

SHORT COMMUNICATION

NOTES ON THE BIOLOGY OF *Chrysolina* *kinabaluensis* Bechyne (COLEOPTERA: CHRYSOMELIDAE)

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Chrysolina kinabaluensis Bechyne, 1952 is an endemic species of Borneo, originally described from Kinabalu. This species was further reported from Mt. Kinabalu, Gunung Emas (Crocker Range) and Sandakan (Bienkowski, 2001), and seems not rare in montane areas. But so far nothing is known about its biology. We have observed this species at Gunung Alab, 1700-1900 m asl. in Crocker Range Park, Sabah, Malaysia.

Morphology:

Adults (Fig. 1) are about 8.0 – 10.0 mm in body length, and metallic greenish with characteristic reddish elytra. This coloration, together with an oval and strongly convex body shape, distinguishes this species well. Male aedeagus is also distinctive as shown in Fig. 2.

Biology:

We observed a lot of adults feeding on leaves of *Blumea balsamifera* DC (local name: sambon, Asteraceae) along a sunny road-side at Gunung Alab (asl 1700-1900m), Tambunan.

Computating pairs were also commonly found on leaves. They laid eggs upright on the leaf-surface in a very loose mass of 3 to 12 eggs. Eggs are long cylindrical, about 2.5mm in length and deep red in colouration (Fig. 3). Larvae were found also feeding solitarily on the undersurface of leaves. They are strongly convex dorsally (Fig. 4) as usually in this genus, and blackish account of dense chitinous platelets. The head is contrastingly light brownish. The detailed morphology of larvae will be given in another paper. Compared with the number of adults observed or collected, larvae were markedly less than adults. This indicates nocturnal habit of larvae. Table 1 shows the partial phenology of this species at Gunung Alab.

Table 1. Occurrence of *Chrysolina kinabaluensis* at Gunung Alab, Sabah, Malaysia in 2008

Date	29/IV	2/VI	17/VI	11/VII	28/VII	18/VIII	15/IX
Adults	8	42	18	17	31	19	31
Larvae	-	7	2	-	-	2	7
Eggs	-	+*	-	-	+	+	-

“+” means presence in field, number of eggs mass not recorded

The number of adults collected showed some fluctuation. On 29th April and 28th June, there were many young individuals, indicating recent emergence. On 17th June and afterwards they were almost confined to the top of Gunung Alab. On 15th September adults were again found at a place below 1800m. From these data alone, it is not possible to know whether the generation of late July is the direct offspring of the early June generation. But larvae collected on June became full grown in late June.

Parasites:

Five among seven grown larvae collected on 15th October were parasitized by unidentified species of Tachinidae. Flies emerged in 10 to 15 days in laboratory.

Host plants:

Observation at Gunung Alab and Kundasang, Ranau showed that this species feeds on *Blumea balsamifera* exclusively. Family Asteraceae is one of the favourite host families in the genus *Chrysolina* Motschulsky (Hawkeswood & Jolivet, 1995). *Chrysolina stictica* Stal also feeds on an undetermined plant of Asteraceae at Mt. Argopuro, E. Java.

This plant (Fig. 5) is widely distributed in temperate to tropical Asia, viz. China, Sikkim, Nepal, Pakistan, Myanmar, Thailand and Malaysia (GRIN, 21 August 2007), but its local distribution in Borneo is still unclear. Besides *C. kinabaluensis*, undetermined *Rhyparida* sp., *Sphaeroderma* sp. and *Cassida kinabaluensis* (Borowiec) are observed feeding on this plant at Gunung Alab.

Distribution: Though this *Chrysolina* species seems widely distributed in montane areas of Borneo, there are not enough records. In the collection of ITBC, University of Sabah, Malaysia, there are the following specimens.

Sabah: 1 ex., Kinabalu Park, 30.ix.1995, Rohaizi leg.; 4 exs., Kinabalu Park, HQ, 10.iii.2000, G. Ito leg.; 3 exs., Kinabalu Park Mempening Trail, 10.vii.2007, H. Takizawa leg.; 1 ex., Mesilau, 2000m, Kinabalu Park, Ranau, 11.ix.2007, H. Takizawa leg.; 16 exs. Kundasang, Ranau, 30.vi & 14.vii.2007, H. Takizawa leg. 1 ex. Gunung Alab, 1616m, Tambunan, 30.i.1996, N. Wahid leg. 18 exs., Trus Madi, 1400-1600m, Tambunan, 9-15.ix.1996, Light trap; 11 exs., Mt. Trus Madi, base Camp, 1500m, 23.x-7.xi.2001, A. Allamat. leg.; 31 exs., Trus Madi, 4500f, 24-30.x.2001, Mohadimenakar leg.

This species was originally assigned to the subgenus *Pierryyvetia* Bechyne. Recently Bienkowski excluded this form from the subgenus and treated as having uncertain position. We hope knowledge on its biology, host plants and larval morphology will give some clues to certify its subgeneric position.

REFERENCES

- Bienkowski, A.O. 2001. A study on the genus *Chrysolina* Motschulsky, 1860, with checklist of all the described subgenera, species, subspecies, and synonyms (Coleoptera: Chrysomelidae: Chrysomelinae). Genus, Wroclaw, **12** (2): 105-235.
- GRIN Taxonomy for Plants, 2007. Germplasm Resources Information Network. (<http://www.ars-grin.gov/cgi-bin/npgs/html/taxon.pl>). (August 2007)
- Jolivet, P. & T.J. Hawkeswood. 1995. Host-plants of Chrysomelidae of the world. 281 pp. Backhyus Pub., Leiden,



Figure 1. Adult on the leaves of *Blumea balsamifera*

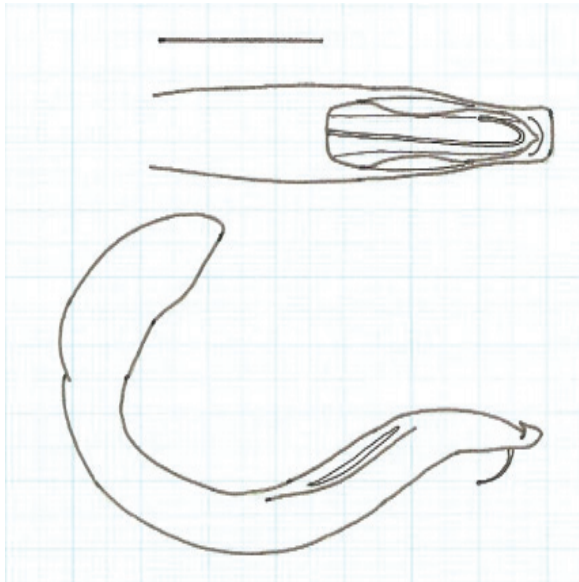


Figure 2. Male aedeagus (Gunung. Alab). Left: dorsal view of apical portion; right: lateral view. Scale 1.2 mm.



Figure 3. Egg mass on the leaves of *Blumea balsamifera*



Figure 4. Last instar larva on the leaves of *Blumea balsamifera*



Figure 5. *Blumera balsamifera*