
Report

Cicada (Homoptera: Cicadidae) fauna of Trus Madi Range, Sabah: A survey and overview**ZAIDI Mohd. Isa¹, AZMAN Sulaiman¹ and NORDIN Wahid²**¹*Centre for Insect Systematics, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Selangor, Malaysia*²*Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah, Locked Bag No. 2073, 88999, Kota Kinabalu, Sabah, Malaysia*

ABSTRACT. During this survey (in September 1996), a total of three cicada species of one genus of the family Cicadidae was recorded for the Trus Madi Range. The three species were *Orientopsaltria angustata* Duffels & Zaidi, *O. kinabaluana* Duffels & Zaidi and *O. montivaga* (Distant). Comparison of records indicated the following. All the three species form additional records for the mountain range, with one (*O. angustata*) as a new record for Sabah and another one (*O. kinabaluana*) as an endemic species to Sabah. With these, the previous records of cicadas of the mountain range (of one species, *Pomponia graecina* Distant [Cicadidae]), and Sabah as a whole (of 73 species) have thus increased to four species and 74 species, respectively. Thick cold fogs during the sampling hours at night in this survey (and probably so in the previous occasions), attributed to the fact that the sampling locations were all at high altitudes (1,400-1,600m above sea level), seem to be the main reason why very few cicadas came to the sampling lights, and hence the low species richness recorded.

INTRODUCTION

The Trus Madi Range follows a major NE-SE trend, and lies in the central part of Sabah, east of the Crocker Range. It is the second longest range after the Crocker Range, with Mt. Trus

Madi as the highest peak (2,642 m above sea level). Mt. Trus Madi is the second highest mountain in Borneo after Mount Kinabalu (the highest peak of the Crocker Range), lying east of the latter. The flora and fauna of the Trus Madi Range or Mt. Trus Madi are each much less known than those of the Crocker Range or Mt. Kinabalu. These include the aesthetic insects, namely cicadas.

There has been only one published record of cicadas from the Trus Madi Range, namely by Zaidi *et al.* (1999). They indicated that, among the specimens (of 43 species) deposited in the Sabah Park (SP) repository were those of one species, *Pomponia graecina* Distant (Cicadidae). They were collected from the sector near Kidukarut river of Mt. Trus Madi, over two one-day collections in 1992 (25 January) and 1993 (11 August).

However, in conjunction with the one-week scientific expedition to the Trus Madi Range in September 1996, hosted by Universiti Malaysia Sabah (UMS), a one-week (9-15 September 1996) survey of cicadas on Mt. Trus Madi was carried out. Presented herewith is an insight (since Zaidi *et al.*, 1999) of the cicada fauna of the Trus Madi Range. This is based on all cicada specimens collected from the mountain range during the survey and also prior to the survey (deposited in the SP repository [Zaidi *et al.*, 1999]).

Key words: Cicada, Trus Madi Range, Borneo

MATERIALS AND METHODS

During the survey, night time collections of cicada specimens were conducted. Cicadas that came to the lights at base-camp-site (at 1,500m a.s.l., Tambunan-access sector of Mt. Trus Madi) and the 150-watt mercury-vapour lights (powered by portable generators) directed towards the surrounding forests (at 1,400-1,600m a.s.l. sites, accessible from the base camp) were collected manually by hand and/or nets. The collected specimens were killed in killing jars containing cotton wool soaked with ethyl acetate. The killed specimens were kept in dry plastic containers. At UMS, the specimens were oven-dried, pinned, labeled, identified and classified.

Identification and species naming of the cicada specimens were based on the standard taxonomic references (e.g., Moulton, 1923; Duffels & Zaidi, 1999). Classification of the cicada species is in accordance to that of Duffels & van der Laan (1985). The cicada specimens collected during the survey are presently kept at the UMS BORNEENSIS repository.

RESULTS AND DISCUSSIONS

The cicada fauna for the Trus Madi Range, presented below in the form of a species checklist (Appendix 1) and a summary table

(Table 1) is principally based on specimens collected from the mountain range prior and during the survey, deposited in the above-mentioned repositories (SP and UMS).

As mentioned above, prior to the survey, specimens from the mountain range were collected on two occasions (Zaidi *et al.*, 1999). These were on 25 January 1992 at the 1,400m a.s.l. sector and on 11 August 1993 at the 1,500m a.s.l. sector of Mt. Trus Madi. They were all of one species, *P. graecina*.

As shown in Table 1, during the survey, a total of only three species of one genus of Cicadidae was recorded for the mountain range. These were *Orientopsaltria angustata* Duffels & Zaidi, *O. kinabaluana* Duffels & Zaidi and *O. montivaga* (Distant). Comparison of records (Moulton, 1923; Duffels & Zaidi, 1999; Zaidi *et al.*, 1999; Zaidi & Azman, 2003) indicated the following. All the three species form additional records for the mountain range, while one (*O. angustata*) is a new record for Sabah and another one (*O. kinabaluana*) is an endemic species to Sabah. The survey has thus increased the previous record of cicadas of the mountain range (of one species) and Sabah as a whole (of 73 species, see Zaidi & Azman 2003) to the present totals of four species and 74 species, respectively.

Table 1. Cicadas obtained from Trus Madi Range (through three occasions)

		No. of specimens (m:f) obtained from occasions		
		1	2	3
		1992	1993	1996
		25.i.	11.viii.	9-15.ix.
Cicadidae,				
1.	<i>Orientopsaltria angustata</i> Duffels & Zaidi *	-	-	0:1
2.	<i>Orientopsaltria kinabaluana</i> Duffels & Zaidi #	-	-	2:0
3.	<i>Orientopsaltria montivaga</i> (Distant)	-	-	6:0
4.	<i>Pomponia graecina</i> Distant	3:3	0:1	-

Notes

Sampling occasions, no: 1 & 2 = prior to this survey (Zaidi *et al.*, 1999); 3 = this survey.

* = new record for Sabah; # = endemic species to Sabah.

Thick cold fogs during the sampling hours at nights in this survey (and probably so in the previous occasions), attributed to the fact that the sampling locations which were all at high altitudes (1,400-1,600m above sea level), seem to be the main reason why very few cicadas came to the sampling lights, and hence the low species richness recorded.

In view of the above, it can be deduced that more regular surveys, each conducted over longer duration covering non- or less foggy periods and covering more sectors would provide a better representation of the cicada fauna of this mountain range than thus far. If such surveys could be conducted, it is envisaged that at least the current species checklist could be further extended and the status of certain species being relatively common spatially and temporally could also be better pictured.

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- Appendix 1. List of cicadas from the Trus Madi Range**
- Family Cicadidae**
- 1. *Orientalis angustata* Duffels & Zaidi**
Orientalis angustata Duffels & Zaidi, 1999. *Tijdschrift voor Entomologie* 142(2): 231 [Borneo (holotype, male), Malaysia, Sarawak (paratypes); Indonesia, Kalimantan (paratypes)].
- Materials examined: SABAH. Tambunan, B. Trusmadi, 1400-1500m, light trap, 9-15.ix.1996, 1 female (in UMS BORNEENSIS repository).
- Remarks: This is a new record for Sabah (see Zaidi & Azman, 2003).
- 2. *Orientalis kinabaluana* Duffels & Zaidi**
Orientalis kinabaluana Duffels & Zaidi, 1999. *Tijdschrift voor Entomologie* 142(2): 261 [Malaysia, Sabah, Keningau (type, male), Malaysia, Sabah]. - Zaidi & Azman 2003, *Serangga*, 8(1-2):105 (Sabah).
- Materials examined: SABAH. Tambunan, B. Trusmadi, 1400-1600m, light trap, 9-15.ix. 1996, 2 males (in UMS BORNEENSIS repository).
- Remarks: This is an endemic species to Sabah (see Duffels & Zaidi, 1999).
- 3. *Orientalis montivaga* (Distant)**
Cosmopsaltria montivaga Distant, 1889, *Ann. Mag. Nat. Hist.*, 6(3):421 [North Borneo, Mt. Kinabalu (type, male)]. - Moulton, 1923, *J. fed. Mal. St. Mus.*, 11:95 [Sumatra, Medan; Borneo, Mt. Kinabalu, Sarawak; Malay Peninsula].
- Orientalis montivaga*: Kato, 1944, *Bull. Cicadidae Mus.*, 14:10. - Duffels, 1968, *Beaufortia*, 15(190):81 [North Borneo, Mt. Kinabalu (males); Sumatra (males)]. - Duffels & Zaidi, 1999, *Tijdschrift voor Entomologie* 142(2):219 [Borneo, (Sabah, Sarawak, Brunei, Kalimantan)]. - Zaidi & Azman 2003, *Serangga*, 8(1-2):105 (Sabah).
- Materials examined: SABAH. Tambunan, Trus Madi Range, 1400-1600m, light trap, 9-15.ix. 1996, 6 males (in UMS BORNEENSIS repository).
- 4. *Pomponia graecina* Distant**
Pomponia graecina Distant, 1889, *Ann. Mag. Nat. Hist.* 6(3):421 [North Borneo, Mt. Kinabalu (type, male)]. - Moulton, 1923, *J.Fed. Mal. St. Mus.*, 11:112 (Borneo). - Zaidi & Azman 2003, *Serangga*, 8(1-2):105 (Sabah).
- Materials examined: SABAH. Mt. Trus Madi near Kidukaruk river, 1400m, 25.i.1992, H. Sadamori (HO/92/00007,8,9,10,11,12) 3 males, 3 females, same data, 1500m, 11.viii. 1993, Toru Kikuta, HO/93/00051, 1 female (in SP repository, as in Zaidi *et al.*, 1999).