THE SULAWESI GENUS *BRACHYLOBOPYGA* (HOMOPTERA: CICADIDAE)

by

J. P. DUFFELS

**Abstract**


The discovery of the new cicada species *Brachylobopyga montana* and the alleged synonymy of *B. decorata* Duffels, the type species of the genus, to *Cicada toradja* Breddin prompted a reconsideration of the genus *Brachylobopyga*. The distribution of this genus is compared with the pattern of endemism displayed by its supposed sister genus *Dilobopyga*.

Key words. — Cicadidae; Brachylobopyga; key; Indonesia; biogeography.

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**Introduction**

The genus *Brachylobopyga* was erected for a new species, *B. decorata*, from Sulawesi (Duffels 1982). This species was described from Bua Kraeng (1650 m), a mountain peak NW of Gunung Lompobatang in an isolated massif in the southwestern arm of Sulawesi. Another species of this genus, already mentioned by Duffels (1986), was recently collected at high altitudes (1600-1900 m) in Central Sulawesi. This new species is described here as *Brachylobopyga montana*.

In connection with my current studies of Sulawesi cicadas, I have scrutinized again the species with uncertain systematic position described by Breddin (1901). This led to the conclusion that *Brachylobopyga decorata* is identical to *Cicada toradja* Breddin, 1901.

**Taxonomy**

*Brachylobopyga* Duffels


Type species: *Brachylobopyga decorata* Duffels, 1982 (= *Brachylobopyga toradja* Breddin, 1901).

The genus was characterized (Duffels 1982) by a long, strongly chitinized, apically flattened aedeagus and a narrow pygofer with parallel lateral sides and, apically truncate, lateral processes. *B. montana* is attributed to *Brachylobopyga* because of the very similar structure of the aedeagus, though the pygofer of this species is widest across the middle (fig. 2) and has short, apically rounded, lateral processes (fig. 3). *B. montana* also differs from *B. toradja* in the relatively shorter basal pygofer lobes and in colouration and black body marking. The male opercula are very alike, viz., very long and narrowing to the apices.

The discovery of the new species of *Brachylobopyga* shows that the long, strongly chitinized, apically flattened aedeagus remains a synapomorphy for *Brachylobopyga*, but the short and rounded lateral process of the pygofer makes less certain that *Brachylobopyga* is the sister genus of *Dilobopyga* (cf. cladogram of the subtribe Cosmopsaltriaria in Duffels 1986: fig. 2).

**Key to the species of *Brachylobopyga***

— Underside of postclypeus with small, median, black-brown spot at one third from anterior margin. Ground colour of male abdomen and timbal covering yellowish brown. Pygofer with truncate lateral lobes, long basal lobes and parallel lateral sides (Duffels 1982: figs. 4 & 5). Clasper long, reaching to halfway the length of the pygofer, and narrowing to its apex (Duffels, 1982: figs. 4 & 7). Body length $\varphi$: 25.7—30.2 mm ................. *toradja*
— Underside of postclypeus with fairly broad, median fascia. Ground colour of male abdomen castaneous brown; timbal covering black-brown. Pygofer with rounded lateral lobes, short basal lobes and widest across the middle (figs. 2 & 3). Clasper short, shaped as in fig. 4. Body length \( \varnothing: 30-34.5 \text{ mm} \ldots \) _montana_

**Brachylobopyga toradja** (Breddin, 1901)

comb. n.

*Cicada toradja* Breddin, 1901: 109-111.

*Cosmopsaltria toradja*, Sharp 1903: 279.

*Cicada (?) toradja*, Distant 1906: 41; Distant 1912: 31.


*Brachylobopyga decorata* Duffels, 1982: 156-159, figs. 1-8 (syn. n.).

**Synonymy.** — Breddin described _Cicada toradja_ from South Celebes (= Sulawesi Selatan): "Wawokaraeng, 5000 Fuss, Febr. (Frusth.)". The description was probably made from one male specimen only, since measurements are given for one specimen. The type should be in the "Institut für Pflanzenschutzforschung der Akademie der Landwirtschaftswissenschaften der DDR" in Eberswalde, like the types of all cicadas described in Breddin’s 1901 publication. Unfortunately, the type could not be located in the Eberswalde collection (pers. comm. Dr. G. Petersen, 1.vii.1985). This was not unexpected since the type was not listed in Gaedike’s catalogue of type specimens in the collection of this institute (1971). Earlier study of two other cicada types of Breddin revealed that the original identification labels of Breddin were removed while new labels with identifications of A. Jacobi were added (Duffels 1977: 144, 147). This may have happened also to the type of _Cicada toradja_. Breddin’s description of this species perfectly fits _Brachylobopyga decorata_ especially in the marking of the body and the characteristic shape of operculum and pygofer lobes. Locality, altitude, month of collecting and collector of Breddin’s type of _C. toradja_ are identical to those of the type-series of _B. decorata_, of which all specimens have identical labels. It is obvious that these specimens and Breddin’s specimen of _C. toradja_ are part of the same series. Breddin (1901: 3) mentioned that he studied a part [sic!] of the Hemiptera collections made by H. Fruhstorfer in Minahassa and SouthCelebes in 1895-1896. The considerations given so far lead to the conclusion that _Brachylobopyga decorata_ is a junior synonym of _Cicada toradja_.

**Description.** — For an extensive description of this species the reader is referred to the original descriptions of _C. toradja_ and _B. decorata_.

**Distribution.** — Bua Kraeng (= Wawokaraeng), a mountain peak in an isolated massif in South-West Sulawesi, SE of Ujung Pandang.

**Brachylobopyga montana** sp. n. (figs. 1—8)

**Description.** Ground colour of head and thorax light ochraceous, in some specimens with a greenish tinge. Ground colour of abdomen brownish.

**Head.** — Male: Supra-antennal plates for the greater part black. Vertex with large, round, black spot enclosing ocelli and reaching from frontoclypeal suture to, or nearly to, anterior pronotum margin, a pair of fairly large triangular spots next to median spot and a pair of small, oval spots medio-proximally of eyes. Anterior part of postclypeus black, this black part encloses a round, pale ochraceous spot at anterior postclypeus margin and continues on underside of postclypeus in a black median fascia, which is anteriorly as wide as anterior ochraceous spot and narrows strongly to clypeal suture. Anteclypeus with, sometimes faint, brown, median spots at mid-length. Medial margin of mandibular plate black along anteclypeus. Rostrum ochraceous, its dark brown apex just reaching trochanter of hind legs.

**Female:** As in male but spots next to median spot considerably smaller.

**Pronotum.** — Male: Markings black. Central fasciae either very narrow or extremely thin or lacking in the middle, anteriorly strongly widened into black line along pronotum margin, posterior ends semicircular. Black lines lie above proximal ends of anterior oblique fissures. Two pairs of black marks between both pairs of oblique fissures are broadly connected with black anterior oblique fissures. Posterior oblique fissures and lateral part of ambient fissure filled with broad, irregular, black fasciae. Pronotum collar with weakly developed, very obtuse, latero-distal tooth and a very indistinct, brownish spot on latero-proximal corner.

**Female:** As in male but spots between oblique fissures smaller and black colouration of fissures much narrower.

**Mesonotum.** — Male: Fasciae black. Median fascia narrow anteriorly, widening to 4—5 times its anterior width at 3/5 its length and narrowing again towards cruciform elevation. Paramedian fasciae converge slightly from anterior mesonotum margin to half the length of mesonotum disk; they are anteriorly as broad as anterior part of median fascia but widen considerably toward their posterior ends. A pair of fairly large spots is situated in front of anterior angles of cruciform elevation.
Areas between median and paramedian fasciae chocolate brown. Lateral fasciae broad with some irregular black spots next to its anterior part; fasciae embedded in chocolate brown. Cruciform elevation yellow ochraceous, apices of its anterior arms black.

Female: Marking less developed. Anterior half of lateral fasciae clouded with brown.

Legs. — Light brown. Fore femur with a black line along its underridge, which connects a proximal, fairly long, appressed, dark spine and a shorter, more distally placed, erect, dark spine. Upper sides and insides of femora with longitudinal, brown lines. Underside of fore tibia and its distal end all around dark brown; middle tibia dark brown apically. Tarsi of fore and middle legs blackish brown.

Tegmina and wings. — Hyaline. Venation of tegmen light brown variegated with brown-black parts, and turning brown-black apically. Venation of wing dark brown. Tegmina with fairly broad infusions at bases of 2nd and 3rd apical areas; two paratypes also very lightly infuscated at apices of veins of 2nd, 3rd (and 4th) apical areas.

Operculum. — Male (fig. 7): Castaneous and long, reaching posterior margin of sixth abdominal segment. Surface of operculum fairly convex and rugose. Operculum at its widest close to its base and tapering to fairly narrow and rounded apex. Medial margin nearly straight but very slightly concave at two thirds of its length in holotype and one paratype. Lateral margin weakly convex.

Female (fig. 8): Light brown, just reaching posterior margin of abdominal segment 2. Latero-proximal corner black. Lateral margin basally sinuate. Latero-distal angle rounded. Posterior margin almost straight, but slightly curved toward meranthus.

Abdomen. — Male: Ground colour castaneous brown. Timbal coverings blackish brown (fig. 6). Segment 2 with more or less distinct, blackish brown, middorsal triangle at anterior margin. Anterior and posterior margins of segments 2 and 7 dorsally dark brown. Segments 3—6 with a pair of sublateral dark spots at half the segment's height. Distal half of segment 7 ochraceous. Ventral side of abdomen castaneous, posterior margins of segments 3—5 somewhat darker brown.

Female: Brownish with scattered pilosity on dorsal surface. Posterior margin of segment 2 black. Segments 2—4 with black transverse marks at posterior margins and similar but smaller marks on segments 5—7. Segments 4—7 with sublateral, round black spots. Segment 9 with two paramedian obconical black marks.

Male genitalia. — Lateral processes of pygofer short and apically rounded (fig. 3). Cup of pygofer formed by the basal lobes U-shaped; basal pygofer lobes distinctly shorter than in B. toradja (fig. 2). Clasper with apical and subapical hooks, both directed laterad (fig. 4). Aedeagus chitinized, very long and strongly curved, apex flattened and pointed (figs. 3 & 5).

Measurements. — Body length ♂ 30—34.5 mm, ♀ 25.0 mm; head width ♂ 9.5—10.0 mm, ♀ 9.1 mm; pronotum width ♂ 9.7—10.7 mm, ♀ 9.6 mm; mesonotum width ♂ 8.7—9.2 mm, ♀ 8.5 mm; tegmen length ♂ 40.6—42.0 mm, ♀ 40.0 mm.

Holotype, ♂, "Indonesia, Sulawesi Tengah / Lore Lindu N.P.", "10 km SE Poloka / 1900 m, 25.iii.1985 / J. P. & M. J. Duffels", "Sta 55 / Disturbed lower / montane forest mL-light, canopy". Paratypes, Indonesia, Sulawesi
Figs. 2—8. Brachylobopyga montana. — 2, pygofer in ventral view, holotype; 3, apical part of pygofer in lateral view, holotype; 4, right clasper in lateral view, holotype; 5, apical part of aedeagus, paratype Puncak Dingin; 6, left timbal covering, paratype Puncak Dingin; 7, male abdomen with operculum in ventro-lateral view, holotype; 8, female operculum in ventro-lateral view, paratype.

Tengah: 1 ♂, same data as holotype; 1 ♂, Lore Lindu N.P., Rano Rano, 1600 m, 10 km NE of Gimpu, 15.iii.1985, J. P. & M. J. Duffels, stat. 43, Lower montane forest, ML-light; Puncak Dingin, ca. 1700 m, 15.x.1985, S. Nagai leg., 1 ♀, same data but 21.x.1985, 1 ♂.

Other material (freshly emerged, not fully coloured and somewhat crushed): Puncak Dingin, ca. 1700 m, 15.x.1985, S. Nagai leg., 1 ♂, same data but 21.x.1985, 1 ♂, 15.xi.1985, 1 ♂. The holotype and the paratype from Rano Rano are deposited in the Instituut voor Taxonomische Zoölogie (Zoölogisch Museum), Amsterdam; the other paratype from Poloka is in the Museum Zoologicum Bogoriense, Bogor; the material from Puncak Dingin is in the collection of Dr. M. Hayashi, Urawa, Japan.

Distribution. — The species is recorded from lower montane forest in Sulawesi Tengah. Rano
Rano (1600 m) is situated in the mountain range east of the valley of Salo Palu, 85 km South of Palu and 10 km E of Gimpu. Poloka (1900 m) is situated along the road from Palu to Sedeo, about 65 km SE of Palu. This is very close to, or perhaps about the same locality as, Puncak Dingin (ca. 1700 m), which is on the southern slope of Mt. Roreka-ofimbu (M. Hayashi, pers. comm.).

**Biogeography**

The supposed sister genus of *Brachylobopyga* is *Dilobopyga*, which is distributed in Sulawesi including Muna and Buton (with 30 species), Sangihe Is. (1 species), Selayar (1), Banggai archipelago (2), Sula Is. (1) and South Maluku (1) (Duffels 1986, in press). Up to now, only ten out of these 36 species of *Dilobopyga* have been described. Species of *Dilobopyga* are found from sea-level to 1600 m mainly in rainforest habitats, though some species are found in other vegetation types and gardens. Preliminary phylogenetic studies of this genus show that monophyletic groups are centred in North and Central Sulawesi, in SW Sulawesi, and in East Sulawesi.

The two species of *Brachylobopyga* are found in high altitude rainforest areas (1600—1900 m). *B. toraja* seems to be restricted to the isolated mountain massif of SW Sulawesi. From this area only one endemic *Dilobopyga* species (*D. margaritae* Duffels) and one widespread species (*D. minahassae* (Distant)) have been recorded. *B. montana* is found in Central Sulawesi, where several species of *Dilobopyga* and one or two monophyletic species groups of this genus have a very restricted distribution.

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**References**


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