

# First records of dragonflies (Odonata) from the Foja Mountains, Papua Province, Indonesia

Vincent J. Kalkman<sup>1</sup>, Henk van Mastrigt<sup>2</sup> & Stephen J. Richards<sup>3</sup>

<sup>1</sup>Nationaal Natuurhistorisch Museum – Naturalis  
Postbus 9517, NL-2300 RA Leiden, THE NETHERLANDS  
Email: kalkman@naturalis.nl

<sup>2</sup>Kelompok Entomologi Papua, Kotakpos 1078, Jayapura 99010, Papua, INDONESIA  
Email: hevamas@yahoo.com.au

<sup>3</sup>Vertebrates Department, South Australian Museum, North Terrace, Adelaide, SA 5000, AUSTRALIA and Rapid Assessment Program, Conservation International, Atherton, Queensland 4883, AUSTRALIA  
Email: s.richards@conservation.org

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**Abstract.** A small collection of dragonflies obtained during two RAP biodiversity surveys to the Foja Mountains, organised by Conservation International with help of LIPI, Bogor, in 2005 and 2008 are brought on record. Twelve species were found at two sites below 100 m near Kwerba, a small village adjacent to the Mamberamo River. Thirteen species were recorded at 'Moss Camp' at 1650 m in the Foja Mountains. Of these *Hemicordulia ericetorum* was previously only known from the central mountain range while *Oreaeschna dictatrix* was only known from Lake Paniai and the Cyclops Mountains. It is likely that more genera and species now known only from the central mountain range occur in the Foja Mountains and probably also the Van Rees Mountains. However one species, *Argiolestes* spec. nov. is probably endemic to the Foja Mountains. Although this collection includes only a small fraction of the diversity likely to be present in the mountains it is nonetheless of interest as it represents the first records of dragonflies from the area.

**Ikhtisar.** Sejumlah kecil capung diperoleh selama dua survei keragaman (RAP) ke Pegunungan Foja yang diselenggarakan oleh Conservation International dalam kerja sama dengan LIPI, Bogor, pada tahun 2005 dan 2008. Duabelas spesies dikoleksi di dua lokasi di bawah 100 m dpl di sekitar Kwerba, suatu kampung di pinggir Mamberamo. Tigabelas spesies dikumpulkan di 'Moss Camp', pada 1650 m dpl. di Pegunungan Foja. Di antaranya *Hemicordulia ericetorum* yang hanya diketahui dari pegunungan tengah dan *Oreaeschna dictatrix* yang hanya diketahui dari daerah danau Paniai dan Pegunungan Cyclops. Barangkali lebih banyak genus dan spesies yang sampai sekarang hanya diketahui dari pegunungan

tengah hadir di Pegunungan Foja dan juga di Pegunungan Van Rees. Namun, satu spesies, *Argiolestes* spec. nov., barangkali endemik di Pegunungan Foja. Walaupun jumlah kecil ini hanya sebagian kecil dari keragaman capung yang barangkali hadir di pegunungan, namun hasilnya penting karena merupakan hasil capung pertama dari wilayah tersebut.

## Introduction

The Northern part of Papua Province is dominated by two large mountain ranges: the Van Rees Mountains and the Foja or Gauttier Mountains. These mountains are largely uninhabited and contain large tracks of undisturbed habitats. Although far lower than the central mountain range of Papua, the mountains are still high, with peaks over 2000 m in the Foja range. The absence of villages in the Foja Mountains makes access difficult and little fieldwork has been conducted in this range. The only published records of dragonflies from the vicinity of the Van Rees and Foja Mountains are from expeditions that held camp in lowland forest along the Mamberamo River. In 1920 and 1939 ten species were collected at Pionierbivak and in 1940 sixteen species were collected at the Batavia rapids. Thus far no records of dragonflies have been published from the Foja Mountains. In the present article a small collection of dragonflies collected in 2005 and 2008 is brought on record.

## Methods and results

The material was collected during two expeditions to the Foja Mountains in 2005 and 2008 organized by Conservation International. Dragonflies were collected at three sites, all in Pegunungan Foja, Kabupaten Sarmi:

1. Kwerba, 70 m asl, 15-23 xi 2005, 2.643° S; 138.409° E, H. van Mastrigt
2. Manirim camp near Kwerba, 50-100 m asl, 21 xi 2005, 2.595° S 138.442° E, S. Richards
3. Moss camp, 1650 m asl, 22 xi to 7 xii 2005, H. van Mastrigt & S. Richards and from 6-27 xi 2008, 2.575° S; 138.715° E, H. van Mastrigt

In total 59 specimens belonging to 21 species were collected (table 1). The material is stored in the Koleksi Serangga Papua (Collection Papuan Insect) in Jayapura (KSP), the Zoologisch Museum Amsterdam (ZMA) and the Nationaal Natuurhistorisch Museum Naturalis, Leiden (RMNH).

Table 1. Dragonflies recorded during the expedition of Conservation International to the Foja Mountains in 2005 and 2008.

Family	Species	(1)	(2)	(3)
Calopterygidae	<i>Neurobasis australis</i> Selys, 1897	1m, 1f		
Chlorocyphidae	<i>Rhinocypha tincta</i> Rambur, 1842	2m		
Megapodagrionidae	<i>Argiolestes</i> spec. nov.			1m
Megapodagrionidae	<i>Argiolestes</i> spec.			1f
Megapodagrionidae	<i>Podopteryx selysi</i> (Foerster, 1899)			1m
Coenagrionidae	<i>Teinobasis scintillans</i> Lieftinck, 1932	1m	1m, 1f	7m, 4f
Coenagrionidae	<i>Papuagrion</i> spec.	1f	1f	
Protoneuridae	<i>Nososticta callisphaena</i> (Lieftinck, 1937)	1m		1m, 1f
Aeshnidae	<i>Oreaeschna dictatrix</i> Lieftinck, 1937			1f
Aeshnidae	<i>Anax</i> spec.			1m
Aeshnidae	<i>Agyrtacantha microstigma</i> Selys, 1878		1m	
Corduliidae	<i>Hemicordulia Procordulia</i>			1f
Corduliidae	<i>Hemicordulia ericetorum</i> Lieftinck, 1942			4m
Libellulidae	<i>Orthetrum villosovittatum</i> Brauer, 1868	1f	1f	7m, 4f
Libellulidae	<i>Orthetrum glaucum</i> (Brauer, 1865)		1m	
Libellulidae	<i>Nesoxenia mysis</i> (Selys, 1878)		1m	
Libellulidae	<i>Prothorthemis coronata</i> (Brauer, 1866)		1f	2m, 1f
Libellulidae	<i>Neurothemis</i> spec.	1f		
Libellulidae	<i>Huonia arborophila</i> Lieftinck, 1942	2m		
Libellulidae	<i>Lyriothemis hirundo</i> Ris, 1913			2m
Libellulidae	<i>Orthetrum serapia</i> Watson, 1984			1m

Explanation: (1), (2), (3) according to the three sites mentioned above

## Discussion

In total twelve species were collected at the two lower sites. Most of the species found there are common and widespread across large parts of New Guinea. *Nososticta callisphaena* was previously only known from the general vicinity of Jayapura and the new records suggest that it too is far more widespread in at least the western part of northern New Guinea.

The thirteen species collected at site three (Moss Camp) are the first dragonflies recorded from the Foja Mountains. The Foja Mountains extend almost from sea level to over 2000 m, and they cover a large area and contain a variety of pristine habitats. It is therefore possible that the dragonfly fauna exceeds well over 100 species. The present material comes from 1650 m at which elevation the fauna is already impoverished although probably several dozens of species can be found

above 1500 m. Five of the recorded species, *Lyriothemis hirundo*, *Orthetrum glaucum*, *Orthetrum villosovittatum*, *Prothorthemis coronata* and *Teinobasis scintillans*, are common and widespread at a wide range of altitudes in New Guinea and *Nososticta callisphaena* seems common in NW New Guinea. *Podopteryx selysi* is widespread on New Guinea but is under recorded as it breeds in water filled holes in plants (phytotelmata) and thus is not found at water.

*Agyrtacantha microstigma* is also widespread and is known from several places in Northwest New Guinea, Manokwari on the Bird's Head and from the Aru Islands. The species is probably also under recorded as it is most active at dusk making it difficult to catch. The single male *Anax* does not fit any of the species of *Anax* known from New Guinea and needs further study. The single female *Argiolestes* spec. seems to be distinct from *Argiolestes* spec. nov. but it is not possible to identify this specimen. The remaining species are the most interesting species as they are confined to higher altitudes or are possibly endemic to the Foja Mountains. Both *Oreaeschna dictatrix* and *Hemicordulia ericetorum* are endemic to the highlands of New Guinea. *Oreaeschna dictatrix* was previously known from elevations between 1000-1742 m at Lake Paniai and the Cyclops Mountains. *Hemicordulia ericetorum* has only been found in the central mountain range from 1600 to 3225 m. Our new records of these species show that the Foja Mountains are large and high enough to support dragonflies confined to highlands. This suggests that several other genera and species thus far considered to be confined to the central mountain range occur in the Foja Mountains. The single female of *Hemicordulia* or *Procordulia* cannot be identified to species level but is certainly distinct from *H. ericetorum*. *Argiolestes* spec. nov. belongs to *Argiolestes* sensu stricto, a group of species with small ranges. It is therefore likely that this species is confined to the Foja Mountains. The species will be described in a review of the *Argiolestes* sensu stricto group (Kalkman et al. in prep.). Without doubt several other undiscovered species remain waiting for future expeditions.

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Fig. 1. Male *Teinobasis scintillans*  
Moss Camp, Foja (picture Stephen J. Richards)



Fig 2. Female *Oreaeschna dictatrix*  
Moss Camp, Foja (picture Mel White).