Some Bionomical Notes on Newly Discovered Blister Beetle, *Stenoria oohatai* Morimoto *et* Maeta from Japan (Coleoptera, Meloidae, Nimognathinae)

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日本から新たに発見されたクロゲンセイの若干の生態的知見

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Abstract

Stenoria oohatai is a cleptoparasite of *Colletes esakii*. It was found by excavating the host nests in western Honshu, Japan. Some bionomical notes of *S. oohatai* are also described.

Key words: New distributional record; cleptoparasite; host; hypermetamorphosis; blister beetle; *Stenoria*

Sixteen species of blister beetles (Meloidae), belonging to six genera, are known to occur from Japan (Hirashima, ed., 1989). Five genera of the blister beetles were known to infest *Colletes* bees, *i.e.*, *Lytta, Meloe, Stenoria, Zonitis* and *Tricrania*. These are recorded from either or both the New and Old World (reviewed in MacSwain (1956) and Mader (1999)). The genus *Stenoria* is widely distributed in Europe, Asia and Africa (MacSwain, 1956), but no record from Japan till up to now. However, Morimoto & Maeta (2009) described *Stenroia oohatai* Morimoto *et* Maeta from Shimane Pref., Japan. The materials used for their descriptions of a new species were obtained in 2003 by one of authors, J. Oohata by his excavation of nests of *Colletes esakii* Hirashima at Atoichi-cho, Gotsu City, Shimane Prefecture, western Honshu, Japan. Two nesting sites of *C. esakii* were found on the clayish banks alongside of the forest roads. The both banks faced east/south ward and the surfaces were poorly vegetated. One had 50－60 degrees angle and 70－80 cm height (site A, Fig. 1) and the other had 60－70 degrees angle and 80－90 cm height (site B).

To study the biology of *S. oohatai*, six overwintered pseudopupae of *S. oohatai* (Fig. 2) and some cocoons of *C. esakii* were obtained by excavation of nests at the site A on March 3, 2002. A single larva of *S. oohatai* seems to infest one or more adjacent host cells, as like as *Zonitis japoncia* (Maeta & Sasaki, 2005). Pseudopupae in host cells dropped down on the ground, when nests were excavated, might be because of thin and weak of the host cells. These individuals were kept in a container box at temperature-uncontrolled room. Adults of *S. oohatai* emerged early July, which was one and half months later than the first emergence of host bees. One of the two females left in the container laid ca. 100 eggs in a mass on the wall of the container. Eggs hatched in 13 to 15 days after oviposition (Fig. 3). A tray filled with soil was placed in the container, but oviposition did not occur in the soil. Triungulins stayed at the original position for a short period of time where eggs were laid. Later they moved a little on the container's wall and spun thin silken thread from the anal tubercles (sucking disk or pseudopod) for holding their bodies, but they were still in a cluster. We placed one living

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host adult near the triungulins. They quickly moved to the bee body and clung with the hairs of it. These triungulins never left the bee body even after the bee died by starvation (Fig. 4). They survived for about one week on the bee body. One adult of *S. oohatai*, which seemed to be emerged from host nests the latest, was observed at the site A on July 8 in 2002. Most adults of *S. oohatai* seemed to leave the host nesting sites by the middle of July.

In European *S. analis* (Schanum) eggs are laid on dry ears of a grass of *Dactylis glomerata*, growing in and around the nesting site of host bee, *C. hederae* Schmidt *et* Westrich. Triungulins seem to be transferred to the host nests by the following way. A cluster of triungluins hung from the ear sexually deceive patrolling males. Males attmpt to copulate with it, and some of triungluins clung male bodies remove onto female bodies when they are mating (Vereecken & Mahé, 2007).

We excavated again nests of *C. esakii* on July 18, 2009 at the site B. Only one pseudopupa, which infested a single host cell, together with 154 host cocoons was obtained. These cocoons were kept separately in 3 petri dishes in a temperature-uncontrolled room. Ninety-nine host males emerged from these cocoons between July 18 and 27, and 25 females between July 20 and 27. Other 8 females and 19 males failed to eclose and died at pupal stage. The parasitic rate by *S. oohatai* was extremely low as it was in 2008 (0.6%, 1/155). By the present nest excavation three pupae of *Epeolus melectiformis* Yasumatsu were also found together with *S. oohatai*, which were included with the above mentioned 154 host cocoons (1.9%, 3/155). One female and two males of *E. melectiformis* emerged between July 21 and 27, 2009. One more cleptoparasite of *C. esakii*, *Zonitis japonica* was already recorded from the different place in Shimane Prefecture, Japan (Maeta & Sasaki, 2005).

Figs. 1–4: Nesting site of *Colletes esakii* (1) and immatures of *Stenoria oohatai* (2–4). 1: Nesting site of the A. 2: Three pseudopupae, each is enclosed with a thin transparent exuviae of the fifth instar larva. 3: Eggs, just before hatching. 4: Triungulins, clinging on the body hairs of the host adult bee.

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摘　　要

クロゲンセイ *Stenoria oohatai* Morimoto *et* Maeta はエサキムカシハナバチ *Colletes esakii* Hirashima の労働寄生性天敵で，島根県江津市で寄主巣の発掘によって発見した．本種に関する若干の生態的知見について記述した．