



# International Dragonfly Fund - Report

Journal of the  
International Dragonfly Fund

ISSN 1435-3393

## Content

Marinov, Milen & Günther Theischinger

Description of two new aeshnids from Solomon Islands  
(Anisoptera: Aeshnidae)

1-8

Volume 53 2012

**The International Dragonfly Fund (IDF) is a scientific society founded in 1996 for the improvement of odonatological knowledge and the protection of species.**

**Internet: <http://www.dragonflyfund.org/>**

**This series intends to publish studies promoted by IDF and to facilitate cost-efficient and rapid dissemination of odonatological data.**

**Editorial Work: Martin Schorr and Milen Marinov**

**Layout: Martin Schorr**

**Indexed by Zoological Record, Thomson Reuters, UK**

**Home page of IDF: Holger Hunger**

**Printing: ikt Trier, Germany**

**Impressum: International Dragonfly Fund - Report - Volume 53**

- Date of publication: 06.12.2012
- Publisher: International Dragonfly Fund e.V., Schulstr. 7B, 54314 Zerf, Germany. E-mail: [oestlap@online.de](mailto:oestlap@online.de)
- Responsible editor: Martin Schorr

## Description of two new aeshnids from Solomon Islands (Anisoptera: Aeshnidae)

Milen Marinov<sup>1</sup> & Günther Theischinger<sup>2</sup>

<sup>1</sup>University of Canterbury, Freshwater Ecology Research Group, Private Bag 4800, Christchurch 8140, New Zealand. Email: milen.marinov@canterbury.ac.nz

<sup>2</sup>NSW Department of Premier and Cabinet, Office of Environment and Heritage, PO Box 29, Lidcombe NSW 1825 Australia

### Abstract

Two new species, *Agyrtacantha browni* and *Gynacantha amphora*, are described, illustrated and compared to closely related congeners. The male holotypes (Kongulae Village, Guadalcanal Island, Solomon Islands, 26 April 2012) are deposited at the Nationaal Natuurhistorische Museum, Leiden, The Netherlands.

### Toksave

Tupla niupla binatang ol toksave na kisim save long displa taem lukluk long ol narapla wankaen binatang. Tupla mun binatang (ol bin kisim lon Kongulae Village, Kalekana, Solomon Aelan, 26 April, 2012) ol putim long wanpla haus blong ol binatang long Nationaal Natuurhistorische Museum, Leiden, The Netherlands.

### Introduction

The two new species are part of the results of opportunistic sampling carried out in April 2012 within the vicinity of Honiara – the capital of the Solomon Islands. The faunistic results with a thorough revision of the previous records for the country and important taxonomic considerations will be published elsewhere. Here two new aeshnids are described in a brief note, which aims at highlighting the importance of on-going odonatological studies of this Pacific archipelago.

### Material and Methods

The two males of the newly described species were collected during a night walk in the forest that was planned for collecting information about the herpetofauna of Guadalcanal Island. One of them came to the torch light and landed on the chest of a member of the herpetological team and the second was collected by hand from the vegetation.



The coordinates of the type localities were taken on a subsequent visit on the same forest track and are consistent with another Odonata sampling site. They are given here for rough estimate of the area where the two holopytes were collected from and thus are the same for both species. Given the accidental nature of this discovery, a higher precision is not necessary.

The specimens were photographed prior to killing for better viewing the body coloration. Images were organised in figures accompanying the descriptions.

*Agyrtacantha browni* sp. nov.

Fig. 1a-e: (a) frons frontal view, (b) eyes left lateral view, (c) thorax left lateral view, (d) anal appendages left lateral view, (e) anal appendages dorsal view.

Holotype ♂: Solomon Islands, Guadalcanal, 26 April 2012, forest track above Kongulae Village on the way to Kovi River (9.45240S, 159.90640E; 126 m a.s.l.), came to the light of a head torch, R. Brown leg.

Etymology. The species is named after Rafe Brown, University of Kansas, USA who collected the holotype.



Male. – Head (Fig. 1a-b). – Labium and mandible bases reddish brown, more apical portion of mandibles brownish black; face including labrum, clypeus and anterior frons largely greyish brown (reddish brown in life – Fig. 1a) with dorsal half of anterior frons merging into dark greyish brown to blackish brown and black close to the top; top of



frons black without any light or pale patches; antennae blackish brown, vertex and occipital triangle black; postgenae largely brown and black, with an elongate yellowish white patch each side at lateral evagination; eyes greenish brown (green in life – Fig. 1b).



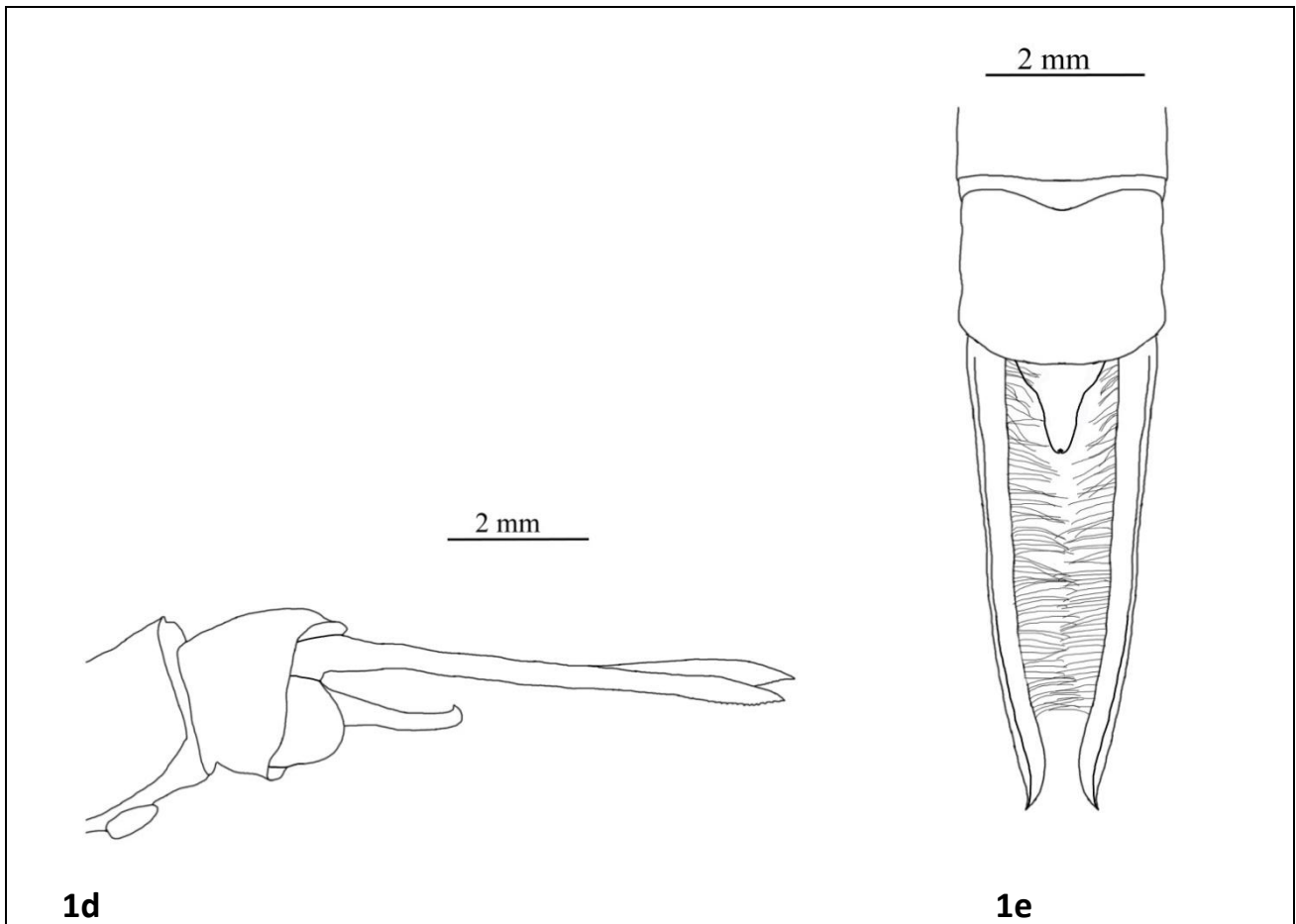
Thorax (Fig. 1c). – Pronotum black and yellowish brown, prothoracic pleura yellowish brown. Mesepisternum including mid-dorsal carina and antealar ridge largely black, each side with pale green spot close to antealar ridge and indistinct smudge lateral to it; antealar sinus pale green; lateral pleura largely pale greyish green, a black ventrally pointing wedge along humeral suture, narrowly black along

subalar ridge, along metapleural suture, along the also black metapostepimeron and very narrowly black surrounding metathoracic spiracle; an irregular black spot may be present in dorsal half of metepisternum and/or metepimeron; katepisterna and area ventral to metathoracic spiracle greyish brown. Legs reddish brown with coxae markedly darker (almost black) than the rest; all terga green, spaces between them appearing black; poststernum greyish brown. Wing membrane hyaline with strong brownish tinge; venation brownish black; axillary and intermediary plates green; pterostigma greyish to blackish brown with proximal and distal angle very narrow, overlying 2-2 ½ cells; a brace vein close to it; antenodals 22-24/15-16; postnodals 17-18/19-20; 7/8 bqs; supertriangle with 5-6 crossveins; triangle made up of 6/5-6 cells, with 2 cells proximally; up to 4 rows of cells between IR2a and IR2b, between IR2 and Rspl and between MA and Mspl in both wings; anal loop made up of 10 and 12 cells; membranulae very small, dull white.

Abdomen. – Terga black, except for two greenish lateral spots, one indistinct and ill-defined in anterior half and another, larger and defined, in posterior half of tergum 1, and 2 ill-defined brownish green patches, an antero-lateral and a postero-lateral one on tergum 2, the basal one covering the auricle, also narrowly pale along and



posterior to parts of the supplementary transverse carina; auricles subtriangular, bearing 4 rather pointed teeth. Sterna largely black. Anal appendages (Fig. 1d-e) black, the superiors very slender, almost straight and pointed, about 3 ½ times as long as the subtriangular inferior appendage.



Measurements (in mm): total length (including appendages) 70.5; abdomen (including appendages) 55.3; hind wing 45.7; pterostigma (costal edge of hind wing) 2.6.

Female. Unknown.

Affinities and diagnosis. *Agyrtacantha browni* sp. n. is very similar and most probably closely related to *A. dirupta* (Karsch, 1889), *A. tumidula* Lieftinck, 1937 and *A. microstigma* (Selys, 1878). The totally black top of its frons resembles *A. microstigma*, the long strongly slanting pterostigma most closely resembles *A. dirupta* and the rather pale face is similar to both *A. dirupta* and *A. tumidula*. Unique for *A. browni* are the poorly patterned front of the synthorax, the simple but distinct pattern of the lateral synthoracic pleura and the almost all black abdomen that does not show any sign of medio-dorsal markings that are present in all other species.

All previously described species, including the last so far described member of the genus *A. othello* Lieftinck, 1942, have their main distribution within the Papua New



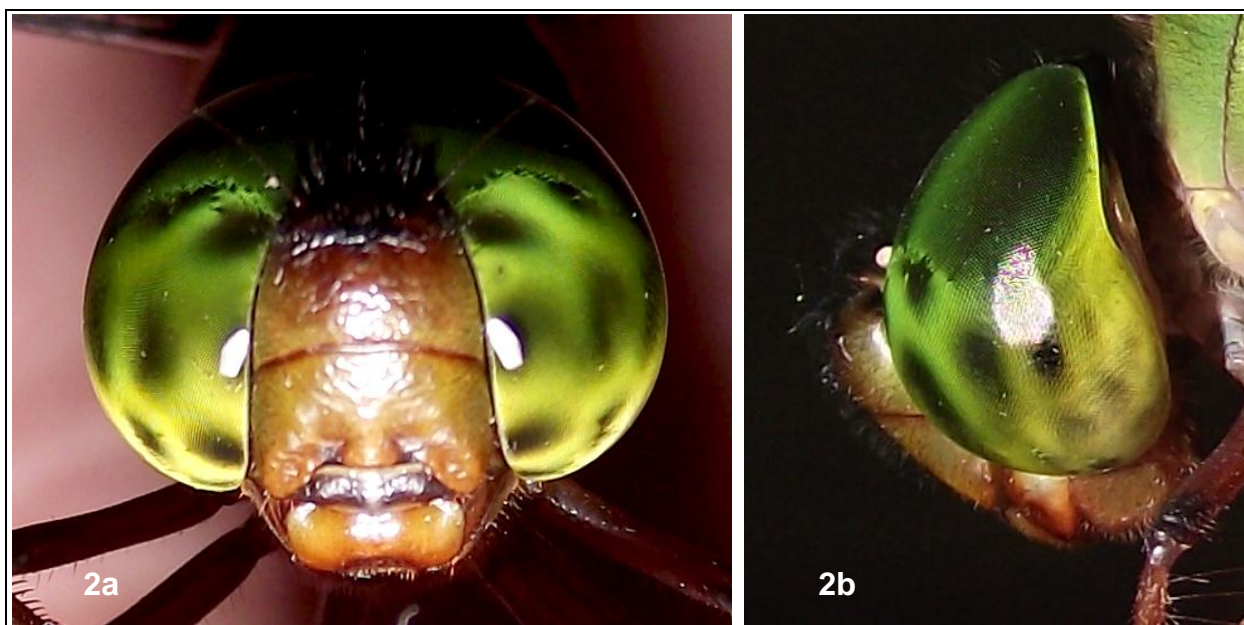
Guinea region. *A. disrupta* is the only species reported previously for Solomon Islands (Lieftinck 1949a, b). Donnelly (1987) recorded another *Agyrtacantha* sp. nov. which, however, was not subsequently described. Since the material was sampled from Guadalcanal Island, the description of *A. browni* was consulted with that specimen prior to inclusion in this publication in order to secure its taxonomic validity.

*Gynacantha amphora* sp. n.

Fig. 2a-e: (a) frons frontal view, (b) eyes left lateral view, (c) thorax left lateral view, (d) anal appendages left lateral view, (e) anal appendages dorsal view.

Holotype ♂: Solomon Islands, Guadalcanal, 26 April 2012, forest track above Kongulae Village on the way to Kovi River (9.45240S, 159.90640E; 126 m a.s.l.), collected by hand on a bush leaf during the night.

Etymology. The name given to this species refers to the resemblance of its abdominal segments 2-4 (in dorsal view) to an amphora. The noun is used in apposition to the generic name.



Male. – Head (Fig. 2a-b). – Labium brownish to greyish yellow and mandible bases yellowish to greyish brown. Face (Fig. 2a) including labrum, postclypeus and anterior frons between green, brown and dirty greyish yellow; anteclypeus black with whitish T-mark; top of frons greyish to greenish brown with black, very thick-stemmed, mushroom-like T-spot; antennae brown; vertex black; occipital triangle brownish yellow;



postgenae pale brownish yellow, black dorsal to lateral evagination; eyes brown (green in life – Fig. 2b).

Thorax (Fig. 2c). – Prothorax yellowish to pale brownish grey. Synthorax largely pale greyish brown (bright green in life), broadly black along and including mid-dorsal carina, narrowly black along and including antealar ridge and black spots at about dorsal 1/5 of meso- and metapleural sutures, at metathoracic spiracle and at ventral angle of metapostepimeron; katepisterna and other ventral areas of lateral pleura pale brown. Legs reddish brown with coxae slightly paler than the rest.



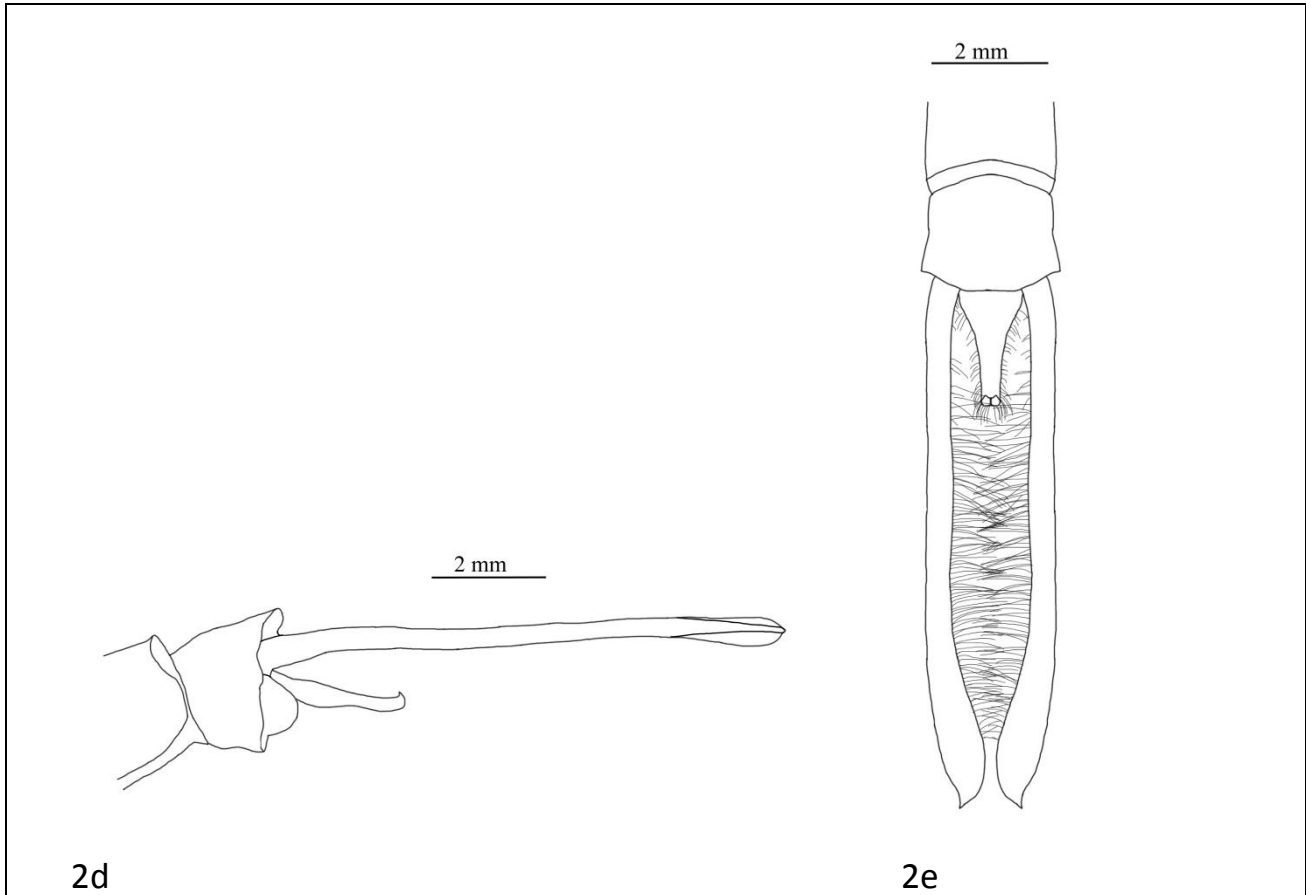
Wing membrane hyaline tinged with light yellow at the bases and very weak traces on the costal edges of all wings with yellow encompassing the whole anal triangle and three longitudinal rows of cells in the anal area adjacent to it, venation black; axillary and intermediary plates green; pterostigma brownish to blackish grey, generally overlying  $4\frac{1}{2}$  cells; brace vein well situated and developed; antenodals 29-30/20-21; postnodals 26/27-28; 9/10-11 bqs (including subtriangle); supertriangle with 7-9/7 crossveins; triangles made up of 7/6 cells, 2 basal doubles in forewing, 1 basal double in hindwing; anal loop made up of 13-16 cells; anal triangle 3-celled rather narrow, 3 rows of cells between it and anal loop, second and third row forming kind of an additional anal loop made up of 9 cells; membranulae very small, greyish white.

Abdomen. – Tergum 1 brown merging into pale green laterally; tergum 2 blackish brown with a rather broad mediodorsal stripe and dorsal and ventral face of auricles brown (bright green in life), 2 small almond-shaped dorso-lateral apical spots pale greenish brown; tergum 3 with apical portion enormously expanded, blackish brown with narrow pale green latero-basal and brownish latero-median patch and green triangular medio-dorsal spot each side; terga 4-7 dorsally black with only brownish triangular medio-dorsal spots adjacent and posterior to supplementary transverse carina





and narrowly separated along midline, and more indistinct medio-lateral spots, terga 4-6 also laterally with very narrow paler basal line; terga 8 and 9 and segment 10 dorsally black; all terga ventrally much paler (different shades of brown) than dorsally. Sterna variably brown to black. Anal appendages (Fig. 2d-e) dark brown, superiors appearing in dorsal view 4 times as long as inferior appendage.



Measurements (in mm): total length (including appendages) 77.8; abdomen (including appendages) 60; hind wing 51; pterostigma (costal edge of hind wing) 4.1.

Female. Unknown.

Affinities and diagnosis. *Gynacantha amphora* sp. n. is apparently closest to *G. rosenbergi* Kaup in Brauer, 1867. This is indicated by the similar shape of the superior male anal appendages, and by the small number (3-5) of black denticles along the margin of the genital fossa and by the very distinct waist in abdominal segment 3 (Fig. 3a-b). This waist appears narrow in *G. rosenbergi* because of the greatly expanded apical section of segment 3. In *G. amphora* sp. n., however, this expansion is quite spectacular, and as a consequence differences in aerodynamics and pairing-moves may have to be considered. The 3 rows of cells between anal triangle and anal loop and more rounded wing tips may possibly be an indication of the former. The abdominal pattern with the lack of some pale elements in segment 2 and the lack of medio-dorsalia on segment 7 and of postero-dorsalia on segments 3-7 (all are present in *G. rosenbergi*), together



with the shorter inferior anal appendage appear sufficient to consider *G. amphora* sp. n. as specifically different from *G. rosenbergi*.

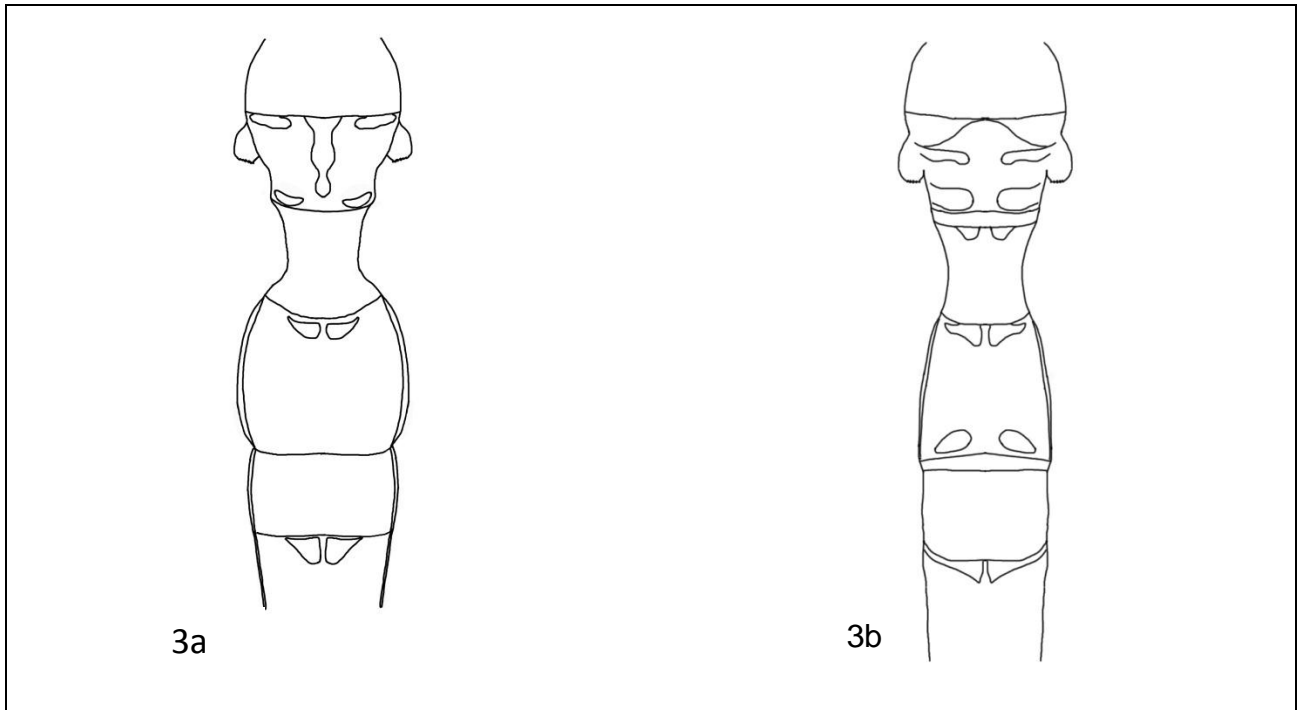


Figure 3. Comparison between the constriction of the abdominal segments of: (a) *Gynacantha amphora* sp. nov. and (b) *Gynacantha rosenbergi*.

### Acknowledgements

The trip to the Solomon Islands was organised for taking part in the IUCN Pacific Islands Species Forum, Honiara 25-27 April 2012. Odonata field sampling was conducted during the session days and after the end of the Forum. The whole study was partly funded by the International Dragonfly Fund, University of Canterbury, New Zealand and Nationaal Natuurhistorische Museum, Leiden, The Netherlands. Our sincere thanks go to all these organisations for considering dragonflies as an important part of the Pacific islands biodiversity. We would like also to express our gratitude to other people who assisted us during the work on the manuscript: Albert Orr, Logino, Patrick Pikacha, Rafe Brown, Robert Fisher, Tyron Lavery.

### References

- Donnelly, T.W., 1987. Return to the South Pacific - collections in Fiji, Vanuatu, and the Solomon Islands, 1987. *Selysia* 16(2): 4.
- Lieftinck, M.A., 1949a. The dragonflies (Odonata) of New Guinea and neighbouring islands. Part VII. Results of the Third Archbold expedition 1938-1939 and of the Le Roux Expedition 1939 to Netherlands New Guinea (II. Zygoptera). *Nova Guinea New Series* 5: 1-271.
- Lieftinck, M.A., 1949b. Synopsis of the Odonate fauna of the Bismarck Archipelago and the Solomon islands. *Treubia* 20: 319-374.



## INSTRUCTION TO AUTHORS

*International Dragonfly Fund - Report* is a journal of the International Dragonfly Fund (IDF). It is referred to as *the journal* in the remainder of these instructions. Transfer of copyright to IDF is considered to have taken place implicitly once a paper has been published in the journal.

The journal publishes original papers only. By *original* is meant papers that: a) have not been published elsewhere before, and b) the scientific results of the paper have not been published in their entirety under a different title and/or with different wording elsewhere. The republishing of any part of a paper published in the journal must be negotiated with the Editorial Board and can only proceed after mutual agreement.

Papers reporting studies financially supported by the IDF will be reviewed with priority, however, authors working in general with Odonata are encouraged to submit their manuscripts even if they have not received any funds from IDF.

Manuscripts submitted to the journal should preferably be in English; alternatively German or French will also be accepted. Every manuscript should be checked by a native speaker of the language in which it is written; if it is not possible for the authors to arrange this, they must inform the Editorial Board on submission of the paper. Authors are encouraged, if possible, to include a version of the abstract in the primary language of the country in which their study was made.

Authors can choose the best way for them to submit their manuscripts between these options: a) via e-mail to the publisher, or b) on a CD, DVD or any other IBM-compatible device. Manuscripts should be prepared in Microsoft Word for Windows.

While preparing the manuscript authors should consider that, although the journal gives some freedom in the style and arrangements of the sections, the editors would like to see the following clearly defined sections: Title (with authors names, physical and e-mail addresses), Abstract, Introduction, Material & Methods, Results, Discussion, Acknowledgments and References. This is a widely used scheme by scientists that everyone should be familiar with. No further instructions are given here, but every author should check the style of the journal.

Authors are advised to avoid any formatting of the text. The manuscripts will be stylised according to the font type and size adopted by the journal. However, check for: a) all species names must be given in *italic*, b) the authority and year of publication are required on the first appearance of a species name in the text, but not thereafter, and c) citations and reference list must be arranged following the format below.

Reference cited in the text should read as follows: Tillyard (1924), (Tillyard 1924), Swezey & Williams (1942). The reference list should be prepared according to the following standard:

Swezey, O. & F. Williams, 1942. Dragonflies of Guam. Bernice P. Bishop Museum Bulletin 172: 3-6.

Rebora, M., Piersanti, S. & E. Gaino. 2004. Visual and mechanical cues used for prey detection by the larva of *Libellula depressa* (Odonata Libellulidae). *Ethology, Ecology & Evolution* 16(2): 133-144.

Citations of internet sources should include the date of access.

The manuscript should end with a list of captions to the figures and tables. The later should be submitted separately from the text preferably as graphics made using one of the Microsoft Office products or as a high resolution picture saved as a .jpg or .tif file. Hand-made drawings should be scanned and submitted electronically. Printed figures sent by the post could be damaged, in which case authors will be asked to resubmit them.

Manuscripts not arranged according to these instructions may also be accepted, but in that case their publication will be delayed until the journal's standards are achieved.

Nr.	Jahr	geförderte Person bzw. Körperschaft	Fördergegenstand
62	2010	Villanueva, Reagan, Philippinen	Fieldwork on dragonflies on Siargao and Bucas Grande islands (Philippines)
63	2010	Asmaa Hassan Jabr, Baghdad, Iraq	Providing odonatological literature to M.Sc. student Asmaa Hassan Jabr, Department of Biology, College of Education, (Ibn al-Haitham), Adhamiyah, Anter SQ, Baghdad – Iraq
64	2010	Kosterin, O.E., Russia	The Odonata of the Cardamon mountains in Cambodia – progress study November 2010
65	2010	Villanueva, Reagan, Philippinen	Fieldwork on dragonflies on Samar Island (Philippines)
66	2010	Villanueva, Reagan, Philippinen	Fieldwork at Balut/Saranggani (Philippines) and Talaud islands (Indonesia)
67	2010	Villanueva, Reagan, Philippinen	Endemic species of the Diomabok-Lake region south of Davao, The Philippines
68	2010	Graham Reels, Hong-Kong	African Odonata (Dijkstra & Clausnitzer, Eds) text edit
69	2011	Rory Dow, Niederlande	Expedition to the Odonata of the Hose Mts., Sarawak, Malaysia
70	2011	Dejan Kulijer, Bosia & Herzegovina	Odonata of the Livanjsko poljekarst wetland area, with special emphasis on Coenagrion ornatum
71	2011	Do Manh, Cuong, Hanoi, Vietnam	Study of Odonata in north central Vietnam
72	2011	Kosterin, O.E., Russia	The Odonata of the Cardamon mountains in Cambodia – progress study August 2011
73	2011	Villanueva, Reagan, Philippinen	Odonata of Tawi-Tawi-Island, The Philippines
74	2011	Elena Dyatlova, Ukraine	Odonata of Moldavia – progress study
75	2011	Zhang, Haomiao, Guangzhou, China	The Superfamily Calopterygoidea in South China: taxonomy and distribution III – Travelling grant to the Guizhou and Yunnan Provinces, Summer 2011
76	2011	Marinov, Milen, Christchurch, New Zealand	Odonata at artificial light sources – review paper
77	2011	Do Manh, Cuong, Hanoi, Vietnam	Providing the Odonatological literature database
78	2010	Villanueva, Reagan, Philippinen	Stereomikroskop
79	2010	Villanueva, Reagan, Philippinen	Odonata of the Diomabok-Lake region south of Davao, The Philippines Follow-up
80	2011	Villanueva, Reagan, Philippinen	Odonata of the Catanduanes-Island, The Philippines
81	2012	Villanueva, Reagan, Philippinen	Odonata of Dinapigue, The Philippines
82	2012	Dow, Rory, UK/The Netherlands	Odonata of Kalimantan, Borneo, Malaysia
83	2012	Marinov, Milen, Christchurch, New Zealand	Odonata species diversity of the "Eua Island, Kingdom of Tonga"
84		Marinov, Milen, Christchurch, New Zealand	Odonata of Solomon-Islands
85	2012	Villanueva, Reagan, Philippinen	Palawan-Odonata, The Philippines
86	2012	Do Manh, Cuong, Hanoi, Vietnam	Mau Son Mountain Odonata, Vietnam
87	2012	Dow, Rory, UK/The Netherlands	Odonata of Gunung Pueh, Borneo, Malaysia
<b>In Planung</b>			
	2013	Ananian, Vasil, Yerevan, Armenia	Ecology of Cordulegaster vanbrinckae
	2013	Villanueva, Reagan, Davao, Philippinen	Odonata of Mt. Lomot and Mt. Sumagaya, The Philippines
	2013	Büsse, Sebastian, Göttingen, Germany	Epiophlebia in China