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## **CICADA FAUNA (HOMOPTERA: CICADOIDEA) OF THE NATIONAL PARK OF PENINSULAR MALAYSIA**

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### **ABSTRACT**

A total of 37 cicada species in 16 genera, representing 2 families, Cicadidae (30 species in 11 genera) and Tibicinidae (7 species in 5 genera), is now recorded for the National Park of Peninsular Malaysia. This checklist total is based on specimens collected from the park that have been repositied in collections of Muzium Negara and the centre for Insect Systematics, Universiti Kebangsaan Malaysia, and also those that have been previously documented. Of this total, 23 species form new records for the park, including 4 species (*Platypleura* sp1, *Platypleura* sp2, *Lemuriana* sp1 and *Lemuriana* sp2) that need to be describe as new to science. The other 14 species that have been previously recorded for the park are *Chremistica pontianaka* (Distant), *Chremistica umbrosa* (Distant), *Chremistica guamusangensis* Salmah & Zaidi, *Purana obducta* Schouten & Duffels, *Purana nebulilinea* (Walker), *Purana sagittata* Schouten & Duffels, *Orientopsaltria padda* (Distant), *Orientopsaltria ruslani* Duffels & Zaidi, *Orientopsaltria saudarapadda* Duffels & Zaidi, *Orientopsaltria vanbreei* Duffels & Zaidi, *Platylomia abdulla*

(Distant), *Mogannia sesioides* Walker, *Huechys fusca* Distant and *Abroma tahanensis* Moulton. The thus far total (37) recorded species indicates that Peninsular Malaysian cicada species are fairly well represented within the park (37%). *Orientopsaltria padda* (Distant) and *Platylomia spinosa* (Fabricius) appear to be the most common species within the park spatially.

### ABSTRAK

Sejumlah 37 spesies riang-riang dalam 16 genus, mewakili 2 famili, Cicadidae (30 spesies dalam 11 genus) dan Tibicinidae (7 spesies dalam 5 genus), telah direkodkan bagi Taman Negara di Semenanjung Malaysia. Senarai spesies ini adalah berdasarkan kepada spesimen yang telah dikumpul dari Taman Negara dan tersimpan dalam koleksi Muzium Negara dan Pusat Sistemik Serangga, Universiti Kebangsaan Malaysia, dan juga yang telah didokumenkan sebelum ini. Daripada jumlah ini, 23 spesies merupakan rekod baru bagi taman ini, termasuk 4 spesies (*Platypleura* sp1, *Platypleura* sp2, *Lemuriana* sp1 dan *Lemuriana* sp2) yang perlu diperihalkan sebagai spesies baru kepada sains. 14 spesies selebihnya, yang pernah direkodkan bagi taman ini ialah *Chremistica pontianaka* (Distant), *Chremistica umbrosa* (Distant), *Chremistica guamusangensis* Salmah & Zaidi, *Purana obducta* Schouten & Duffels, *Purana nebulilinea* (Walker), *Purana sagittata* Schouten & Duffels, *Orientopsaltria padda* (Distant), *Orientopsaltria ruslani* Duffels & Zaidi, *Orientopsaltria saudarapadda* Duffels & Zaidi, *Orientopsaltria vanbreei* Duffels & Zaidi, *Platylomia abdulla* (Distant), *Mogannia sesioides* Walker, *Huechys fusca* Distant dan *Abroma tahanensis* Moulton. Jumlah (37) spesies yang telah direkodkan sehingga kini menunjukkan bahawa taman ini mempunyai perwakilan spesies riang-riang Semenanjung Malaysia yang sederhana baik (37%). *Orientopsaltria padda* (Distant) dan *Platylomia spinosa* (Fabricius) kelihatan sebagai spesies yang paling umum bagi taman ini secara spatial.

## INTRODUCTION

In Peninsular Malaysia, the highest mountain is Mount Tahan, which is in the state of Pahang. The mountain forms the nucleus of the largest conservation area in Peninsular Malaysian known as the Taman Negara or the National Park Area. Its boundaries extend not only within the state of Pahang but also into the adjoining states of Terengganu and Kelantan. It has and still is under the jurisdiction of the Department of Wildlife and Parks (PERHILITAN) of Peninsular Malaysia. A conservation area large as such should harbour high diversity of animal life. However, there have been no published report of cicadas from this park except by Moulton (1923), Zaidi and Ruslan (1997), Duffels and Zaidi (1999), Beuk (1999), Kos and Gogala (2000), Schouten and Duffels (2002) and Salmah and Zaidi (2002).

Moulton (1923), in his monograph of cicadas from Malaya, described *Abroma tahanensis* Moulton from 3 males and 1 female specimens, all collected from Mount Tahan, and these form the first published record of cicadas from the park. The record was extended to 3 species when Zaidi and Ruslan (1997) indicate 1 male specimen of *Mogannia sesioides* Walker, 1 male specimen of *Huechys fusca* Distant, collected from Mount Tahan and Taman Negara respectively, as among the cicada specimens in the repository of the National University of Singapore. In 1998, Duffels and Zaidi reported of 2 male specimens, one labeled as Taman Negara and the other as Taman Negara, Ulu Kenyam, used as paratypes in describing their then new species *Orientopsaltria saударapadda* Duffels & Zaidi and *Orientopsaltria ruslani* Duffels & Zaidi respectively. In their revision of *Orientopsaltria* species of Southeast Asia, Duffels and Zaidi (1999) reported of among their studied materials were from the park. These include 31 specimens (4 from Merapoh sector, 4 from Kuala Tahan, 1 from Lata Berkoh, 2 from Kuala Juram, 20 from Kuala Kenyam) representing *Orientopsaltria padda* (Distant). Also studied were 8 specimens (2 male and 1 female from Kuala Kenyam; 4 male and 1 female from Lata Berkoh) for their then new species *Orientopsaltria vanbreei* Duffels & Zaidi. Additionally, In the revision of *Platylomia spinosa* species group, Beuk (1999)

reported of 1 male specimen from Taman Negara, Kuala Tahan, as among representing *Platylomia abdulla* (Distant). In the revision of *Purana nebulilinea* species group, Kos and Gogala (2000) reported of 1 male specimen from Taman Negara, Kuala Tahan, as among representing *Purana nebulilinea* (Walker).

Recently, in the revision of *Purana carmente* species group, Schouten and Duffels (2002) reported of among their studied materials were from the park. These include 25 male specimens (11 from Sungai Relau sector, 9 from Kuala Juram, 5 from Kuala Kenyam) which were designated as type specimens in describing a new species *Purana obducta* Schouten & Duffels. Also studied was single male specimen from Kuala Juram which was also designated as type specimen for new species *Purana sagittata* Schouten & Duffels. A revision of the genus *Chremistica* Stal from Peninsular Malaysia by Salmah and Zaidi (2002) reported 19 specimens (1 male from Kuala Juram, 19 male from Sungai Relau) representing *Chremistica pontianaka* (Distant); 2 female specimens representing *Chremistica umbrosa* (Distant) each from Lata Berkoh and Kuala Juram; and 4 specimens (1 male from Sungai Relau, 3 from Kuala Juram) for their then new species *Chremistica guamusangensis* Salmah & Zaidi.

Thus, up to now, a total of 14 cicada species in 6 genera of 2 families, Cicadidae (12 species in 4 genera) and Tibicinidae (2 species in 2 genera) has been previously reported for the park. Presented herewith is a further insight of the cicada fauna of the National Park. This is based on all cicada specimens collected from the park that have been repositited to date in the repositories of Muzium Negara and the Centre for Insect Sysematics of Universiti Kebangsaan Malaysia UKM) as well as the previously recorded spesimens mentioned above.

## MATERIALS AND METHODS

All cicada specimens in the repository of the Centre for Insect Systematics, UKM, and Muzium Negara, having locality labels, as locations in the National Park were sorted-out, identified and enumerated. They were also tabulated along with the previously

recorded species from the park to provide a clearer picture of the cicada fauna of the park.

Identification and species naming of the cicada specimens presented in this report were based on standard taxonomic references (e.g. Moulton, 1923; Overmeer & Duffels, 1967; Beuk, 1996, 1999; Duffels & Zaidi, 1998, 1999; Kos & Gogala, 2000; Schouten & Duffels, 2002; Salmah & Zaidi, 2002; and their species classification is in accordance to that of Duffels & van der Laan (1985).

The cicada specimens from the park in this report are now still kept in the repository of the Centre for Insect Systematics, UKM, Bangi.

## RESULTS AND DISCUSSION

### Cicada fauna

Table 1 shows that, to date, collections of cicadas from the park that have been made at 7 sites only. They were namely Mount Tahan (MT), Sungai Relau (SR), Kuala Juram (KJ), Lata Berkoh (LB), Kuala Tahan (KT), Kuala Kenyam and Sungai Cacing (SC). Based on all specimens thus far collected from the park (all the 7 sites combined), the cicada fauna of the park is now known to be represented by a total 35 species from in 14 genera, representing 2 families, Cicadidae (28 species in 10 genera) and Tibicinidae (7 species in 4 genera). These 35 species include the 9 previously recorded species mentioned above. Thus, the other 26 species obviously form new records for the park, including 5 species (*Platypleura* sp 1, *Platypleura* sp2, *Chremistica* sp 1, *Abroma* sp1 and *Abroma* sp2) that need to be describe as new to science.

The thusfar total (35) tecorded species indicates that Peninsular Malaysian cicada species are fairly well represented within the park (36%), especially those representing the genera *Terengganua*, *Cryptotympana* and *Abroma* (each 100%), *Chremistica* (67%), *Purana* (57%), *Platypleura Dundubia*, *Scieroptera* and *Muda* (each 50%). The other genera are thusfar found to be not quite well represented within the park:

*Orientopsaltria* (40%), *Heuchys* (25%), *Platylomia* (22%), *Pomponia* (20%) and *Mogannia* (14%).

### **Manifestation of species richness, composition, commonness and abundance**

The results thusfar obtained seem to indicate that cicada species richness and composition is best manifested at Sungai Relau, followed by Kuala Juram and Kuala Kenyam, and least on Mount Tahan (Table 1). Such is not suprising because this is very much in line with the frequency of samplings carried at each site, as indicated by the specimens collection dates for each site. Comparatively Sungai Relau is more easily accessed and hence more collections have been done there.

The results thusfar obtained also indicate that *Dundubia jacoona* (Distant) and *Platylomia spinosa* (Fabricius) are the most common species within the park spatially.

### **CONCLUDING REMARKS**

It is believed that if more extensive surveys could be conducted, covering more or other sectors of the park, over longer duration, a better representation of the cicada fauna of this park than thus far could be provided. This would include not only in terms of the species richness and composition, but also the status of species thus far noted as the common species (*D. jacoona* and *P. spinosa*). If such surveys could be conducted, it is envisaged that at least the current species checklist could be extended further.

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**Table 1.** Cicada specimens collected from the National Park of Peninsular Malaysia.

No	Taxa	Specimens (male:female) collected from						
		MT	SR	KJ	LB	KT	KK	SC
	<b>Cicadidae</b>							
1.	<i>Platypleura kaempferi</i> Distant			3:0	1:1			
2.	<i>Platypleura</i> sp1						1:0	
3.	<i>Platypleura</i> sp2		1:1	0:1	0:1		0:3	
4.	<i>Chremistica pontianaka</i> (Distant) *		19:0	1:0				
5.	<i>Chremistica umbrosa</i> (Distant) *			0:1	0:1			
6.	<i>Chremistica nesioties</i> Breddin							0:1
7.	<i>Chremistica guamusangensis</i> Salmah & Zaidi *		1:0	3:0				
8.	<i>Cryptotympana aquila</i> (Walker)		1:0					
9.	<i>Cryptotympana robinsoni</i> Moulton		1:0				1:0	
10.	<i>Purana obducta</i> Schouten & Duffels *		11:0	9:0			5:0	1:1
11.	<i>Purana nebulilinea</i> (Walker) *		2:4			1:0		
12.	<i>Purana sagittata</i> Schouten & Duffels *			1:0				
13.	<i>Purana tigrina</i> (Walker)						1:0	
14.	<i>Purana ubina</i> Moulton		0:1					
15.	<i>Maua quadrituberculata</i> (Signoret)			0:1				
16.	<i>Dundubia euterpe</i> Bloem & Duffels		1:1	0:1				37:30
17.	<i>Dundubia jacoona</i> (Distant)		1:0	0:2	1:0	1:0	4:2	
18.	<i>Dundubia rufivena</i> Walker		1:0	7:5	1:0		0:2	1:36
19.	<i>Dundubia vaginata</i> (Fabricius)		6:7	2:1		1:0		7:9
20.	<i>Orientopsaltria padda</i> (Distant)*		6:0	3:1	1:0	4:0	20:0	1:1
21.	<i>Orientopsaltria ruslani</i> Duffels & Zaidi*			1:0			1:0	
22.	<i>Orientopsaltria saudarapadda</i> Duffels & Zaidi*					1:0		
23.	<i>Orientopsaltria vanbreei</i> Duffels & Zaidi*				4:1		1:1	
24.	<i>Platylomia abdulla</i> (Distant) *		28:0	0:5		1:0	8:0	1:0
25.	<i>Platylomia flavida</i> (Guerin)		2:0					
26.	<i>Platylomia spinosa</i> (Fabricius)		3:1	2:1	0:1	2:0	2:0	0:3

27.	<i>Trengganua sibylla</i> (Walker)					1:0		
28.	<i>Pomponia adusta</i> (Walker)		2:0	5:1	0:1		4:0	
29.	<i>Pomponia imperatoria</i> (Westwood)		1:0			1:0		
30.	<i>Mogannia sesioides</i> Walker *	<b>1:0</b>						
	<b>Tibicinidae</b>							
31.	<i>Heuchys fusca</i> Distant *					1:0		
32.	<i>Scieroptera splendidula</i> (Fabricius)		1:1					
33.	<i>Abroma maculicollis</i> (Guerin)		0:1	2:5	0:1			
34.	<i>Abroma tahanensis</i> Moulton *	<b>3: 1</b>						
35.	<i>Lemuriana</i> sp1			0:3				
36.	<i>Lemuriana</i> sp2			1:1				
37.	<i>Muda obtusa</i> (Walker)		1:0				3:3	
	Total number of specimens (m:t)	4:1	90:17	40:29	8:7	14:0	48:11	48:81
	Total number of species	2	21	20	10	10	13	8
	Total number of genera	2	12	10	7	7	7	5

**Note:** **MT** = Mount Tahan; **SR** = Sungai Relau; **KJ** = Kuala Juram; **LB** = Lata Berkoh; **KT** = Kuala Tahan; **KK** = Kuala Kenyam; **SC** = Sungai Cacing; \* = denotes previously recorded species; numbers of specimen in bold are exclusively from the previous record.