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## Some Odonata from the Northern Sierra Madre Natural Park, Isabela, Luzon, Philippines

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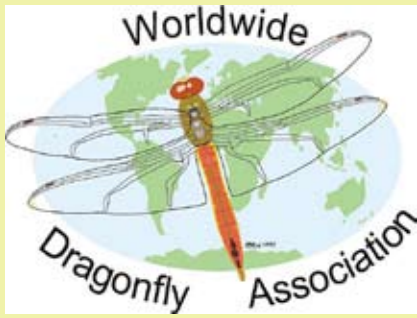
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## Some Odonata from the Northern Sierra Madre Natural Park, Isabela, Luzon, Philippines

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The Northern Sierra Madre Natural Park (NSMNP) covers an area of 359,486 ha (DENR 2001). The park harbors a variety of terrestrial habitats: mangrove forests and beach forests along the coast, ultra-basic forest, lowland dipterocarp forest, and montane oak-laurel forest and mossy forest at high elevations (Mallari et al., 2001). The NSMNP is one of ten priority protected areas in the Philippines: it holds 25 percent of the remaining primary lowland forest of the archipelago (Tan, 2000). The area has remarkably high levels of endemism: 30 percent of bird species and 62 percent of mammal species recorded in the NSMNP are endemic to the Philippines (Van Weerd 2002). Thirty-five globally threatened species are recorded in the protected area.

Logging, agricultural encroachment, the use of destructive fishing and hunting methods, and the conversion of wetlands form major threats to the biodiversity of the protected area. Government plans for infrastructural development and mining could have a severe impact on the park.

From 12 to 24 September 2008, we organized a biodiversity survey to *sitio* Dipagsangan, *barangay* Didian in the municipality of Palanan. We camped in lowland dipterocarp forest at Dipinantahikan (campsite 1), and in mid-elevation forest at Pinakdatdatin ti Bulayo (campsite 2) (see table 1).

	Altitude (m.a.s.l)	Location
Dipinantahikan (campsite 1)	300	N 16° 53.398' E 122° 20.471'
Pinakdatdatin ti Bulayo	700	N 16° 51.984' E 122° 18.859'

The following is an annotated list of the species encountered during the expedition. We only include species found in the forest areas; species encountered near Palanan town proper are not included. The short field survey revealed 35 species, and represents the first odonata survey in the eastern side of NSMNP. New records

are predominantly zygopteran, which, with one exception, are all endemic. This shows the remarkable odonata assemblage in this largest remaining Philippine forest block. The present list is the result of a short fieldwork period (with field days further shortened by a tropical depression hitting the area during the survey). Additional species are to be expected when more fieldwork is conducted during good weather conditions. More field work is also necessary to provide distributional data for the undescribed species.

### **Platystictidae**

*Drepanosticta* sp. (?n.)

Large solitary species presumed endemic in Luzon Island. The species was found perching in well shaded areas of the creek. It belongs to the *Drepanosticta halterata*-group and is allied to the undescribed species from Cebu and Bohol islands characterized by a triangular-shaped posterior lobe process.

*Drepanosticta halterata* (Brauer, 1868)

The dominant zygopteran encountered in well shaded rheophilous areas.

*Drepanosticta moorei* van Tol, 2001

This Luzon endemic was encountered beside a partially shaded creek perching high on the shrubs.

*Protosticta lepteca* van Tol, 2005

A dainty north central Luzon species.

*Sulcosticta* sp. n.

In the field the species at first glance resembles lestids with the abdomen positioned like a golf-tee. This small species perched among hanging vines and roots a few feet from the ground.

### **Coenagrionidae**

*Amphicnemis isabelae* Gapud, 2006

This species was described based on a single male collected in the Forest Dynamic Plot, Palanan in 2004 (Gapud, 2006). The species was encountered perching near the forest floor with no nearby water source.

*Pseudagrion p. pilidorsum* (Brauer, 1868)

This was the only Oriental damselfly species encountered in the area.

*Teinobasis cf. filiformis* (Brauer, 1868)

Two mature males of this Luzon region endemic were encountered.

*Teinobasis nigra* Champion and Laidlaw, 1928

The species is a Luzon endemic. It was encountered above a stagnant portion of the stream with muddy substrate.

*Teinobasis samaritis* Ris, 1915

### **Platycnemididae**

*Risio cnemis arator* Hamalainen, 1991

*Risio cnemis atropurpurea* (Brauer, 1868)

*Risio cnemis ignea* (Brauer, 1868)

*Risio cnemis incisa* Kimmins, 1936

This north and central Luzon endemic was encountered at forest seepages, small streams and springs, though occurring in lower numbers than the similar *R. ignea*.

*Risio cnemis elegans* Kitagawa 1990

The species is a north Luzon endemic. It was encountered in shaded seepages and even in moist forest floor several meters from water sources. Pairs were seen ovipositing on moist moss with no standing or running water nearby. *Risio cnemis varians* was listed by Gapud (2006) from Forest Dynamic Plot, Palanan. We believe this was a misidentification of *Risio cnemis elegans*, whose type locality is San Mariano, Isabela.

*Risio cnemis* sp. n.1

The species was encountered only in the stream running along ultrabasic forest. The only member of the genus noted perching in warm well-lit areas.

*Risio cnemis* sp. n.2

The species was encountered in low numbers in the site occupied by the previous species. The species resembles *R. arator* in the shape of the inferior anal appendage while the superior anal appendage resembles that of the previous species.

### **Megapodagrionidae**

*Argiolestes baltazarae* Gapud and Adorada, 2003

The species is presumed endemic in Sierra Madre area. The species was seen in well shaded seepages.

*Rhinagrion* sp. (n.)

This is a larger species with different bluish markings than *R. philippina*.

### **Chlorocyphidae**

*Cyrano unicolor* (Hagen in Selys, 1869)

The species is a Luzon and Western Visayas endemic. Only the red form was noted in the survey area.

*Rhinocypha colorata* (Hagen in Selys, 1969)

*Rhinocypha turconii* Selys, 1891

This species was seen in less disturbed lowland forest areas compared to its congener and was more abundant in the campsite at Dipinantahikan (primary lowland forest) than in Dipagsangan, a small village (rice fields and orchards in secondary lowland forest).

### **Calopterygidae**

*Neurobasis luzoniensis* Selys, 1873

This large beautiful metallic green damselfly is endemic in the Luzon region. The species prefers undisturbed habitat and is known to be dwindling in central Luzon areas.

*Vestalis melania* Selys, 1873

This endemic species is widely distributed in the archipelago, except Palawan.

### **Gomphidae**

*Gomphidia kirschii* Selys, 1878

### **Aeshnidae**

*Tetracanthagyna* sp. (based on larva)

Dredging done on selected areas revealed middle instar larva of the species.

### **Chlorogomphidae**

*Chlorogomphus* sp.

The species closely resembles *C. dyak* but with several differences.

### **Corduliidae**

*Heteronaias heterodoxa* (Selys, 1878)

This widespread endemic species was encountered only on a few occasions.

*Idionyx philippa* Ris, 1912

A specimen was noted at the first campsite in Dipinantahikan.

### **Libellulidae**

*Diplacina bolivari* Selys, 1882

*Lyriothemis ?cleis* (could not be verified based on quick sighting)

The identity of the species could not be confirmed due to a very brief sighting of a single male perching near the campsite on Pinakdatdatin ti Bulayo.

*Onychothemis abnormis* Brauer, 1868

A single male of this rare genus was encountered.

*Orthetrum pruinosum clelia* (Selys, 1878)

*Orthetrum s. sabina* (Drury, 1770)

*Pantala flavescens* (Fabricius, 1798)

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