

Cosmopsaltria kaiensis n. sp., a new cicada from the Kai Islands, Indonesia (Homoptera: Cicadidae)

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Abstract: *Cosmopsaltria kaiensis* is described and attributed to the *C. papuensis* group. The biogeography of the *papuensis* group is briefly discussed because of its phylogenetic relationships and present distribution.

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Introduction

The new species belongs to the monophyletic genus *Cosmopsaltria* Stål of the subtribe *Cosmopsaltriaria*. The genus now contains 21 known species, which are restricted to New Guinea and adjacent islands (19 species) and Maluku (= Moluccas) (2 species); *C. vitiensis* (Distant) from the Fiji Islands is doubtfully included in the genus (Duffels, 1983). Three New Guinea species extend their ranges to Aru Islands, Bismarck Archipelago and the islands around the Vogelkop peninsula (= Tjendrawasih) respectively. However, none of these archipelagos have island- or island group endemics. The present paper describes a new species from the Kai Islands which lie 150 km west of Aru.

Cosmopsaltria kaiensis n. sp (figs. 1-4)

Type material: ♂ holotype, "Kei-Inseln/1912" (printed on grey-brown paper), "Genus/Cosmopsaltria" (handwritten), collection Musée Zoologique de l'Université Louis Pasteur et de la Ville Strassbourg.

Description

Head distinctly narrower than pronotum. Ground colour of head and thorax ochraceous with black and brown marking. Abdomen castaneous brown dorsally and light ochraceous ventrally.

Head. Head distinctly narrower than pro-

notum and slightly narrower than mesonotum. Supra-antennal plates with brown triangle at anterior margin. Ocelli connected by black tri-

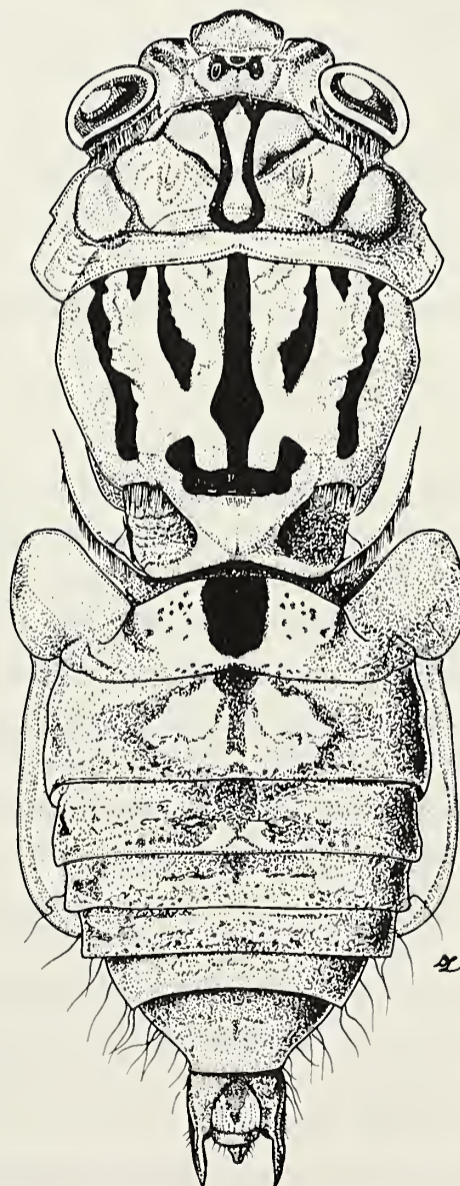


Fig. 1. *Cosmopsaltria kaiensis* n. sp., holotype, body in dorsal view.

lobate spot. Vertex with a pair of fairly large, brown marks medio-distally of eyes. Between these spots and fronto-clypeal suture there is another pair of narrow, black-brown spots which are connected with the median trilobate spot by a thin brown line. Anterior margin of postclypeus with a broad, brown fascia; medial part of lower margin of this fascia semicircular in frontal view. Ventral side of postclypeus otherwise light ochraceous. Anteclypeus light ochraceous except the dark brown margins of the apical part. Rostrum light ochraceous with black-brown apex extending beyond hind coxae. Margins of genae black along post- and anteclypeus. Head sparsely pilose.

Pronotum. Lateral angles of pronotum broadly rounded. A small, distinct, tooth is situated at one third the length of lateral margin. Central fasciae black and equal in width from anterior pronotum margin to pronotum collar; the fasciae slightly diverge to the anterior and enclose an oval interspace in front of pronotum collar. A pair of short dark streaks is situated above proximal ends of anterior oblique fissures. Posterior oblique fissures filled with a brown line that continues to ambient fissure. Ambient fissure dark brown from posterior end of posterior oblique fissure to halfway along lateral bend. A pair of brown marks is situated between two pairs of oblique fissures.

Mesonotum. Fasciae black. Median fascia fairly broad anteriorly, gradually widens to more than twice the anterior width at two thirds its length and narrows again toward cruciform elevation. Paramedian fasciae converge from anterior mesonotum margin halfway along mesonotum; fasciae are narrow anteriorly and widen considerably toward their apices. A pair of black-brown spots is situated in front of cruciform elevation. Lateral fasciae uninterrupted and variable in width, greatest width equal to anterior width of median fascia. A pair of short and broad, black streaks is situated laterally of paramedian fasciae at anterior mesonotum margin.

Legs. Ochraceous. Fore femora with longitudinal, brown lines; hind femora with brownish line along posterior side. Fore tibiae with

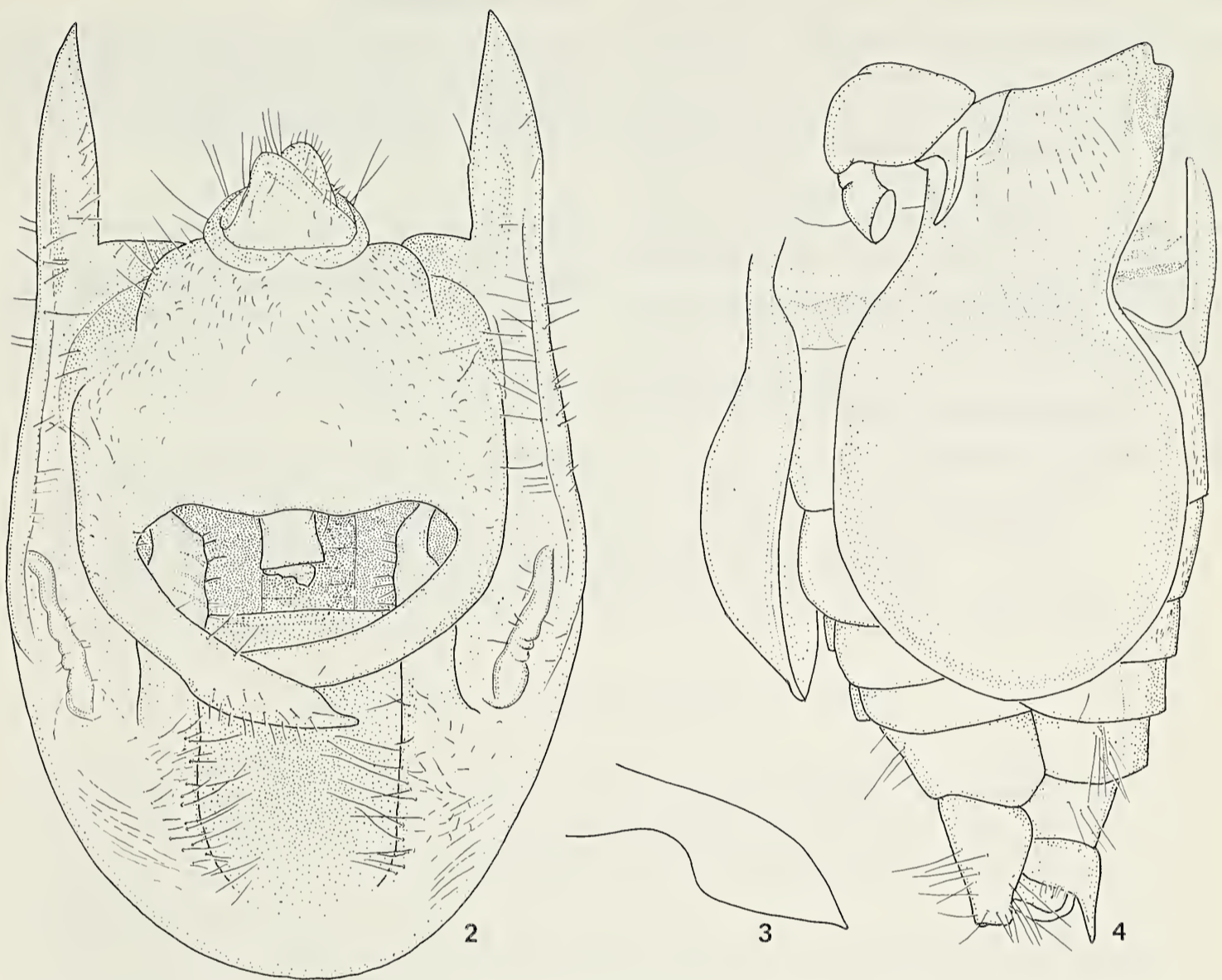
conspicuous dark brown lines; middle femora with dark brown lines on apical half.

Tegmina and wings. Hyaline. Tegmen long and slender, 3.2 times as long as high; 8th apical area relatively long, length: height: 3.1. Venation of tegmen light brown, turning dark brown apically. Venation of wings light to dark brown. Tegmen infuscated at bases of 2nd, 3rd, 5th and 7th apical areas and at apices of longitudinal veins.

Operculum (fig. 4). Ochraceous with exception of the dark brown latero-proximal corner. Distal two third broad and very convex; operculum reaching 6th abdominal segment. Lateral margin concavely sinuate at one third its length, apical part strongly convex toward broadly rounded apex. Medial margin slightly concave in basal part and convex to apex.

Abdomen. Castaneous dorsal side with black-brown median spot on segment 2 and a narrow, median, dark mark on segment 3. Short silvery pubescence covers lateral parts of tibial coverings, lateral parts of segment 3-6 and hind margins of these segments, and median areas of segment 6-8. The last-mentioned segments bear scattered light-coloured long hairs. *Genitalia* (figs. 2 & 3). Pygofer longer than broad. Lateral processes of pygofer fairly long, reaching beyond anal valves. Basal part of uncus fairly large, proximal margin of basal part between uncus lobes weakly bilobate in the middle. Uncus lobes slender. Outer margin of uncus lobe strongly emarginate at midlength. Uncus lobe (fig. 3) strongly widened beyond this emargination. Apex of uncus lobe acute. Basal pygofer lobes with a pair of narrow, lateral ridges and a pair of inner ridges bearing a well-developed flat protuberance. Each clasper bears two spines, a long, medial spine, juxtaposed to that of the other clasper and a shorter, lateral spine. Medial spine angularly curved, lateral spine slightly curved laterally.

Measurements. Body length: 43.5 mm; tegmen length: 60 mm; head width: 13.5 mm; pronotum width: 16.6 mm; mesonotum width: 14.3 mm; head width: pronotum width, 0.81; head width: mesonotum width, 0.94; pronotum width: mesonotum width, 1.16.



Figs. 2-4. *Cosmopsaltria kaiensis* n. sp., holotype. 2, pygofer in ventral view; 3, apex of uncus lobe; 4, abdomen with operculum in lateroventral view.

Infra-group relationships

The new species must be attributed to the *Cosmopsaltria papuensis* group, which was erected for three species: *C. papuensis* Duffels, 1983, *C. retrorsa* Duffels, 1983 and *C. toxopeusi* Duffels, 1983. These species have an extra pair of fairly long inner ridges running parallel and close to the outer ridges of the basal pygofer lobes. This character is regarded as a synapomorphy for this group (Duffels, 1983: fig. 8).

C. kaiensis is easily distinguished from the other species of the group by the distinct deep black lines on the thorax (fig. 1) and the very characteristic shapes of the well-developed inner ridges of the basal pygofer lobes (fig. 2) and the uncus lobes (fig. 3). The inner ridges of the pygofer lobes of *C. kaiensis* are broader

than in the other species of the *papuensis* group. This suggests a more primitive state of this character in phylogenetic sense, resembling the condition found in the species of the *capitata* group, which is the sister-group of the *papuensis* group. On account of these considerations I regard *C. kaiensis* as the sister-species of the more closely related three species for which the *papuensis* group was erected.

Biogeography

The three species of the *papuensis* group described in my 1983 paper are found in the mid-mountain forest of New Guinea and some localities in lowland rainforest. The slight morphological differentiation in the *papuensis* group is explained by recent isolation of populations after the Weichselian, the last glacial

period of the Pleistocene. Warming up after the Weichselian caused an uplift of the distribution zone of the ancestor of the *papuensis* group, and consequently a restriction of the species to a smaller fragmented area (Duffels, 1983). The ancestor of the *papuensis* group was widely distributed through the lowland and hilly forest of New Guinea. This ancestor may have colonized the Kai archipelago during Pleistocene low sea-level when these islands were separated from the extensive land of the New Guinea-Australia continent by no more than a narrow sea strait.

Acknowledgements

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References

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