

A preliminary checklist of beetles from Ginseng Camp, Maliau Basin, Sabah, Malaysia, as assessed through light-trapping

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ABSTRACT. A total of 61 species of beetles representing 17 families and 47 genera were collected from Ginseng Camp, Maliau Basin, Sabah using light trapping method. The Scarabaeidae, Cerambycidae, Lucanidae and Elateridae form 70% of the total collection. Some of the species collected are new records for Maliau Basin.

Keywords: Beetles, light-trapping, Ginseng Camp, Maliau Basin.

INTRODUCTION

There are very few records of the beetle fauna from Maliau Basin even though much has been written about Maliau Basin as an enthralling and mysterious treasure house of nature (Haselbroek *et al.*, 2004; Maryati Mohamed *et al.*, 1998; Marsh, 1989; Phillipps, 2002). On record, 32 species of beetles (three of which remain unidentified) were documented during the 1998 Maliau expedition (Lantoh, 1989), and 29 species of dung beetles were recorded during the 1996 Maliau expedition (Davis, 1998). The 1998 collection was made in the lower montane forest on the southern plateau of Maliau Basin at an elevation of 1000 m using Flight Intercept Traps (FITs).

Many beetle records for various parts of Borneo Island have been documented (Tung 1983; Stork 1986; Mohamedsaid 2004) - Kalimantan (Reid, 1997), East Kalimantan

(Makihara, 1999), Sarawak (Fatimah Abang, 2000 & 2005, *personal comm.*; Lim, 1996, Bright, 2000) and Sabah (Mohamedsaid, 1997; Chey, 1996). A detailed entomological collection in Sabah and Sarawak reports about 625,511 processed specimens, which include the Order Coleoptera (Fatimah Abang, 2000). There was also a detailed study on the distribution of beetles in the tropical rain forest at Belalong in Batu Apoi Forest Reserve, Brunei, carried out by the Royal Geographical Society (Earl of Cranbrook & Edwards, 1994).

A checklist of 124 species of galecurine beetles from Kalimantan has been recorded from the Museum of Zoology, Bogor, Indonesia (Reid, 1997). A study of insect profile in the dipterocarp forest of East Kalimantan yielded 555 species of longicorn beetles (Makihara, 1999).

Forest pest insects in Sabah have been studied, listing a number of beetle fauna which are of economic importance to the timber industry (Chey, 1996). A record of 325 species of beetles was collected using Flight Intercept Traps at less degraded and more degraded logged forests in Tibow (Chey *et al.*, 2002). Leaf-rolling weevil beetles and coprophagous dung beetles have been recorded at Tabin Wildlife Reserve (Sawada and Maryati Mohamed *et al.*, 1999). A general collection of beetles from the Crocker Range

Park (Chung *et al.* 2004), and similarly a checklist of 44 species of Passalidae at the same park has been established (Kon *et al.* 2005), of which 26 species are endemic to Borneo. A checklist of Chrysomalids from Banggi Island, Kinabalu Park and Tibow has been documented (Mohamedsaid, 1997, 1999 & 2000). Kinabalu Park has been shown to support a high diversity of galerucine beetles with a record of 163 species.

MATERIALS AND METHODS

Night collections were done around the Ginseng Camp, 620 m a.s.l., 04° 44.810' N, 116° 54.978' E, starting at 6.30 pm till 10.30 pm, from 27 February to 1 March 2005. A 250-watt mercury vapour light, placed next to a white sheet of cloth (3 m²) hung between two poles was used to attract beetles. Beetles attracted to the strong light were collected using killing bottles containing ethylacetate or chloroform, later pinned and oven-dried in a laboratory. They have been labeled, identified, classified and kept in the BORNEENSIS repository at the Institute for Tropical Biology and Conservation (ITBC), Universiti Malaysia Sabah. Beetles drawn to the light at Ginseng Camp were collected and similarly treated.

The identification of the beetles is based on Tung (1983), Prisuth Ek-Amnuay (2002), Bro. Amnuay Pinratana & Meas (2003), Didier & Seguy (1952), Tironi (1998) and Mizunuma & Nagai (1994). At the same time, the authors made use of the identified specimens at ITBC and Forestry Research Centre (FRC), Sandakan, for identification and comparison purposes. No attempts were made to do detailed studies on the genitalia of the beetles collected.

RESULTS AND DISCUSSION

Beetle collection was done at two places close to Ginseng Camp. Both collections can be considered as understorey, and in the upper

portion of the dipterocarp lowland tropical rain forest and close to sub-montane tropical rain forest of Maliau Basin. The weather was rather hot and dry. The nights were not dark enough to attract certain beetles to the light.

The following beetles were collected and identified. Unidentified species at the genus level are kept for further studies.

Family Cicindelidae:

Cosmodela aurulenta Fabricius, 1801

Family Carabidae:

Mormolyce ? castelnaudi

Mormolyce phyllodes Hagenbach, 1825

Family Lucanidae:

Calcodes striatus Doyrotte, 1864

Cyclommantus canaliculatus Ritsema, 1891

Cyclommantus lucifer Boileau, 1905

Cyclommantus tarandus Thunberg, 1806

Dorcus sp. 1

Dorcus sp. 2

Dorcus sp. 3

Odontolabis castelnaudi Parry, 1862

Odontolabis vollenhoveni Parry, 1864

Family Passalidae:

Aceraius wallacei (Kuwert 1898)

Leptaulax bicolor (Fabricius 1801)

Family Scarabaeidae:

Apogonia destructor Bos

Chalcosoma moellenkampi Kolbe

Copris agnus Sharp?

Copris doriae Harold ?

Holotrichia geilenkenseri

Lepidiota stigma Linnaneus ?

Oryctes trituberculatus Lansb.

?*Trichogomphus* sp.

Catharsius molossus Linnaeus, 1758

Anomala sp. 1

Anomala sp. 2

Anomala sp. 3

Anomala sp. 4

Maladera sp.

Family Cerambycidae:

- Cyriopalus wallacei* Pascoe, 1866
Dialeges pauperoides Holzschuh, 1984
Hoplocerambyx spinicornis Newman, 1842
Palimna annulata Olivier, 1792
Rhaphipodus hopei Waterhouse, 1836
Trirachys orientalis Hope, 1841
Zegriades magister Pascoe, 1857
Batocera parryi Hope, 1845
Batocera rubus Linnaeus, 1758
Euryphagus lundi Fabricius, 1792
Xoanodera striata Gressit et Rondon, 1970
Aeolesthes sp.
Diorthus sp.

Family Trictenotomidae:

- Trictenotoma dividi* H. Deyrolle

Family Curculionidae

- Mecocerus brevipennis* Jordan, 1894
Rhynchophorus ferrugineus Olivier, 1790

Family Elateridae:

- Calaus lacteus*
Oxyropterus audoniwi Cand.
Alaus sp. 1
Alaus sp. 2
Alaus sp. 3
Lacon sp.
Lanelater sp.

Family Endomychidae:

- Endomychus* sp.

Family Erotylidae:

- Encaustes* sp.

Family Chrysomelidae

- Aulacophora antennata* Baly 1886

Family Harpalidae:

- Pterostichus* sp.

Family Tenebrionidae

- Setenis* cf. *striatipennis* Lewis
Simalura sp.
Nemostera sp. Marseni ?
Tarpela sp.

Family Eucnemidae:

- Fornax* sp. Fleutiaux ?

Family Lampyridae:

- Luciola* sp.

Family Mordellidae:

- Mordellistena* sp.

CONCLUSION

Total collection of beetle fauna at the Ginseng Camp, Maliau Basin was rather poor. Perhaps it was due to the hot, dry season and to the nights not being dark enough for productive collection. One would expect more insects and beetles in an area that is known to be undisturbed and away from pollution.

Only 17 families of beetles were collected, many of which are represented by single specimens. Only four families, the Cerambycidae (11 species and two unidentified), Elateridae (two species and five unidentified), Lucanidae (six species and three unidentified) and the Scarabaeidae (nine species and five unidentified) are represented by five or more species and many specimens are identified only at the genus level. Nine families, namely Cicindelidae, Chrysomylidae, Endomychidae, Eucnemidae, Erotylidae, Harpilidae, Lampyridae, Mordellidae and Trictenotomidae are represented by single specimens while Carabidae, Curculionidae and Passalidae are represented by two species. The Tenebrionidae is represented by four species, three of which are identified at the genus level.

A total of 61 species of beetles (37 identified to species level and 24 to the genus level) were collected and they represent new records for Ginseng Camp, Maliau Basin. Some of the species are new records for Maliau Basin as a whole, adding to the checklist produced by Lantoh (1989) and Davis (1998). The unidentified species collected during the expedition will be reported at a later date.

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