A SECOND SPECIES OF DINOTOPERLA TILLYARD, 1921 FROM THE WARRUMBUNGLE (PLECOPTERA: GRIPOPTERYGIDAE)

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ABSTRACT

Dinotoperla jacobsi sp. n. (Holotype male, New South Wales, Warrumbungle, Belar Creek, 31.3430° S, 149.09200° E, 29-Sept-2015) is described from the Warrumbungle Range in New South Wales, Australia. Its affinities are discussed.

Keywords: Plecoptera, Gripopterygidae, Dinotoperla new species, Australia

INTRODUCTION

The major streams in the Warrumbungle Range showed good flow when L. Müller and I tried to collect dragonflies there on October 7 1983. Whereas several individuals of Austroaeschna unicornis (Martin, 1901) commanded attention, there were not too many other dragonfly species around. Sweeping some vegetation along the banks, however, resulted at least in obtaining numerous stoneflies. They all looked like Dinotoperla species to me and were more or less ignored until they were included as Dinotoperla sp. nr christinae and Dinotoperla sp. nr. pseudodolichoprocta in Theischinger and Cardale (1987). A year later the first was described as Dinotoperla inermis Theischinger, 1988, whereas the second was stored in the Australian Museum under a provisional name (Dinotoperla “warra”, as from the Warrumbungle). Nothing else was planned unless some more specimens would come up elsewhere and require a descriptive paper. Whereas recently during some activities in the Warrumbungle, D. inermis was found rather regularly, particularly in Upper Castlereagh River, the other was not collected until September 29 2015 at Belar Creek. Steve Jacobs who had been reminded for more than a decade to keep an eye on adult stoneflies apparently became lucky, collecting an adult male, a larva and an exuviae. As the species appears morphologically distinct, this fresh material was sent to Julia Mynott who uses DNA to associate life stages of larvae and adults for stoneflies (Mynott 2015) and currently is working on the genus Dinotoperla (Mynott et al. in prep.). Based on morphological distinctness and on the fact that Julia does not have larvae or adults that genetically match the species, it is described in this paper as new and dedicated to Steve in recognition of his latest effort and of the fact that he was great company on monitoring trips over many years.

MATERIAL AND METHODS

Specimens were preserved in 70% ethanol and lodged in the collection of the Australian Museum (Sydney). Illustrations were done with the aid of a
Figs. 1-3. *Dinotoperla jacbsi* sp. n., ♂: (1) dorsal (without hindwings and abdomen); (2) head and pronotum, dorsal; (3) genitalia, lateral.

camera lucida. Colouration given is that from the holotype.

**DESCRIPTION**

*Dinotoperla jacbsi* sp. n.

(Figs. 1-4)

A moderate sized *Dinotoperla* species, the male with conspicuous colour pattern on head and thorax, the terminalia similar to *D. pseudodolichoprocta* Theischinger, 1982 but with a shorter membranous cone on tergite X, a plumper epiproct and paraprocts and with cerci containing fewer and longer segments.

**Material studied.** Holotype ♂, New South Wales, Warrumbungle, Belar Creek, 31.3430° S, 149.09200° E, 29 September 2015, S. Jacobs; in Australian Museum.

Paratypes: 1 larva and 1 exuviae, same data as holotype. 4 ♂, Warrumbungle Range, New South Wales, 7 October 1953, G. Theischinger.

**Male.** Head and body dorsally largely dark greyish to blackish brown, ventrally yellowish grey to greyish brown; a bright yellow spot on vertex and some yellow along eye margin, an irregular stripe along mid-dorsal line of pronotum. Legs yellowish grey to greyish brown, distal 1/3-1/4 of femora, a subbasal ring on tibiae and the tarsi markedly darker, up to brownish black.

Wings faintly suffused with pale greyish; darker small blotches around most cross-veins, particularly in apical half of forewing.

Genitalia. Central sclerite of tergite 10 wide, produced posteriorly into a short, low and rather obtuse cone. Epiproct simple evenly curved, blade-shaped, with base not swollen and apical half deep. Paraprocts with base moderately long and wide,
lube largely almost parallel-sided, rather obtuse. Cerci 12-13 segmented, the basal segments longer than wide, the next 3-4 short, at least the apical 4 rather long.

Measurements: body 8.0 mm, forewing 9.0 mm.

**Variability.** Paratypes agree with holotype except colouration has faded into much paler (greyish to brownish yellow). Measurements: body 7.0-8.0 mm, forewing 8.5-9.2 mm (N=4).

**Female.** Unknown.

**Larva.** Described in Mynott et al. (in prep.)

**Distribution.** Possibly restricted to the Warrumbungle Range.

**Etymology.** Dedicated to Steve Jacobs who recently rediscovered the species after 33 years.


*Dinotoperla jacobi* can be distinguished from its most similar congeners *D. dolichoprocta* Theischinger, 1982 and *D. pseudodolichoprocta* by a yellow spot on top of the head and a yellow stripe along mid-line of the pronotum, by a shorter, more
obtuse membranous cone on abdominal tergite X, a deeper epiproct without swollen base and more parallel sided, apically not attenuated, obtuse paraprocts. The width/length ratio of the pronotum is smaller (ca 1.6) than in D. dolichoprocta (ca 2.0) but wider than in D. pseudodolichoprocta (ca 1.5), whereas the first cercal segment is markedly shorter than in D. dolichoprocta (3 times as long as wide: Fig. 5) but longer than in D. pseudodolichoprocta (as long as wide: Fig. 6). The cerci as a whole are longer than in both species but with more segments (12-13) than in D. dolichoprocta (9-11) and fewer than in D. pseudodolichoprocta (13-16).

Dinotoperla jacobsi has a prominent colour pattern (very dark and yellow) on top of head and pronotum (similar to its coexisting congener D. inermis Theischinger, 1988 which has very different genitalia, in particular a very different epiproct (Fig. 7), whereas its most similar congener in the Blue Mountains, D. pseudodolichoprocta, is rather uniformly dark. It appears that D. inermis is the only Dinotoperla species co-occurring with D. jacobsi in the Warrumbungle, whereas D. pseudodolichoprocta co-occurs with D. carpenteri Tillyard, 1921, D. dolichoprocta, D. fontana Kimmins, 1951 and D. serricauda in the Blue Mountains (Theischinger 1982).

ACKNOWLEDGEMENTS

I wish to thank the management of OEH (Office of Environment and Heritage NSW) for showing interest in the Warrumbungle, to Steve Jacobs for still keeping an eye on adult stoneflies, to Derek Smith and Russell Cox (Australian Museum) for fishing out old stonefly material from the museum’s collection, to John Martin (Australian Museum) for taking the photos and to Julia Mynott (La Trobe University, Wodonga) for supporting with DNA analyses and for helpful comments on the manuscript.

REFERENCES


Mynott, J.H., Suter, P.J., & Theischinger, G. In prep. Larval taxonomy of the genus Dinotoperla Tillyard, 1921 (Plecoptera: Gripopterygidae).


Submitted 1 June 2016, Accepted 15 July 2016, Published 20 July 2016

Hosted and published at the University of Illinois, Illinois Natural History Survey, Champaign, Illinois, U.S.A.