

Linzer biol. Beitr.	48/1	655-661	30.07.2016
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## **A second species of *Brachypremna* OSTEN-SACKEN (Insecta: Diptera: Tipuloidea: Tipulidae) from Australia**

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**Abstract.** *Brachypremna tchooratippa* nov.sp. is described from tropical Queensland, confirming the presence of this otherwise essentially neotropical genus *Brachypremna* in Australia.

### **Introduction (♂ holotype, 3-viii-2013, ♀)**

The genus *Brachypremna* was established by OSTEN-SACKEN (1887) on two described and several undescribed species, without designation of a type-species. *Tipula dispellens* WALKER, 1861, was designated as type species by COQUILLET (1910). In OSTEN-SACKEN (1887) and a subsequent paper (OSTEN-SACKEN 1888) as well as in numerous papers of ALEXANDER between 1912 and 1921, ten species of *Brachypremna* were described or listed [as described by WIEDEMANN (1821, 1830) and WILLISTON (1900)], all from tropical South America establishing the genus as an essentially Neotropical faunal element.

ALEXANDER (1922) described a female crane fly as *Brachypremna tigriventris* from the Cairns district, Queensland, Australia, but he considered its generic placement as entirely provisional. He also described, again from the Australian biogeographic region and based on a unique female, *Brachypremna waigeuensis* from West Papua, Indonesia (ALEXANDER 1948). Between 1923 and 1946 and after 1948, ALEXANDER described 26 more *Brachypremna* species/subspecies from South America taking the total of the now recognized species to 38 (OOSTERBROEK 2015; OOSTERBROEK, pers. comm.).

In a key to the Australian genera of Tipulidae, DOBROTORSKY (1968) did not include *Brachypremna*, but after the identification of both *B. tigriventris* and *B. waigeuensis* was affirmed by ALEXANDER (1969), DOBROTORSKY (1974) listed *Brachypremna* "on Alexander's authority" as a genus present in Australia. With this background, it appears fortunate that both males and females of what is clearly a new *Brachypremna* species were recently collected in Australia. Based on these specimens there is no doubt about *Brachypremna* being part of the Australian fauna. The new species is compared with *Brachypremna tigriventris*, the male of which remains unknown.

## Material and methods

The material discussed here is housed at the Australian Museum, Sydney (AM) and the South Australian Museum, Adelaide (SAM). The descriptive terminology follows GELHAUS (2009).

## Systematics

### *Brachypremna tchooratippa* nov.sp. (Figs 1-7)

**Type material:** Holotype ♂: Australia, Queensland, Palmerston N. P., Tchooratippa Ck, 17°37'S/145°45'E, 9-xii-2015, G. Theischinger (AM).

**Additional material:** Paratypes: 3♂♂, 2♀♀, Australia, Queensland, Palmerston N. P., Tchooratippa Ck, 17°37'S/145°45'E, 9-xii-2015, G. Theischinger (AM).

### Description

Male (Figs 1-5)

**Head** (Fig. 1). Yellowish grey to greyish brown, yellowish along the eye margins; rostrum greyish to brownish yellow; nasus long and slender, dark greyish brown, tipped with long black bristles; palps long, yellowish grey, much longer than the 10-segmented greyish brown antennae.

**Thorax.** Prescutum, scutum, scutellum and mediotergite largely variously dark greyish brown merging into greyish yellow along latero-ventral margins; pleura largely greyish brown but anepimeron, meron and laterotergite yellowish white. Legs with spurs only on hind tibia; coxae and trochanters brownish yellow and greyish brown, outer face of hind coxa largely very pale; femora and tibiae dark greyish brown, with apex of femora and base of tibiae narrowly yellowish white and tibiae merging into yellowish white apically in foreleg, from about 9/10 length in mid-leg and from about 2/3 length in hind-leg; tarsi yellowish white with only basal ¼ grey in foreleg; claws comparatively large, almost double-curved with large base and distinct subapical tooth (Fig. 2).

**Wings** (Figs 3, 4). Strongly petiolate and narrow. A brownish tinge all over; stigma oval, dark greyish brown; subcostal cell a little darker than the remainder of the wing; cord and longitudinal veins beyond it indistinctly clouded and seamed with brown; whitish- to yellowish-subhyaline areas before and beyond the stigma; veins brown, veins M2, M3 and CuA1 pale at the wing-margin. Venation as illustrated: Sc long, Sc1 ending almost opposite 2/5 to 1/2 the length of R2+3; Sc2 a little removed from the tip of Sc1; Rs moderately long, gently arcuated near origin, originating level with origin of CuA2 or slightly proximal of it, similar in length to R2+3 or CuA1; R2 nearly at right angle to R2+3 at the fork, r joining near its base; r-m very short or mostly absent; petiole of cell m1 about as long as m; m-cu obliterated by fusion of M3 and CuA1; vein A2 running very close to and parallel with basal portion of anal wing margin, cell a2 consequently very linear and of uniform width for its entire length. Cell r2 as wide as cells r3 and r4 together or as cell m3; cells r3 and r4 very similar in width; cell d hexagonal, its proximal and posterior side similar in length, slightly shorter than costal side and slightly longer than distal side; cell cua1 almost rhomboidal; cell cua2 almost parallel sided throughout. Halteres with stem brownish yellow, knob pale greyish yellow to greyish brown.

**A b d o m e n .** Pale brownish yellow, brown and almost black. Tergite 1 largely greyish to brownish yellow or all brown; tergites 2-8 basally greyish to brownish yellow or brown, apical portion brown merging into black apical ring; sternites largely pale brownish yellow, apically brown to black, only sternite 2 with well defined, almost black midbasal patch; segments 8 and 9 almost all black.

**T e r m i n a l i a** (Fig. 6). Segment 8 twisted at an angle of up to more than 90°, segment 9 twisted again to make the distinctly bilobed tergite appear almost to approximately ventral; gonocoxites largely greyish yellow, basally almost black; gonostyli greyish yellow to orange, the inner about as long as gonocoxite with basal half up to a triangular tooth straight, moderately wide and apically setose, apical half about half as wide, smooth and gently curved up to apical 1/10 which is angled from the remainder and tapered to a rounded apex; outer gonostylus originating at half length of inner, finger-shaped, largely spinose and about half as long as inner.

**D i m e n s i o n s .** Total length 12.5-13.5 mm; wing 16.0-17.5 mm.

Female (Figs 6, 7)

**H e a d** (including antennae), **t h o r a x**, **w i n g s** a n d **a b d o m e n**. Much as described for the male. Legs much as described above for the male but spurs present on mid and hind tibia and claws smaller and without secondary tooth (Fig. 6).

**T e r m i n a l i a** (Fig. 7). Ovipositor brown with cerci longer than tergites 9+10, almost straight without ventral bulge; hypogynial valves very little shorter than cerci, the tips acute.

**D i m e n s i o n s .** Total length 14.0-15.0 mm; wing 16.0-17.0 mm.

**E t y m o l o g y .** Named after Tchooratippa Creek, the name used as a noun in apposition to the generic name.

**H a b i t a t** a n d **b e h a v i o u r .**

The specimens were collected along Tchooratippa Creek, a small rainforest stream in Palmerston National Park near Innisfail, Queensland, Australia. After searching the creek for dragonflies, my attention was drawn to the completely dark-shaded space between the lower face of a large approximately 45° tilted rock surface and the wet ground bedrock. There I detected an intense tangle of fast moving bright thin lines, and the dancing insects producing this image were netted. Four males and two females of *Brachyremna tchooratippa* were collected and probably at least as many individuals escaped.

The Central American *Brachyremna dispellens* (WALKER) is known as the "king of the dancing tipulids" as it hovers up and down in densely shaded areas with a distinctive vertical dance over a height of 3-4 ft (0.9-1.2 m) (Johnson 1909). On the basis of my observation at Tchooratippa Creek, *Brachyremna tchooratippa* could certainly qualify as the Australian "Dancing Queen". Based on the same observations there is a definite connection of the adults to the aquatic habitat. This is strengthened by the larval habitat of the species of *Brachyremna* being described as damp humus soil along streams, seepage areas, and low grassy areas (GELHAUS & YOUNG 1991). According to WHITE & SALSBURY (2000), it occurs near small streams in wooded areas, it hangs from its long front legs on vegetation in small clearings.

## Discussion

Based on the description only, (illustrations were not included) of *Brachypremna tigriventris* by ALEXANDER (1922), the new species described above was initially identified as conspecific with notable differences showing only in colouration. Whereas the pleura of *B. tigriventris* are described as "brown, sparsely variegated with darker areas more conspicuous on the lateral sclerites of the postnotum", they are brown with anepimeron, meron and laterotergite distinctly yellowish white in *B. tchooratippa*. However, study of the holotype of *B. tigriventris* (Queensland: Cairns district, A.M. Lea (Type, I. 12166 in SAM)), revealed additional significant differences in wing venation and the shape of the ovipositor. *B. tchooratippa* has vein C very widely curved apically, Rs originating mostly level origin of CuA2, and R3 almost straight making cells R3 and R4 subequal in width, and has M2 and M3 almost parallel (Fig. 3). By comparison, *B. tigriventris* has vein C apically much more strongly curved, Rs originating well proximal of origin of CuA2, and R more curved leaving cell R3 distinctly narrower than cell R4 (as in all New World species of Alexander (1912) and figures of a Central American species in GELHAUS (2009)) and veins M2 and M3 strongly converging (Fig. 8). Also, the cerci of the ovipositor of *B. tchooratippa* are longer than tergites 9+10 and ventrally straight (Fig. 7) versus shorter than tergites 9+10 and ventrally with distinct basal bulge in *B. tigriventris* (Fig. 9). Comparison of the new species with descriptions and illustrations of wings and male genitalia given by Alexander (1912, 1969) for South American *Brachypremna* species leaves no doubt that it belongs in *Brachypremna*. The similarity of the female of *B. tigriventris* to the new species makes it quite clear that it definitely belongs here too and that the essentially Neotropical genus *Brachypremna* is also part of the Australian tipulid fauna.

According to ALEXANDER (1948) "the Australasian species of *Brachypremna* must be relicts of a former wide-spread Pantropical fauna".

## Acknowledgements

I am much indebted to J.C. Martin (Australian Museum) for taking the photographs and to P. Hudson (South Australian Museum) for the loan of the holotype of *Brachypremna tigriventris*. D. Bickel (Australian Museum), J.K. Gelhaus (Philadelphia) and P. Oosterbroek (Amsterdam) are thanked for helpful comments on the manuscript.

## Summary

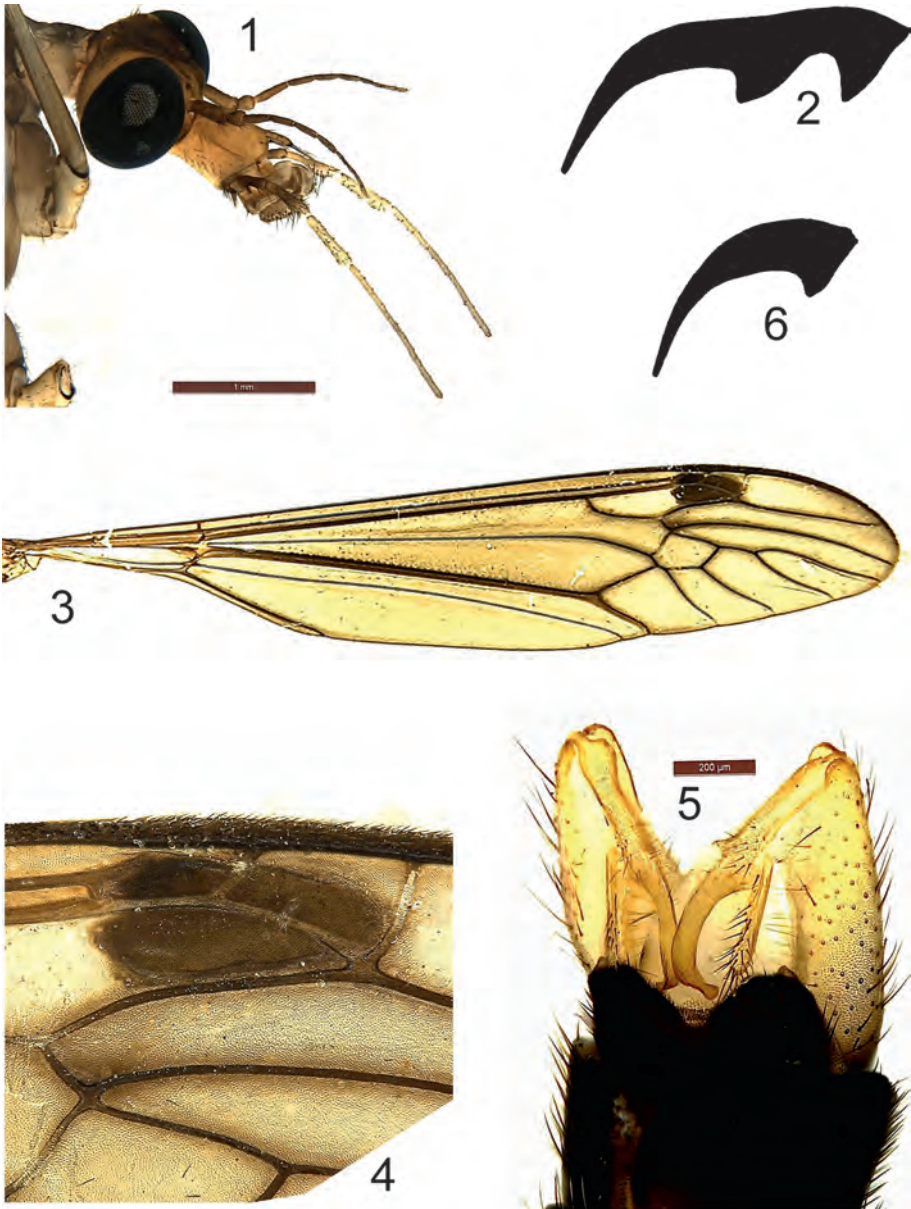
Based on significant morphological characters of both sexes a recently discovered crane fly from Australia described here as new is included in the essentially Neotropical genus *Brachypremna* OSTEN-SACKEN. From the close similarity of *Brachypremna tchooratippa* nov.sp. to *Brachypremna tigriventris* (known only from a unique female) it is concluded that its generic assignment (originally considered as provisional) is correct.

## References

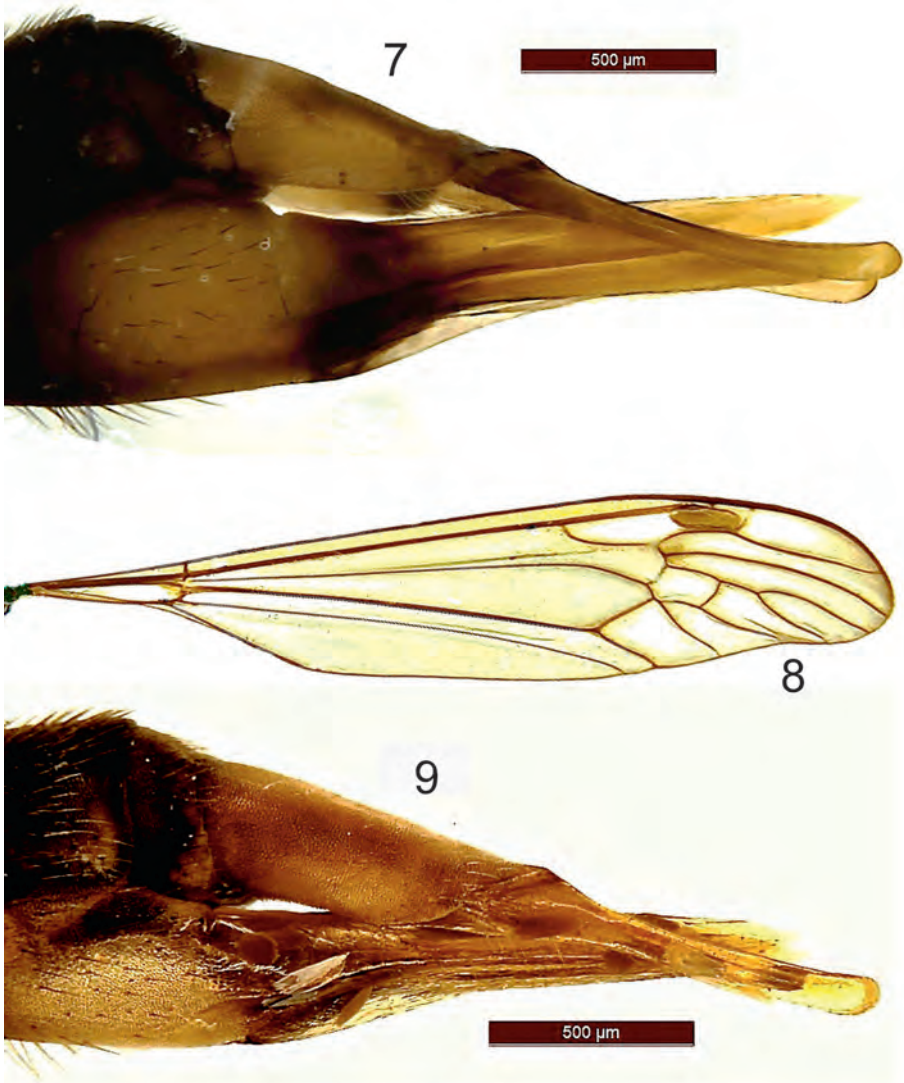
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**Figs 1-6:** *Brachypremna tchooratippa*. (1-5) Male: (1) head, lateral; (2) tarsal claw; (3) wing; (4) wing detail; (5) terminalia, ventral. (6) Female, tarsal claw.



**Figs 7-9:** *Brachypremna* spp., females. (7) *B. tchooratippa*, terminalia, lateral. (8, 9) *B. tigriventris*, holotype: (8) wing; (9) terminalia, lateral.

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Jahr/Year: 2016

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Autor(en)/Author(s): Theischinger Günther

Artikel/Article: [A second species of \*Brachypremna\* OSTEN-SACKEN \(Insecta: Diptera: Tipuloidea: Tipulidae\) from Australia 655-661](#)