



International Dragonfly Fund - Report

Journal of the
International Dragonfly Fund

ISSN 1435-3393

Content

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Mindanao Island, Philippines

1-26

Volume 59 2013

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

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 59

- Date of publication: 09.02.2013
- Publisher: International Dragonfly Fund e.V., Schulstr. 7B, 54314 Zerf, Germany. E-mail: oestlap@online.de
- Responsible editor: Martin Schorr

Small Odonata collection from Talaingod, Davao del Norte, Mindanao Island, Philippines

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Abstract

Odonata survey was conducted in Talaingod, Davao del Norte, Mindanao Island. Four major sites were explored in Barangay Santo Niño from December 26 – 30, 2012. Thirty five species under eleven families including one new species were found representing the first odonatological record in the province of Davao del Norte. Three species need further study while *Orthetrum glaucum* represents a new record for the island of Mindanao. *Coelliccia exoleta* population, a vulnerable species in the IUCN Red List of Threatened Species, was found.

Introduction

Knowledge on the Odonata fauna of the Philippine archipelago is getting clearer in the recent years. Hämäläinen & Müller (1997) listed 126 species from the island of Mindanao which includes several species still formally to be described. Several species listed by Hämäläinen & Müller (1997) are already described or added (Gassmann & Hämäläinen, 2002; Kalkman & Villanueva, 2011; van Tol, 2005). Additional island records including new species are recently added in the list (Villanueva, 2011) while more unpublished data representing new species and island records are available in the first author's collection. This will put the Odonata fauna of Mindanao to over 140 species.

Although there is significant advancement in our understanding of Mindanao's Odonata fauna, a huge part of the island remained unexplored to date. One such area is the mountain chain (Pantaron Range) that runs north to south in central Mindanao. This mountain chain is bordered by Agusan in the east and Bukidnon in the west. Politically, this mountain chain belongs in part to the provinces of Misamis Oriental, Agusan del Norte, Agusan del Sur, Bukidnon and Davao del Norte. At present, not a single Odonata in literature or in any collection known to the authors came from this



interesting part of the island. Although Hämäläinen & Müller (1997) mentioned 56 species from Bukidnon, none came from the terrain studied in December 2012.

In the earlier times, this region was inaccessible to collectors due to lack of road access. Thus very few materials ever reach into the market for insect trade. Three decades ago when access was possible to this remote region, it was disturbed by the onset of insurgency. Presently, this region remained difficult to enter due to the strong presence of insurgents and illegal activities of some influential families. In addition even at the present times, "*pangayaw*" (tribal vendetta-killing – blood for blood) is still in practice in the area. Although such killing spree is supposedly directed to those who committed crime to the family who declare "*pangayaw*", security while collecting is always at threat.

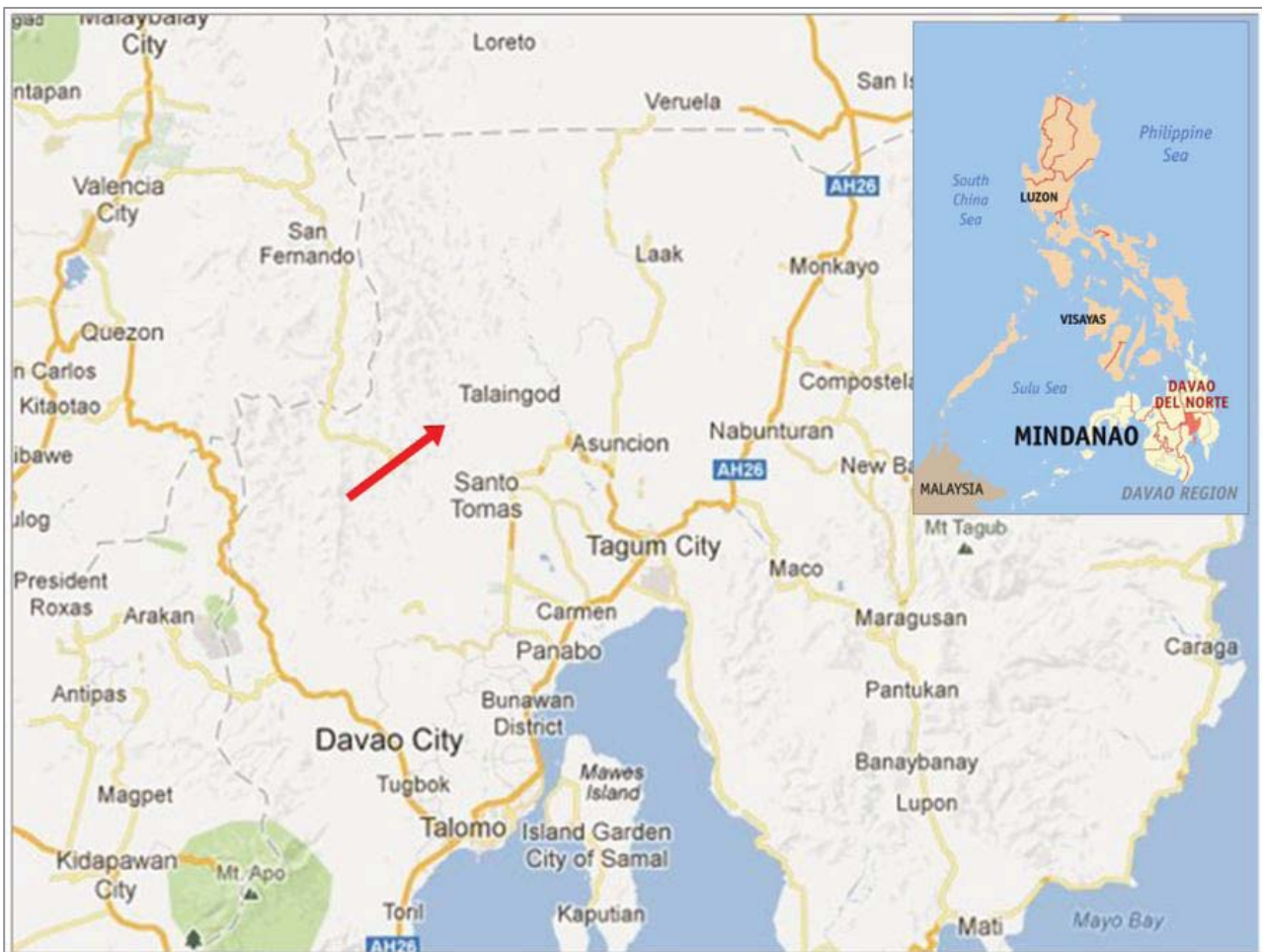


Figure 1: Talaingod north of Davao City; <http://www.philippinen-nachrichten.info/wp-content/uploads/2013/01/karte-compostela-davao.jpg>

The municipality of Talaingod (Figure 1; 7°39'0.00"N 125°37'0.00"E) on the province of Davao del Norte is one remote municipality located within the mountain chain. This municipality has three barangay occupying an area of 65,000 hectares.



A barangay is the smallest administrative division in the Philippines and is the native Filipino term for a village, district or ward. Majority of the residents in this municipality belong to the tribal group – Ata Manobo (Figure 2). The creation of this town is covered with controversy (see: <http://davaotoday.com/main/2007/10/23/the-fugitive-of-talaingod/> and http://gina.ph/CyberDyaryo/features/cd1999_0812_004.htm). Hence, this municipality is not so accessible for those without contact from the inside. Presently, a new road (Figure 3 – 5) connecting Davao del Norte and Bukidnon passes this municipality.

Recently I became acquainted with Gundi Badao (Figure 6), a student in Mountain View College Bukidnon. He is a son of one of the *Datu's* (chieftain) of Talaingod. Upon some discussion he agreed to help conduct Odonata survey in the municipality. Thus a short trip was organized.



Figure 2a. Photos of the Ata Manobo; young children.





Figure 2b. Photos of the Ata Manobo; close-up view of Ata Manobo dwellings.



Figure 2c. Photos of the Ata Manobo; Ata Manobo community.





Figure 3a, b. New road connecting Davao del Norte province to Bukidnon province.





Figure 4a, b. Newly cemented road, cutting the mountain.





Figure 4c, d. Newly cemented road, cutting the mountain.





Figure 5a, b. Newly erected bridge damaged by the recent Typhoon Pablo.





Figure 6a. Photo of Gundi Badao.



Figure 6b. Gundi (right) with his cousin.

Use of Money from the IDF

The money granted by the IDF was used for wage, daily cost of living and transportations of Hilario Cahilog and Gundi Badao who conducted Odonata sampling. All of the expenses incurred during the assessment came from IDF grant.





Figure 7 a, b. Sites visited; Forested streams.





Figure 8a, b. Sites visited; 8a-b. Forested creeks.





Figure 9. Pools formed by large boulders blocking the waterway.



Figure 10. Steep rapid.





Figure 11: Swamp covered by thick reed.

Odonata survey was conducted in barangay Santo Niño, Talaingod from December 26 to December 30 by the second author. Although all potential habitats were explored (Figure 7-11), four sites were the focused of the survey. The other barangays were not explored due to short notice to seek permission from the other chieftains.

- A. Basak creek, Santo Niño, Talaingod, Davao del Norte, Mindanao
- B. Hiramayon swamp, Sitio Basak, Santo Niño, Talaingod, Davao del Norte, Mindanao
- C. Papangi creek, Upper Tugas, Santo Niño, Talaingod, Davao del Norte, Mindanao
- D. Sitio Kailawan, Purok 24, Santo Niño, Talaingod, Davao del Norte, Mindanao

Results

Thirty five species under eleven families including one new species were found. These represent the first odonatological record in Davao del Norte province. Four species need careful study for verification of its identity. One species represents a new record for the island of Mindanao.



Majority of the collected species are endemic in the Philippines. *Coeliccia exoleta* population, a vulnerable species in the IUCN red list was found.

Annotated list of species

Amphipterygidae

1. *Devadatta podolestoides basilanensis* Laidlaw, 1934 [A, D]

Calopterygidae

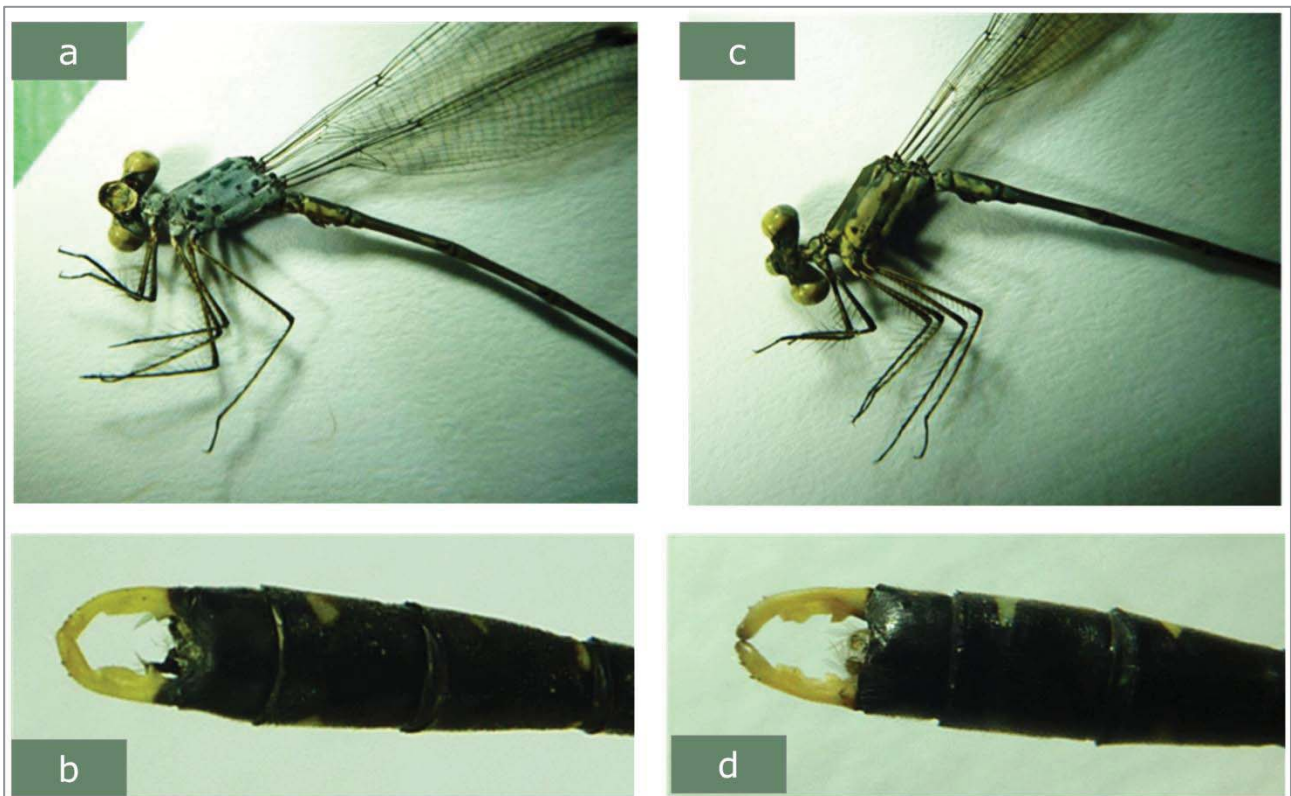
2. *Neurobasis anumariae* Hamalainen, 1989 [A, D]
3. *Vestalis melania* Selys, 1873 [D]

Chlorocyphidae

4. *Rhinocypha colorata* (Hagen in Selys, 1869) [C]
5. *Rhinocypha turconii* Selys, 1891 [A, D]

Lestidae

6. *Lestes* sp. [B] (Figure 12)



Figures 12. *Lestes* spp. a-b. *Lestes praemorsus praemorsus*, Smaller species with less pronounced ventro-basal tooth of the cerci, c-d. *Lestes* sp., Larger species with prominent ventro-basal tooth in the cerci.



The island of Mindanao has one known species – *Lestes praemorsus praemorsus*. The present population represents two forms. One form which has less pronounced ventro-basal tooth of the cerci is close to those of *Lestes praemorsus praemorsus* from other sites in Mindanao. Further study is needed for Philippine members of *Lestes*.

Megapodagrionidae

7. *Rhinagrion reinhardi* Kalkman & Villanueva, 2011 (Figure 13)

A single female was photographed. Unfortunately, no specimen was collected. This recently described species (Kalkman & Villanueva, 2011) was recorded in four provinces in Mindanao, and the present record is the first for the province of Davao del Norte.



Figure 13: *Rhinagrion reinhardi* female.

Protoneuridae

8. *Prodasineura integra* (Selys, 1882) [C]

Coenagrionidae

9. *Argiocnemis rubescens intermedia* Selys, 1877 [B]



10. *Ceriagrion lieftincki* Asahina, 1967 [B]

11. *Pericnemis* sp.n. [D] (Figure 14)

Eight males were collected. Although no female specimen is available, the present species is clearly a new species. Taxonomic review on the genus is ongoing and the present species will be dealt with in more details.



Figure 14a, b: *Pericnemis* sp.n.; adult male.





Figure 14c: *Pericnemis* sp.n. adult male, closer view of the thorax.

12. *Sangabasis* sp. cf. *dentifer* [B] (Figure 15)

Villanueva (2012) erected the genus *Sangabasis* to accommodate four species previously placed in *Amphicnemis*. In the island of Mindanao, one species is known – *Sangabasis dentifer*. This species is known from a single female collected in 1930s from “Davao Province”.

The female of the present species clearly does not fit the description of *S. dentifer*. Villanueva & Dow (in prep) will deal this in detail.



Figure 15a. *Sangabasis* sp. cf. *dentifer*, closer view of the thorax.





Figure 15b. *Sangabasis* sp. cf. *dentifer*, pair in tandem.

13. *Teinobasis annamaijæ* Hämäläinen & Müller, 1989 [A, C, D]

Platycnemididae

14. *Coeliccia dinocerus* Laidlaw, 1925 [C] (Figure 16)

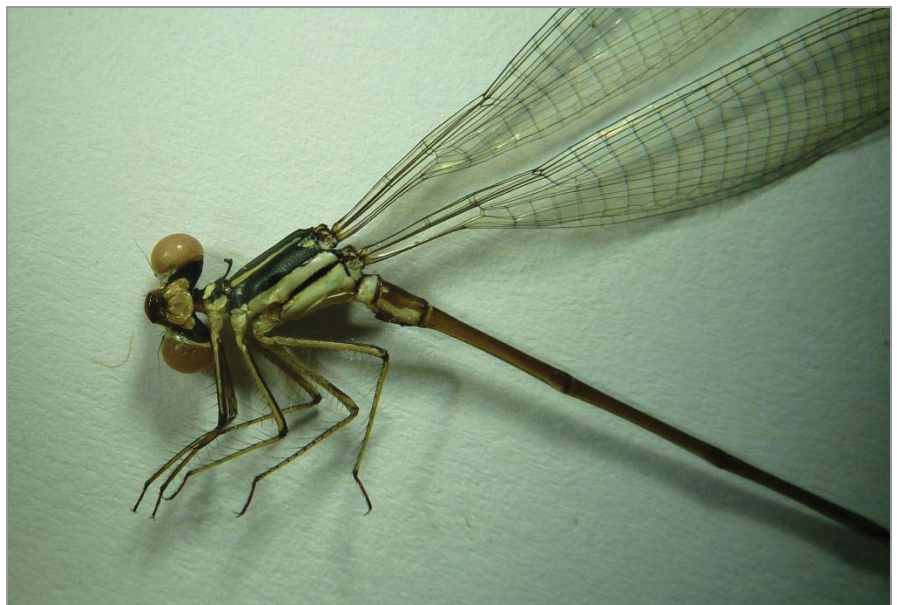


Figure 16a. *Coeliccia dinocerus*, closer view of thorax.





Figure 16b. *Coeliccia dinocerus*, pair in tandem.

15. *Coeliccia exoleta* Lieftinck 1961 [D] (Figure 17)

This species was listed as vulnerable in the 2010 IUCN Red List of threatened species (Villanueva 2009). Finding this species in the area is very important in terms of conservation effort since the entire municipality is under a logging concession.



Figure 17. *Coeliccia exoleta*, closer view of thorax.



The municipality of Talaingod is one of the logging concession area in the country. The never ending sight of barren land is a silent testament to decades of unregulated logging. Although large scale logging company no longer exists, it is being replaced by hundreds of small scale tree cutting and kaingin activities (burning of trees for cultivation purposes) (Figure 18).



Figure 18a, b. Habitat threats, a. *Kaingin* activity, b. Logging activity.





Figure 18c, d. Habitat threats, deforested mountain.





Figure 18e. Habitat threats, deforested mountain.

16. *Risiocnemis appendiculata* (Brauer, 1868) [C, D]
17. *Risiocnemis atripes* (Needham & Gyger, 1939) [D]
18. *Risiocnemis erythrura* (Brauer, 1868) [D]
19. *Risiocnemis flammea* (Selys, 1882) [A, D]
20. *Risiocnemis tendipes* (Needham & Gyger, 1941) [A, D] (Figure 19)

Platystictidae

21. *Drepanosticta lymetta* Cowley, 1936 [C] (Figure 20a)

The present species clearly fit the species described by van Tol (2005) as *Drepanosticta lymetta*. It differs from *Drepanosticta clados* in the shape of the posterior lobe. The former species has shorter posterior lobe while the latter has an elongated posterior lobe.





Figure 19. *Risiocnemis tendipes* male.

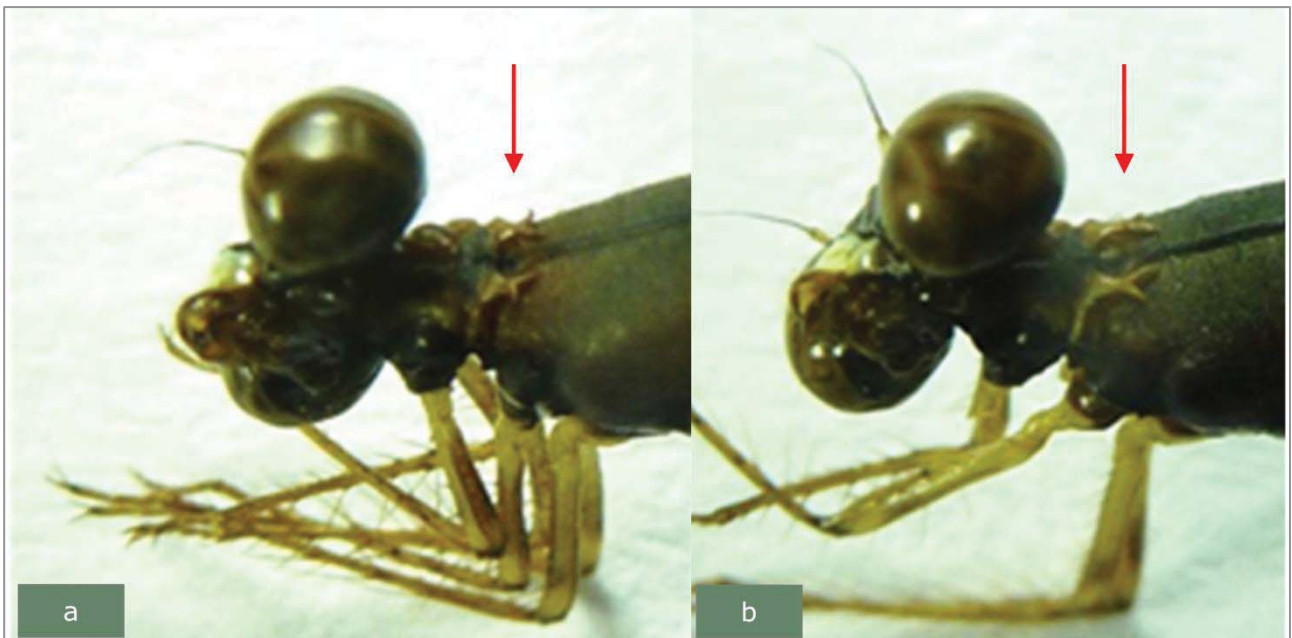


Figure 20 a, b. a - *Drepanosticta lymetta* and b - *Drepanosticta clados*, close view posterior lobe of prothorax.

The first author has studied several populations from various locations including those collected near from the type locality. It shows that this species in the pre-



sent sense is an aggregate of closely related species with at least two undescribed including the Talaingod population.

22. *Drepanosticta clados* van Tol, 2005 [A, D] (Figure 20b)

23. *Drepanosticta flavomaculata* van Tol, 2005 [A] (Figure 21)



Figure 21. *Drepanosticta flavomaculata*, male.

Corduliidae

24. *Heteronaias heterodoxa* (Selys, 1878)

No specimen was obtained. However, several individuals were seen flying along the ravine.

Libellulidae

25. *Agrionoptera insignis* (Rambur, 1842) [B]

26. *Diplacina bolivari* Selys, 1882 [A, D] (Figure 22)





Figure 22. *Diplacina bolivari*, male.

- 27. *Diplacina braueri* Selys, 1882 [C]
- 28. *Neurothemis r. ramburii* (Brauer, 1866) [C]
- 29. *Neurothemis t. terminata* Ris, 1911 [B]
- 30. *Orthetrum glaucum* (Brauer, 1865) [D]

This species is known in the Philippines from the island of Luzon. It is well distributed in Sundaland¹. Although expected to be present in Mindanao, this is the first documentation of this species in the island.



Figure 23. Hilario Cahilog (second author: right) with Gundi's cousin.

¹ Politically, Sundaland covers a small portion of southern Thailand (provinces of Pattani, Yala, and Narathiwat); nearly all of Malaysia (nearly all of Peninsular Malaysia and the East Malaysian states of Sarawak and Sabah in northern Borneo); Singapore at the tip of the Malay Peninsula; all of Brunei Darussalam; and all of the western half of the megadiversity country of Indonesia, including Kalimantan (the Indonesian portion of Borneo, Sumatra, Java, and Bali). The Nicobar Islands which are under Indian jurisdiction, are also included. (http://www.eoearth.org/article/Biological_diversity_in_Sundaland).



31. *Orthetrum pruinosum clelia* (Selys, 1878) [D]
32. *Orthetrum s. sabina* (Drury, 1770) [D]
33. *Orthetrum t. testaceum* (Burmeister, 1839) [C]
34. *Tramea transmarina euryale* (Selys, 1878) [B]
35. *Trithemis festiva* (Rambur, 1842) [D]

Acknowledgement

The authors (Figure 23) are grateful to Gundi Badao and his family for the kind assistance in the field. The first author is thankful to Martin Schorr for providing fund for this trip and helping in the production of fine figures. This trip is funded entirely by International Dragonfly Fund.

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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)
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