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Notes on Chlamydopsinine Histerid Beetles of Japan, with Description of a New Species

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Abstract Two Japanese species of the histerid genus *Eucurtiopsis* are dealt with. A brief biological note is made for a recently described species, *Eucurtiopsis ohtanii* (K. SAWADA). A new species belonging to the same genus is described from Okinawa-jima Is., under the name of *Eucurtiopsis hiranoi* sp. nov.

Histerid genera of the subfamily Chlamydopsinae have been recorded mainly from the Australian and the Neotropical Regions, and according to MAZUR (1984), only two monotypical genera are known from the Oriental Region. Most species of the subfamily are either myrmecophilous or termitophilous. In 1926, SILVESTRI established a strange new genus, *Eucurtiopsis*, for *E. mirabilis* from central Taiwan. It is one of the two Oriental genera of the subfamily. Recently, I found a species of this genus in a colony of *Pheidole fervida* Fred. SMITH (Hymenoptera, Formicidae) during the "Faunal Investigation of Zama-shi" made by the Board of Education of Zama City (NISHIKAWA & MARUYAMA, 1993). Though the same species was described by K. SAWADA (1994) as a new species of a new genus, *Boreochlamydus ohtanii*, ÔHARA (1994) redescribed it as a species of the genus *Eucurtiopsis*.

On the other hand, I received another chlamydopsinine histerid from Mr. Y. HIRANO. After a close examination, I have come to the conclusion that it should also be included in the same genus as *E. mirabilis* and *ohtanii*. Several differences of specific importance were, however, recognized, and therefore it will be described in the present paper as a new species. The abbreviations used herein are as follows: HW – greatest width of head including eyes; PW – greatest width of pronotum; PL – median length of pronotum; PA – width of pronotal apex; EW – greatest width of elytra; EL – length of elytra; AW – greatest width of abdomen; AL – median length of abdomen.

Before going further, I wish to express my deep gratitude to Mr. Masatoshi TAKAKUWA of the Kanagawa Prefectural Museum of Natural History, Odawara, for his critical reading of the original manuscript of this paper. Special thanks are also due to Mr. Yukihiko HIRANO not only for drawing my attention to the myrmecophilous beetles but also for giving me the specimens of the interesting species, and to Mr. Masao KUBOTA, an authority of the family Formicidae, not only for giving information from his studies of the host ant but also for loan of literature and help

in many other ways. Drs. Takehiko NAKANE, Chiba City, Masahiro ÔHARA of Otaru Museum, Otaru, and Kôhei SAWADA of Shukugawa Gakuin Junior College, Nishinomiya, who kindly gave me important information. My field works in Zama-shi were supported by the Association for Faunal Investigation of Zama-shi Operating Grant.

Eucurtiopsis ohtanii (K. SAWADA, 1994)

(Fig. 3)

Boreochlamydus ohtanii K. SAWADA, 1994, Contr. biol. Lab. Kyoto Univ., **28**, pp. 359–360, fig. 1; type locality: Mt. Sobo, Ooita Pref., central Kyushu, Japan (holotype); Mt. Gozaisho, Mie Pref., central Honshu, Japan.

Eucuritopsis [sic] *ohtanii*: ÔHARA, 1994, Ins. matsum., (N. S.), **51**, pp. 78–80, fig. 49.

Eucurtiopsis sp.: NISHIKAWA & MARUYAMA, 1993, Creatures Zama, pp. 230, 246, pl. 13, fig. 2.

Specimen examined. 1♀, Yatoyama, ca. 70 m in alt., Zama-shi, Kanagawa Pref., central Honshu, 20–V–1990, M. NISHIKAWA leg. Deposited in my collection.

Measurements of body parts. Length 1.98 mm (from apical margin of head to apices of elytra), width 1.30 mm, PW/HW 2.13, PW/PL 1.36, PW/PA 1.17, EW/PW 1.53, EL/PL 2.04, EL/EW 0.98, AW/AL 2.09.

Host ant. Pheidole fervida Fred. SMITH, 1874 (determination by M. KUBOTA on the basis of a soldier and a few workers).

Biological notes. The collecting site of the specimen examined, Yatoyama in Zama-shi, is situated in the central part of the Zama Heights lying along the left side of the Sagami-gawa River in southern Kwantô, which is mainly surrounded by a secondary forest. The present specimen was found in a colony of the ant, *Pheidole fervida*, under the bark of a rotten Japanese red pine lying down in a small ridge. It crawled very slowly among numerous workers and soldiers, and looked like a cranial structure of a soldier within the colony. The similarity between them seems to me to be an example of the Batesian mimicry, since the beetle needs some defensive mechanism against ants attacking in the colony. Though it shows several directly defensive modifications, that is, the eyes are covered with antennal scapes, a narrow groove is situated at the outer edge of each scape which is put into pedicel, the antennal cavities are present near the anterior prothoracic angles for insertion of the antennal clubs, and the femora are folded up to the body, I consider it as a symphile for the reason of the similarity in coloration among the previously known symphiles (cf. BICKHARDT, 1916–'17), reduction of mouth parts, presence of elytral gland structure, and a peculiar setal character (cf. RICHARDS & DAVIES, 1977; PAULIAN, 1988). Additional careful observation is required for the beetle from the behavioral point of view.

The host ant, *P. fervida*, ranges from Hokkaido to Kyushu, including some small islands, and in the Korean Peninsula (OGATA, 1989). Several species of the ant genus *Pheidole* have been known as the hosts of the histerid genera *Ceratohister* REICHENSPERGER from India and *Pheidoliphila* LEA from Australia and Tasmania

(REICHENSPERGER, 1924). According to SILVESTRI (1926), *E. mirabilis* was found from a nest of an ant, though its scientific name was not recorded. Incidentally, MJÖBERG (1912) noted a valuable observation that *Eucurtia paradoxa* MJÖBERG (=*E. comata* (BLACKBURN)) is a termitophile.

Eucurtiopsis hiranoi M. NISHIKAWA, sp. nov.

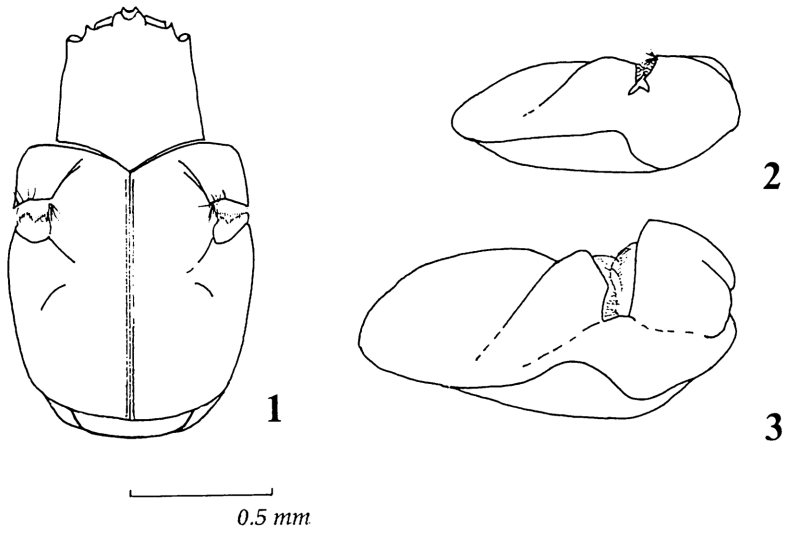
[Japanese name: Okinawa-kobu-enmamushi]

(Figs. 1–2)

Length 1.58 mm (from apical margin of head to apices of elytra), width 0.95 mm. Sex undetermined. Colour as in *E. ohtanii*.

Head longitudinally bicarinate in the middle; lateral margins parallel and carinate; surface foveate as in *E. ohtanii*. Labrum semicircular, foveate. Mandibles robust, with the tips pointed. Eyes moderately prominent. Antennae with scape subtriangular in outline, deeply excavated at outer side, foveate, sparsely clothed with bifurcate yellowish setae; funicle setiferous; club longitudinally elliptical, 2.2 × as wide as long, with silky setae as long as those of funicle, though several long setae are intermixed with ordinary ones in apical portion.

Pronotum subpentagonal, convex, widest at base, PW/HW 2.00, PW/PL 1.13, PW/PA 1.18; sides feebly angulate-emarginate; front angles feebly projected outwards; antennal cavities strongly emarginate, with inner edges pointed; basal angles angulate; basal margin also angulate at the middle; disc strongly depressed at antero-lateral



Figs. 1–3. *Eucurtiopsis* spp.——1–2, *Eucurtiopsis hiranoi* M. NISHIKAWA, sp. nov., from Chihana-jôshi, Okinawa-jima Is. of the Ryukyus; 3, *E. ohtanii* (K. SAWADA), from Zama-shi, Kanagawa Pref. in central Honshu, ♀; 1, outline of body; 2–3, right elytron and epipleuron in lateral view, showing a narrow channel between elytral elevations. (Scale: 0.5 mm.)

portions, with two projections at medio-apical portion somewhat ridged; surface densely foveate as on pronotum of *E. ohtanii*, sparsely intermixed with brevi-setiferous punctures among the foveae, with microsculpture longitudinally rugose. Scutellum invisible from above.

Elytra almost as long as wide, about 1.8 × as long and 1.5 × as wide as pronotum, widest at the level of middle elevations, EW/PW 1.46, EL/PL 1.78, EL/EW 1.08; denticulate humeral angles invisible from above; sides arcuate in apical 1/3; apices gently and conjointly arcuate; disc strongly depressed in basal half, gradually and strongly convex in the middle portion, with a pair of fine marginal striae along sutures, and with two pairs of elevations in humeral and middle portions as follows: the humeral pair oblong, simple, subperpendicularly elevated upwards from lateral 1/2 in elytral base, angulate-emarginate at apical edges, each with several erect, yellowish setae and a golden trichome at apex, the middle one gradually and subtriangularly elevated upwards from apical 1/3 of elytra towards the apex of the humeral one, emarginate at apical edges, each with apex bearing a trichome as in the humeral one, these two elevations opposed at elytral basal 1/3, forming a deep gap as a narrow channel, which is angulately grooved at the outer end; surface sparsely clothed with brevi-setiferous punctures throughout, and with several large ones in basal portion, though the middle area is polished. Epipleura flat, punctate as microscopical meshes, with marginal stria strongly sinuate.

Propygidium transverse (ca. 1 : 2), clothed with brevi-setiferous punctures as on elytra. Pygidium about 1.4 × as long as wide, with punctures somewhat denser than those on propygidium. Prosternum convex, marginate, except for front margin which is feebly bisinuate; surface foveate as on pronotum. Prosternal process elevated, slightly rounded in apical margin. Mesosternum small, transverse, foveate as on prosternum. Metasternum marginate, with sparse punctures as on propygidium, with median longitudinal suture distinct. Abdomen convex, slightly wider than long (AW/AL 1.19), with punctures as those on propygidium; first sternite the largest, with large punctures along each side; 2–5 sternites punctate along each apical margin.

Legs as in *E. ohtanii*, though bifurcate hairs are absent.

Type specimen. Holotype: 1 ex. (sex undetermined), Chihana-jôshi, Okinawa-shi, Okinawa-jima Is., Ryukyus, SW Japan, 27–III–1980, S. TANAKA leg. The holotype will be deposited in the collection of the Kanagawa Prefectural Museum of Natural History, Odawara.

Notes. The present new species is similar in general appearance to the two previously known species of the genus, but can be clearly discriminated from the latter by the following characteristics: body sparsely brevi-setiferous; head longitudinally bicarinate in middle; pronotal ridges in medio-apical portion poorly developed; elytral elevations rather simple, with a trichome and several erect setae at the apex of the humeral one.

The holotype specimen of this new species was mingled with other beetles sent from Mr. Shingo TANAKA of Fukuoka City to Mr. Yukihiko HIRANO for identification.

It was probably sorted out from leaf litter or soil during a research of the springtail fauna. As the new species has been known from only the holotype, I was unable to examine configuration of the genital organ. It is to be hoped that further examination is made on additional specimens. Judging from the morphological specialization of the new species, it seems to be a myrmecophile or a termitophile, though its host is unknown at present.

要　約

西川正明：日本産コブエンマムシ亜科の1新種記載を含む知見．――ごく最近，新属新種として記載された*Boreochlamydus ohtanii* K. SAWADAを，ÔHARA (1994)にしたがって，アリノスコブエンマムシ*Eucurtiopsis ohtanii* (K. SAWADA)と改め，新たな標本にもとづいて記録し，生態的知見を報告した．なお，そのひとつとして，本種が宿主アリのコロニー内で，兵アリの頭部に擬態している可能性を記した．さらに本属の3番目の種として，オキナワコブエンマムシ*Eucurtiopsis hiranoi* M. NISHIKAWA, sp. nov.を，沖縄島の沖縄市知花城跡産の標本にもとづいて記載した．この新種は，頭部中央に2隆条と前胸背板先端中央に2突起をもち，体表の大部分が短毛でまばらにおおわれること，また単純な上翅肩部の隆起と，その先端に分泌毛束とともに直立した剛毛を備えることとによって，既知の2種から区別できる．

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