Zootaxa 3866 (1): 145–150
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3866.1.9
http://zoobank.org/urn:lsid:zoobank.org:pub:20FECEF4-5373-4446-97F8-F6B19F659873

Drepanosticta machadoi spec. nov. from New Guinea (Odonata: Platystictidae)

G. THEISCHINGER[1] & S. J. RICHARDS[2]

[1]*Office of Environment and Heritage New South Wales, PO Box 29, Lidcombe, NSW 1825, Australia, and Australian Museum, Entomology, 6 College Street, Sydney, NSW 2010, Australia. E-mail: gunther.theischinger@environment.nsw.gov.au*
[2]*Herpetology Department, South Australian Museum, North Terrace, Adelaide, S. A. 5000 Australia, and Wildlife Conservation Society, Goroka, Papua New Guinea. E-mail: steve.richards@samuseum.sa.gov.au*

Abstract

Drepanosticta machadoi **sp. nov.** (Holotype ♂: Dablin Creek, Hindenburg Range) from Papua New Guinea is described. The new species is a predominantly black damselfly, the male with four pale/bright pattern elements on each side of the synthorax, dorsum of segments 9 and 10 largely bright blue, and a uniquely shaped posterior lobe of the pronotum which is a wide-angled fork with rather straight, narrow finger-like prongs. It is referred to the *Drepanosticta conica* group of species and a key to the males of the *D. conica* group is provided.

Key words: Odonata, damselfly, Platystictidae, *Drepanosticta*, New Guinea, new species, key

Introduction

Sixteen species of the platystictid genus *Drepanosticta* Laidlaw, 1917, are known from the island of New Guinea. They were described by Selys (1878), Martin (1909), Laidlaw (1917), Lieftinck (1932, 1938, 1949), and Theischinger & Richards (2005, 2014). A further 11 species are known from the nearby Misool and Moluccan islands, described by Fraser (1926), Lieftinck (1938) and van Tol (2008). Of these 27 species six (*D. conica* Lieftinck, *D. dorcadion* Lieftinck, *D. lepyricornis* Lieftinck, *D. taurulus* Theischinger & Richards, *D. elaphos* Theischinger & Richards and *D. pterophora* Theischinger & Richards) form a distinct group defined by their thoracic colour pattern and shape of the male anal appendages. This group was defined and informally labelled the *D. conica* group by Theischinger & Richards (2014). Recent collecting by the second author in Papua New Guinea revealed a further undescribed species fitting this group. This species is described below and a key to the *D. conica* group is provided.

Material and methods

Descriptive terminology largely follows Watson & O'Farrell (1991). Coloration is given as detectable from the preserved material, supplemented with a photograph of the specimen taken in life. Measurements are given in millimetres (mm). All illustrations were done with the aid of a camera lucida and are not to scale. Coordinates are presented using the GPS datum WGS 84.

The holotype is deposited in the collection of the South Australian Museum, Adelaide (SAMA).

Accepted by D. Paulson: 4 Sept. 2014; published: 22 Sept. 2014

Western Province, Papua New Guinea. Despite intensively searching for several hours in the vicinity of the type locality no additional specimens were seen.

Key to the males of the *Drepanosticta conica* group of species

The pale/bright patches on the synthoracic pleura are termed as follows (see Fig. 7):
ES2 = mesepisternal patch; EM2 = mesepimeral mark; ES3 = metepisternal stripe; EM3 = metepimeral patch.

1 ES2 squarish, ill defined, approximately as long as EM2 which is narrow and curved (Fig. 7); pronotal fork wide-angled, with rather straight, narrow, finger-shaped prongs (Fig. 14). . . . . *D. machadoi*
- ES2 elongate, subtriangular or subrectangular, well defined and markedly longer than EM2 (if present) (Figs 8–13); pronotal fork not as above 2
2 Only three pale/bright (yellowish to bluish) synthoracic pattern elements present, EM2 absent (Figs 8–9); pronotal fork with prongs long and backward directed and excision distinct (Figs 15, 16) 3
- Four pale/bright (yellowish to bluish) synthoracic pattern elements present, including EM2 (Figs 10–13); pronotal fork with prongs short or directed laterad and excision indistinct (Figs 17–20) 4
3 ES3 of similar width from dorsal to beyond metastigma, dorsally rather distant from EM3 (Fig. 8); prongs of pronotal fork with apex pointed (Fig. 15) . . . . . *D. elaphos*
- ES3 tapered from wide dorsally to narrow at level of metastigma, dorsally very close to EM3 (Fig. 9); prongs of pronotal fork with apex rounded (Fig. 16) . . . . . *D. dorcadion*
4 ES3 much wider dorsally than at level of metastigma (Figs 10–11); pronotal fork with prongs almost right-angled (Fig.17), or pronotal fork wing-like with apex of prongs rounded (Fig. 18) 5
- ES3 of similar width dorsally and at level of metastigma (Figs 12–13); pronotal fork with apex pointed (Figs 19, 20) 6
5 ES2 narrow, comma shaped, ES3 wide in dorsal section, narrow in ventral section (Fig. 10); pronotal fork with prongs almost right-angled (Fig.17) . . . . . *D. conica*
- ES2 much wider, sub-rectangular, ES3 rather evenly tapered from wide dorsally to narrow at level of metastigma (Fig. 11); pronotal fork wings-like with apex of prongs rounded (Fig. 18) . . . . . *D. pterophora*
6 ES2 subtriangular, EM2 tiny, squarish (Fig. 12); prongs of pronotal fork directed laterad (Fig. 19) . . . . . *D. taurulus*
- ES2 subrectangular, EM2 larger, elongate (Fig. 13); prongs of pronotal fork directed mediad (Fig. 20) . . . . . *D. lepyricollis*

Acknowledgements

Field work in Papua New Guinea by SJR was supported by the Wildlife Conservation Society-PNG (WCS-PNG) through a grant and logistical support from the PNG Sustainable Development Program (PNGSDP), and he is particularly grateful to Nathan Whitmore, Ross Sinclair, John Kuange and John Par Kagl from WCS-PNG, and to Stanis Tao and Kaia Songoa from PNGSDP for their assistance. The local communities of Bultem, Wangbin and Tabubil provided access to, and hospitality on, their land and SJR is most grateful to BrianYapi and the other community members of these areas for their support and field assistance. Permission to conduct research in Western Province, and other assistance, was provided by the PNG Department of Environment and Conservation, the National Research Institute, the Western Province Provincial Government, the Star Mountains Local Level Government and Mr Dimes Daksep (Executive Officer, Olsobip Local Level Government). GT is grateful for ongoing support by the management of the NSW Office of Environment & Heritage.

References

Fraser, F.C. (1926) Notes on a collection of dragonflies (Order Odonata) from Dutch East Indies and descriptions of four new species from the neighbouring continent. *Treubia,* 8, 467–494.

Laidlaw, F.F. (1917) A list of the dragonflies recorded from the Indian empire, with special reference to the collection of the Indian Museum. Part II. The family Agrionidae. The sections Podolestes, Platycnemis, Platysticta and Protoneura. *Records of the Indian Museum,* 13 (6), 321–348.

Lieftinck, M.A. (1932) The dragonflies (Odonata) of New Guinea and neighbouring islands. Part I. Descriptions of new genera and species of the families Lestidae and Agrionidae. *Nova Guinea*, 15 (3), 485–602.

Lieftinck, M.A. (1938) The dragonflies (Odonata) of New Guinea and neighbouring islands. Part V. Descriptions of new and little known species of the families Libellaginidae, Megapodagrionidae, Agrionidae (sens. lat.), and Libellulidae (Genera *Rhinocypha, Argiolestes, Drepanosticta, Notoneura, Palaiargia, Papuargia, Papuagrion, Teinobasis, Nannophlebia,*

Synthemis, and *Anacordulia*). *Nova Guinea*, New Series, 2, 47–128.
Lieftinck, M.A. (1949) The dragonflies (Odonata) of New Guinea and neighbouring islands. Part VII. Results of the Third Archbold Expedition 1938-39 and of the Le Roux Expedition 1939 to Netherlands New Guinea (II. Zygoptera). *Nova Guinea*, New Series, 5, 1–271.
Martin, R. (1909) Odonates de la Nouvelle Guinee Britannique. *Bolletino Societatis Entomologicae Italianae*, 40, 195–207.
Selys, E. (1878) Odonates de la region de la Nouvelle Guinee. I. Considerations sur la fauna de la Nouvelle Guinee, des Moluques et de la Celebes. *Mitteilungen aus dem Königlichen Museum Dresden*, 3, 289–322.
Theischinger, G. & Richards, S.J. (2005) Two new species of *Drepanosticta* Laidlaw from Papua New Guinea (Odonata: Platystictidae). *Odonatologica*, 34 (3), 307–312.
Theischinger, G. & Richards, S.J. (2014) *Drepanosticta elaphos* sp. nov. and *Drepanosticta pterophora* sp. nov. from Papua New Guinea (Odonata: Platystictidae). *Odonatologica*, 43 (1/2), 91–103.
Van Tol, J. (2008) The Platystictidae of the Moluccas and Misool (Odonata). *Deutsche Entomologische Zeitschrift*, 54 (1), 3–26.
Watson, J.A.L. & O'Farrell, A.F.L. (1991) *Odonata (dragonflies and damselflies). In*: CSIRO (Ed.), *The Insects of Australia. 2nd Edition*. Melbourne University Press, Melbourne, pp. 294–310.