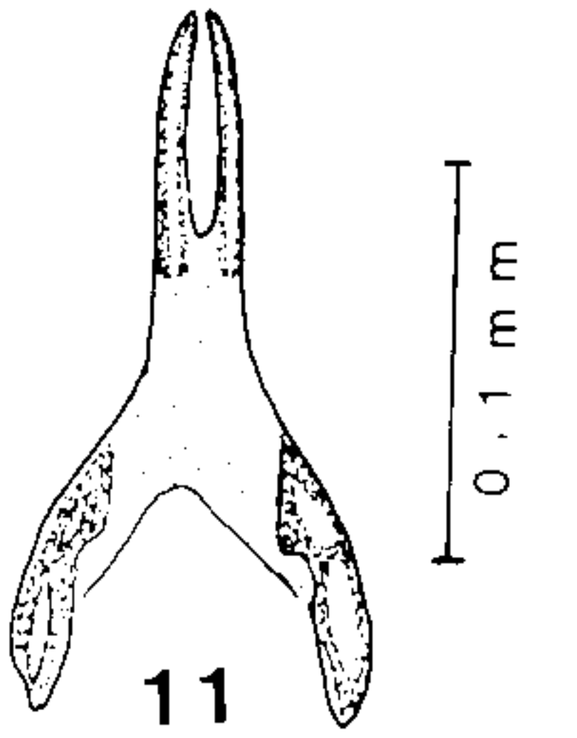












Downeshelea charrua sp.n. Fig. 3: eyes separation. Fig. 4: ♀ antenna. Fig. 5: legs (left to right) fore, mid and hind. Fig. 6: tarsi (left to right) fore, mid and hind. Fig. 7: ♀ palpus. Fig. 8: ♂ genitalia, aedeagus and parameres removed. Fig. 9: ♀ abdomen, showing spermathecae. Fig. 10: parameres. Fig. 11: aedeagus.

spine; mid basitarsus with 2 basal, 2 apical and 3-4 ventral spines; apical spines of tarsomeres 2-4 of fore, mid and hind legs as follows: 1-2-2, 2-2-2, 1-1-2, basal spines absent; lengths of fore, mid and hind tarsomeres in proportion of 35-16- 11-8-13, 41-16-12-7-14, 55-25-15-10-21; fore, mid and hind tarsal ratios 2.2, 2.6, 2.2; claws of fore and mid legs paired, equal sized, about 0.6 times as long as 5th tarsomere; hind leg with a single claw, about 1.4 times as long as 5th tarsomere. Wing (Fig. 1) hyaline, scattered macrotrichia distally in cells R5 and M1, microtrichia absent; 2 conspicuous dark spots, one located on the r-m crossvein reaching the medial fork (where is much darker), the other in cell R5, extending from the end of 2nd radial cell to vein M1; 6 inconspicuous grayish, difuse areas in apical portions of cells R5, M1, M2 (this one reaching vein M2) and M4, and veins M1 and Cu1; 2nd radial cell nearly twice as long as 1st; costal ratio 0.78. Halter knob dark brown.

Abdomen: brown. Two ovoid spermathecae (Fig. 9), slightly unequal, measuring 0.069 by 0.048 mm, and 0.053 by 0.048 mm; a vestigial 3rd present, 0.018 mm long.

Male Holotype: wing length 1.40 mm; breadth 0.46 mm. Similar to female with usual sexual differences; antenna with brown pedicel, flagellomeres pale brown except flagellomeres 13-15 brown; 4-11 somewhat barrel-shaped, 12 nearly twice as long as wide, 13-15 elongated, lengths of flagellomeres in proportion of 64-22-22-22- 20-20-20-20-20-27-63-51-47; A.R. (12-15/3-11) 0.82. Palpus uniformly brown; lengths of segments in proportion of 12-24-26-23- 28; P.R. 2.6. Lengths of trochanters, femora and tibiae of fore, mid and hind legs in proportion of 14-65-64, 13-77-75, 14-84-80. Tarsi pale, pilose; fore basitarsus with one basal and one apical spine; mid basitarsus with 2 basal, 2 apical and 2-4 ventral spines; hind basitarsus with one basal and 2 apical spines; apical spines of tarsomeres 2-4 of fore, mid and hind legs as follows: 1-2-1, 2-2-2, 2-1-1, basal spines absent; lengths of fore, mid and hind tarsomeres in proportion of 32-16-12-8-10, 40-17-11-8-9, 48-22-17-10-11; fore, mid and hind tarsal ratios 2.0, 2.3, 2.2; claws paired, equal-sized, about 0.4 times as long as 5th tarsomeres. Wing (Fig. 2) hyaline, dark spots as in female, costal ratio 0.73. Genitalia (Fig. 8): posterior margin of 9th sternum with two long hairs; 9th tergum tapered, with a pair of very short apicolateral processes. Gonocoxite nearly 2.4 times as long as basal wide; gonostylus nearly straight, gradually narrowed to apex, about 0.68 times as long as gonocoxite, moderatelly pilose basally. Aedeagus (Fig. 11) triangular, basal arch extending to 0.3 of total length; lateral arms strongly sclerotized; distal portion with two long, slender, sclerotized processes, each with blunt apex. Parameres (Fig. 10) H-shaped, each lateral sclerite with strongly sclerotized, trilobed basal arm; main portion stout, nearly straight, 0.85 times as long as aedeagus, apices mesally curved.

Distribution: known only from the type locality.

Types: holotype ♂; allotype ♀, El Espinillar, Salto, URUGUAY, 24.IV.1985, G. Spinelli coll. In the collection of the Museo de La Plata, Argentina.

Etymology: the specific epithet refers to the Charrua indians, early inhabitants of the type locality.

Discussion: Downeshelea charrua most closely resembles *D. fuscipennis* (Lane & Wirth), *D. castroi* (Tavares & Pereira) and *D. cebacoi* (Lane & Wirth) by similar wing pattern, which exhibits a distinctive dark spot apically in cells R5 and M1. They can be easily separated by the shape of aedeagus and parameres. Furthermore, in *D. charrua* the aedeagus is longer than the parameres, while in *D. fuscipennis, D. castroi* and *D. cebacoi* it is smaller.

Monohelea bidentata Felipe-Bauer & Spinelli new species (Figs 12-17)

Type locality: Punta Lara, Buenos Aires, Argentina.

Male Holotype: wing length 1.21 mm; breadth 0.38 mm.

Head: dark brown. Eyes bare, separated by a distance equal to diameter of 2 ommatidial facets. Antenna yellowish, pedicel and flagellomeres 13-15 brown; 4-11 somewhat barrel-shaped, 12

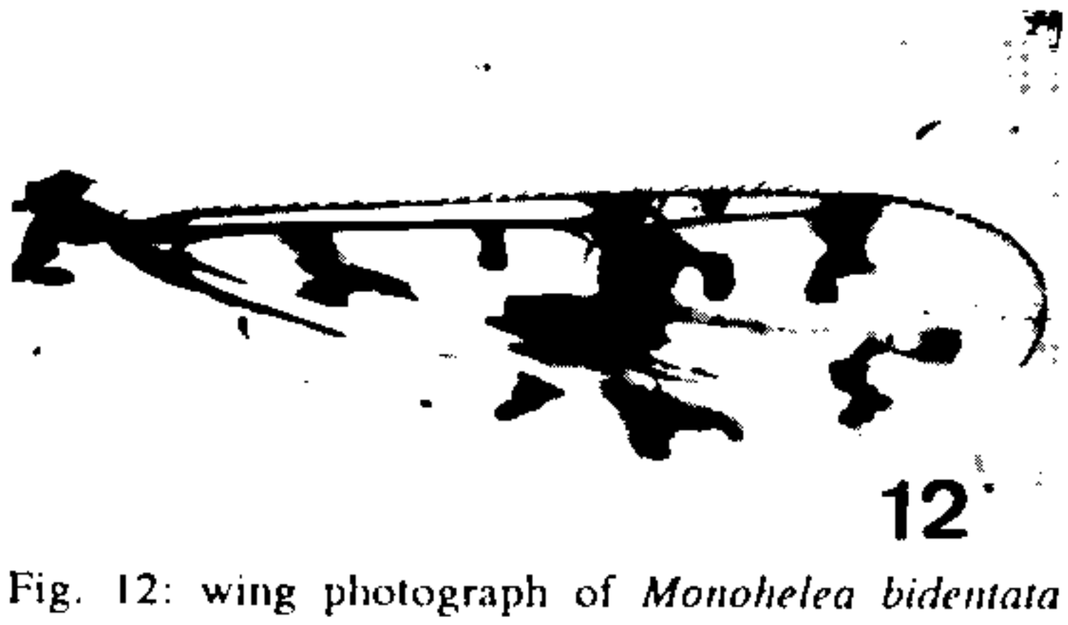
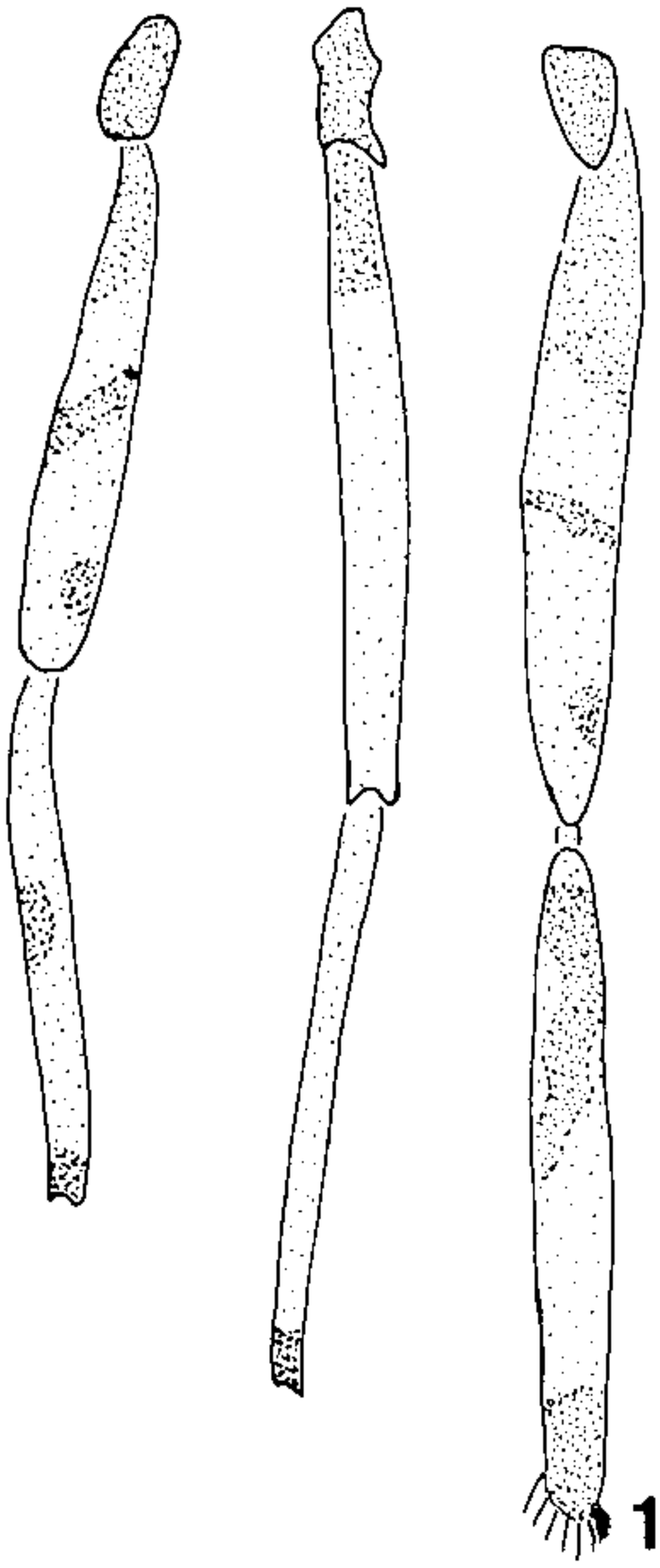


Fig. 12: wing photograph of *Monohelea bidentata* sp.n., ♂.

about three times as long as wide, 13-15 elongated; lengths of flagellomeres in proportion of 54-17-17-15-15-15-15-15-15-20-55-55-51; A.R. 1.0. Palpus uniformly pale brown; lengths of segments in proportion of 14-17-18-14-25; 3rd segment ovoid; P.R. 2.0.

Thorax: scutum golden brown, humeral pits whitish. Legs (Fig. 14) brown, hind leg slightly darker; proximal 1/2 of femora dark; fore and



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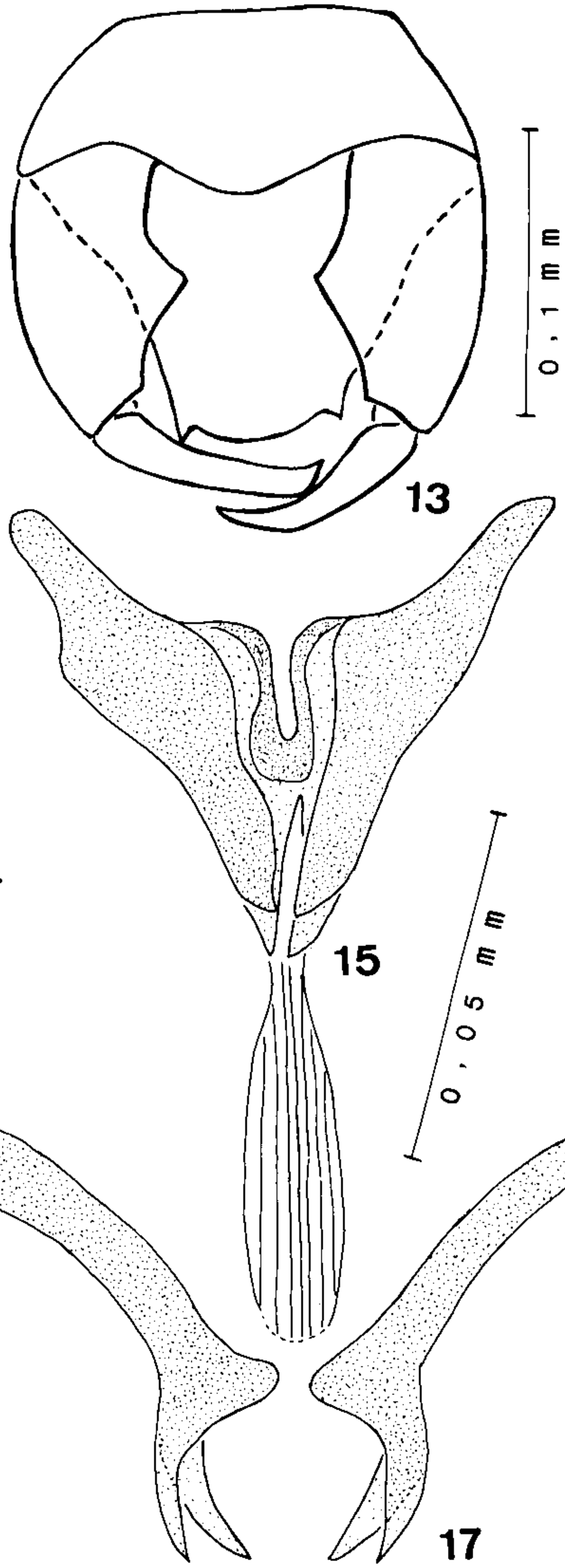

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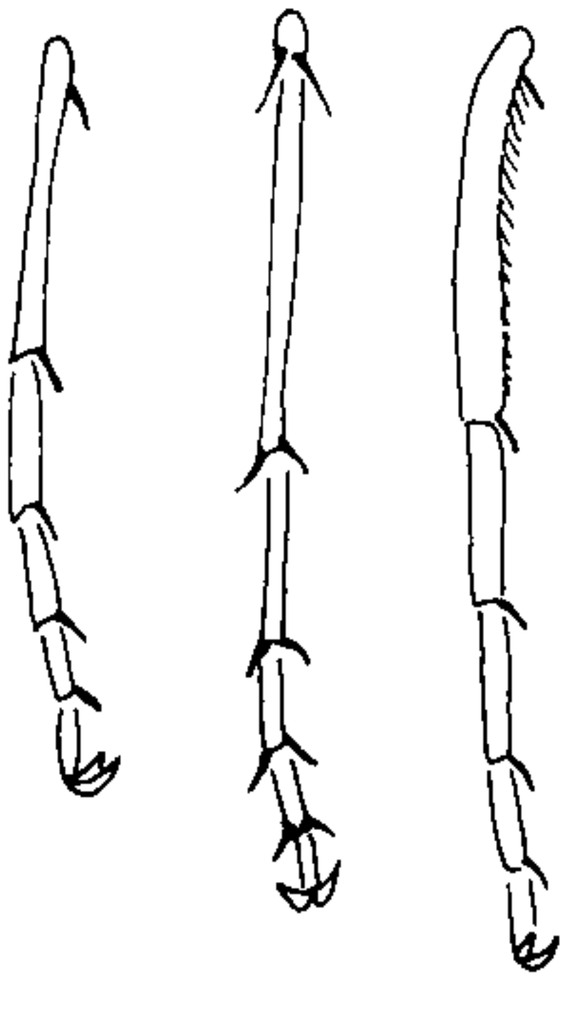

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Monohelea bidentata sp.n.,♂ Fig. 13: genitalia, aedeagus and parameres removed. Fig. 14: legs (left to right) fore, mid and hind. Fig. 15: aedeagus. Fig. 16: tarsi (left to right) fore, mid and hind. Fig. 17: parameres.

hind femora with a narrow, oblique, dark brown stripe in middle, and a subapical, dorsal, dark brown mark; knees yellowish; apices of tibiae dark brown, fore tibiae dark mesally hind tibiae broadly dark brown basally; fore and hind tibiae with apical spur, longer in fore leg; hind tibial comb with 6 bristles; lengths of trochanters, femora and tibiae of fore, mid and hind legs in proportion of 11-50-51, 11-61-56, 12-67-65. Tarsi (Fig. 16) pale, pilose; ventral palisade setae in one row on hind basitarsus; fore and hind basitarsi with one basal and one apical spine, mid basitarsus with 2 basal and 2 apical spines; apical spines of tarsomeres 2-4 of fore, mid and hind legs as follows: 1-1-1, 2-2-2, 1-1-1, basal spines absent; lengths of fore, mid and hind tarsomeres in proportion of 27-14- 10-7-7, 36-15-9-7-7, 34-16-11-9-7; fore, mid and hind tarsal ratios 1.9 - 2.4 - 2.1; claws paired, equal-sized, about 0.4 times as long as 5th tarsomeres. Wing (Fig. 12) with irregular dark areas and spots, defining the hieroglyphic pattern; macrotrichia absent; 2nd radial cell nearly twice as long as 1st; costal ratio 0.79. Halter stem pale, apical 1/2 of knob brown.

Abdomen: brown, segments 1-2 yellow. Genitalia (Fig. 13): yellowish. Ninth tergum tapered, with a pair of short apicolateral processes. Gonocoxite moderately stout, nearly twice as long as basal wide, with a prominent internal lobe; gonostylus nearly straight, slightly shorter than gonocoxite, gradually narrowing to apex, moderately pilose basally, tip dark. Aedeagus (Fig. 15) triangular with 2 pointed ventral plates, and a slightly sclerotized dorsal structure produced beyond apices of ventral plates; it is also present an apical, hyaline, scape-shaped structure, which reachs the end of 9th tergum. Parameres (Fig. 17) as long as aedeagus, separated; each with strongly sclerotized, nearly straight, mesally directed lateral arms; distal portion with a pair of tooth-shaped processes, their bases internally directed.

Female: unknown.

Distribution: known only from the type locality.

Type: holotype ♂, Punta Lara, Buenos Aires, ARGENTINA, 29.X.1985, G. Spinelli coll. In the collection of the Museo de La Plata, Argentina.

Etymology: the specific epithet is from the Latin: *bi*=two, and *dentis*=tooth, referring the apical tooth-shaped processes of parameres.

Discussion: Monohelea bidentata most closely resembles *M. maculipennis* (Coquillett) by the wing and legs patterns. It can be readily separated from *M. maculipennis* by the distinct parameres with apical tooth-shaped processes, and by the aedeagus with an apical, hyaline, scape-shaped structure.

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