

ODONATA OF SUNGAI DUSUN WILDLIFE RESERVE, SELANGOR, PENINSULAR MALAYSIA

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ABSTRACT

Records of Odonata collected at Sungai Dusun Wildlife Reserve on two field surveys (8–14 June and 15–20 September 2015) are presented. Adult insects were collected in the field surveys. In total, 33 species from 11 families were recorded from both the field surveys. The species list was dominated by family Libellulidae (14 species), followed by family Platycnemididae (five species) and Aeshnidae (four species). The other families (Calopterygidae, Chlorocyphidae, Euphaeidae, Argiolestidae, Philosinidae, Coenagrionidae, Gomphidae and Synthemistidae) were represented only by 1–3 species. Species found abundantly in the sampling site were *Tyriobapta torrida* and *Vestalis amethystina*. Interesting species recorded were *Gynacantha dohrni*, *Burmagomphus arthuri*, *Tetracanthagyna plagiata* and *Oligoaeschna foliacea*. *G. dohrni* is a new record for Peninsular Malaysia. Published Odonata records from other sources were compiled to produce a species list for Sungai Dusun Wildlife Reserve. At present 38 species from 11 families are known to Sungai Dusun Wildlife Reserve.

Keywords: Biodiversity, dragonflies, Odonata, Peninsular Malaysia, Sungai Dusun

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INTRODUCTION

Approximately 6000 Odonata species are found around the world (Dijkstra *et al.*, 2013). In Malaysia, more than 400 species have been recorded, with Peninsular Malaysia containing more than 250 species (Choong *et al.*, 2017). Within Peninsular Malaysia, the Selangor state is quite well studied for its Odonata fauna. The recent Odonata records of Selangor can be extracted from a number of literatures (Kalkman, 2004; Norma-Rashid, 2006; Fadilawati *et al.*, 2008; Choong *et al.*, 2008, 2012; Choong, 2013, Farizawati *et al.*, 2014).

Sungai Dusun Wildlife Reserve with a land area of 4330 hectares is located at the north western Selangor. The reserve is mainly covered by lowland dipterocarp forest and peat swamp forest. The west side of the reserve is bordered by a canal connecting Sungai Tinggi and Sungai Bernam (DWNP, 2017). Very little is known about the Odonata fauna in the reserve, and the existing limited records only came from Choong (2013). Choong (2013) conducted a field survey along the trail surrounding the rhinoceros rehabilitation area in the reserve on 29 June 2013, and 14 species were recorded in the survey. We conducted two field surveys in Sungai Dusun Wildlife Reserve in 2015. Here we present the results from the field surveys together with a summary of the available published records to produce a species list of Odonata known to Sungai Dusun Wildlife Reserve.

MATERIALS AND METHODS

Field surveys were done on two occasions (8–14 June and 15–20 September 2015) at the same location (3°38'24"N, 101°20'45"E) in Sungai Dusun Wildlife Reserve. The first survey (8–14 June) was conducted by the second and the third authors while the second survey (15–20 September) was conducted by first and second authors. The weather during both the field surveys was generally good with plenty of sunshine, but it was a bit drier in the September survey. The survey was conducted during day time from 9 am to 5 pm. The habitat of the location is mainly forested swamp. Adult insects were collected using handheld nets. The

specimens were preserved with acetone treatment and then dried in silica gel. Classification of Odonata follows Dijkstra *et al.* (2013). Some of the Odonata species were also photographed in the field (Figure 1). The specimens collected are held either in the Centre for Insect Systematics at Universiti Kebangsaan Malaysia (UKM) or the Institute of Biodiversity (IBD) at Department of Wildlife and National Parks, Lanchang (Table 1). Specimens were identified to species level with the aid of a dissecting microscope (model: Leica EZ4), by reference to the relevant literatures, and direct comparison with materials from other places.

RESULTS

The sampling in June recorded 20 species (Table 1; column B), and the sampling in September recorded 27 species (Table 1; column C). In total 33 species from 11 families were recorded from both field surveys. Of these, 24 species are new records for Sungai Dusun Wildlife Reserve (Table 1; marked with *). *Gynacantha dohrni* is a new record for Peninsular Malaysia. Other interesting species recorded were *Burmagomphus arthuri*, *Tetracanthagyna plagiata* and *Oligoaeschna foliacea*. Species found abundantly in the sampling site were *Tyriobapta torrida* and *Vestalis amethystina*.

DISCUSSION

The number of species recorded from the field surveys was small (33 species), representing only 13% of the species known to Peninsular Malaysia. The small number of Odonata being recorded was mainly due to the limited types of aquatic habitats available in the sampling site. The aquatic habitats in the sampling site are mainly forested swamps and streamlets. One of the interesting findings from the field surveys was *G. dohrni*, a new record for Peninsular Malaysia. This species is quite common in Borneo (Orr, 2003), and it was also found later in Singapore (Tang *et al.*, 2010), but not in Peninsular Malaysia (Orr, 2005). This species is a resident of swamp forest (Tang *et al.*, 2010), and the sampling site in Sungai Dusun Wildlife Reserve is a forested swamp. The other interesting species recorded from the current study were *B. arthuri*, *T. plagiata* and *O. foliacea*. All these species, except *B. arthuri*, are residents of forested swamps. *B. arthuri* is normally found at lowland forest streams, and it is only found in Peninsular Malaysia and southern Thailand (Orr, 2005; Dow, 2009). For Peninsular Malaysia, the record was only known from Krau Wildlife Reserve, Pahang (Choong, 2014). Therefore, Sungai Dusun Wildlife Reserve is the second site in Peninsular Malaysia for this rare species.

The number of new records for Sungai Dusun Wildlife Reserve from the study was high (23 out of 33 species). This is mainly due to the limited existing records from Choong (2013). Nevertheless, five species from Choong (2013) were not recorded from this study – *Podolestes buwaldai*, *Archibasis viola*, *Prodasineura collaris*, *Orthetrum sabina* and *Orthetrum testaceum*. These species are added to the records from this study to produce a species list (Table 1). At present 38 species are known to Sungai Dusun Wildlife Reserve. It is noted that only small parts of the reserve have so far been surveyed for Odonata, and none of the survey locations are of peat swamp forest. It is understood that a substantial part of Sungai Dusun Wildlife Reserve is covered by peat swamp forest (DWNP, 2017), particularly the area adjacent to the North Selangor Peat Swamp bordering Sungai Tengi (Choong, 2013). It is expected that many peat swamp species found at North Selangor Peat Swamp (Choong, 2013) would also be probably present in the peat swamp forest in Sungai Dusun Wildlife Reserve.

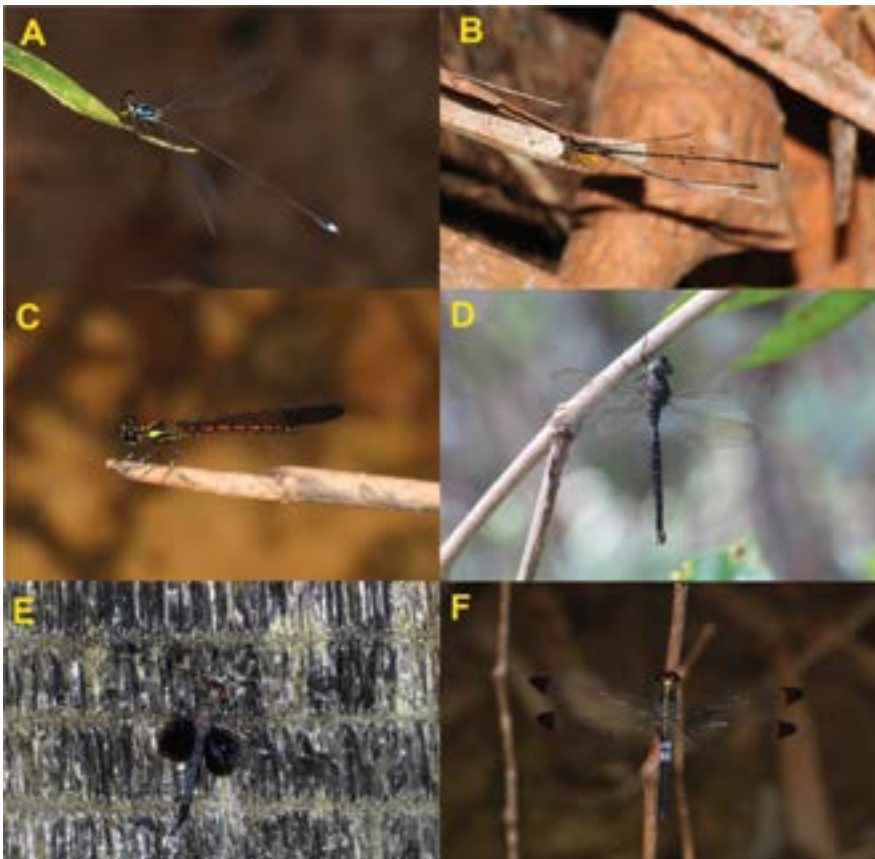


Figure 1 Some of the Odonata species photographed at Sungai Dusun Wildlife Reserve. A: *Coeliccia octogesima*, B: *Copera vittata*, C: *Sundacypha petiolata*, D: *Oligoaeschna foliacea*, E: *Tyriobapta torrida*, and F: *Cratilla metallica*.

Table 1 Odonata species known to Sungai Dusun Wildlife Reserve. **A:** records from Choong (2013); **B:** field survey on 8-14 June 2015; and **C:** field survey on 15-20 September 2015. *indicates new records for Sungai Dusun Wildlife Reserve. IUCN status: LC = least concern, DD = data deficient, and NA = no assessment.

Odonata	A	B	C	Location of specimen	IUCN Status
Family Calopterygidae					
1. <i>Vestalis amethystina</i> Lieftinck, 1965*		/	/	IBD, UKM	NA
Family Chlorocyphidae					
2. <i>Libellago lineata</i> (Burmeister, 1839)*		/		IBD	LC
3. <i>Libellago hyalina</i> Selys, 1859*		/	/	IBD, UKM	LC
4. <i>Sundacypha petiolata</i> Selys, 1859*			/	IBD, UKM	NA
Family Euphaeidae					
5. <i>Euphaea impar</i> Sélys, 1859*		/	/	IBD, UKM	LC
Family Argiolestidae					
6. <i>Podolestes buwaldai</i> Lieftinck, 1940	/				NA
7. <i>Podolestes orientalis</i> Sélys, 1862*			/	IBD, UKM	LC
Family Philosinidae					
8. <i>Rhinagrion macrocephalum</i> Selys, 1862*			/	UKM	NA
Family Coenagrionidae					
9. <i>Amphicnemis gracilis</i> Krüger, 1898*		/	/	IBD, UKM	NA
10. <i>Archibasis viola</i> Lieftinck, 1948	/				
Family Platynemididae					
11. <i>Coeliccia octogesima</i> Selys, 1863	/		/	IBD, UKM	NA
12. <i>Copera marginipes</i> (Rambur, 1842)*			/	IBD, UKM	LC
13. <i>Copera vittata</i> (Selys, 1863)	/	/	/	IBD, UKM	LC
14. <i>Prodasineura collaris</i> (Selys, 1860)	/				LC
15. <i>Prodasineura humeralis</i> (Selys, 1860)*		/	/	IBD, UKM	NA
16. <i>Prodasineura notostigma</i> (Selys, 1860)*		/	/	IBD, UKM	NA
Family Gomphidae					
17. <i>Burmagomphus arthuri</i> Lieftinck, 1953*			/	UKM	DD
Family Aeshnidae					
18. <i>Gynacantha dohrni</i> Kruger, 1899*		/		IBD	NA
19. <i>Heliaeschna idae</i> (Brauer, 1865)*		/		IBD	LC
20. <i>Oligoaeschna foliacea</i> Lieftinck, 1968*		/	/	IBD, UKM	NA
21. <i>Tetracanthagyna plagiata</i> (Waterhouse, 1877)*		/		IBD	LC
Family Synthemistidae					
22. <i>Idionyx</i> sp.*			/	IBD, UKM	-

Odonata	A	B	C	Location of specimen	IUCN Status
Family Libellulidae					
23. <i>Brachygonia oculata</i> (Brauer, 1878)	/		/	IBD, UKM	LC
24. <i>Cratilla lineata</i> (Brauer, 1878)	/	/	/	IBD, UKM	LC
25. <i>Cratilla metallica</i> (Brauer, 1878)	/		/	UKM	LC
26. <i>Diplacodes trivialis</i> (Rambur, 1842)*			/	UKM	LC
27. <i>Lathrecista asiatica</i> (Fabricius, 1798)*		/		IBD	LC
28. <i>Lyrithemis biappendiculata</i> (Selys, 1878)	/		/	UKM	LC
29. <i>Nesoxenia lineata</i> (Selys, 1879)*			/	UKM	LC
30. <i>Neurothemis fluctuans</i> (Fabricius, 1793)	/	/	/	IBD, UKM	LC
31. <i>Orchithemis pulcherrima</i> Brauer, 1878*		/	/	IBD, UKM	LC
32. <i>Orthetrum chrysis</i> (Selys, 1891)	/	/	/	IBD, UKM	LC
33. <i>Orthetrum glaucum</i> (Brauer, 1865)*		/		IBD	LC
34. <i>Orthetrum sabina</i> (Drury, 1773)	/				LC
35. <i>Orthetrum testaceum</i> (Burmeister, 1839)	/				LC
36. <i>Rhyothemis phyllis</i> (Sulzer, 1776)*		/	/	IBD, UKM	LC
37. <i>Trithemis aurora</i> (Burmeister, 1839)*			/	UKM	LC
38. <i>Tyriobapta torrida</i> Kirby, 1889	/	/	/	IBD, UKM	LC
Total number	14	20	27		

CONCLUSION

At present the Odonata checklist of Sungai Dusun Wildlife Reserve has 38 species, and a few species (*G. dohrni*, *B. arthuri*, *P. buwaldi*, *O. foliacea* and *T. plagiata*) are novel species to Peninsular Malaysia. This species list is far from complete, but it provides a basis for future reference and study of Odonata diversity for Peninsular Malaysia.

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