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# Description of a New Species of the Genus *Gonioctena* Chevrolat from Japan (Coleoptera: Chrysomelidae)

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**Abstract.** *Gonioctena* (*Brachyphytodecta*) *kidoi* sp. n., feeding on *Cladrastis sikokiana* (Makino) Makino (Leguminosae), is described from Japan together with description of larvae.

**Key words**: *Gonioctena*, Chrysomelidae, Japan, new species, larva.

## Introduction

Genus *Gonioctena* Chevrolat in Japan was recently revised by Kimoto (1994) who classified them into 13 species belonging to 3 subgenera. Recently Mr. K. Kido in Fukuoka and Dr. L. LeSage in the Biosystematics Research Institute in Ottawa kindly sent us interesting specimens collected in Kyushu, Japan, which should be described as new species. We are very grateful to Mr. K. Kido and Dr. L. LeSage for their kind cooperation.

## Description

***Gonioctena* (*Brachyphytodecta*) *kidoi* n. sp.**

*Male.* Body weakly convex dorsally; 4.5–5.5 mm in length, oval, subparallel-sided and gently narrowed to both ends. Light yellowish brown with head and undersides blackish; head anteriorly dark brownish and last abdominal sternite apically light brownish; antenna on 4 apical segments, scutellum, pronotum on basal margin, elytra on basal margin and along suture dark brown; elytra with punctate striae more or less darkened; pronotum with dark brownish paired small obscure patches near base; elytra with an obscure brownish patch slightly before middle; coloration of the dorsum variable from almost light yellowish brown to largely blackish brown as shown in Fig. 1.

Head densely punctate between eyes, with a distinct Y-shaped impression; vertex convex, sparsely punctate and shining; antenna 11-segmented, reaching almost to base of pronotum; rather robust and distinctly widened on 5 apical segments; 7th to 10th each as wide as long; relative length of each segment as 1st > 11th > 8th = 9th = 10th > 2nd = 3rd = 7th > 4th > 5th = 6th; 1st segment robust, twice as long as 2nd (Fig. 2). Pronotum transverse, twice as wide as long at median line, widest at posterior angles, thence roundly and rather strongly narrowed to anterior angles, deeply emarginate at anterior margin, gently and arcuately produced at posterior margin; disc weakly and evenly convex dorsally; sparsely punctate medially and densely covered with large punctures laterally; interstices finely aciculate; anterior angle broadly rounded and the posterior rectangular, both lacking setigerous pore. Scutellum as wide as long, broadly rounded; surface shining and impunctate. Elytron 2.5 times as long as wide, gently narrowed posteriorly on apical half, weakly depressed posteriorly to well-developed humerus at basal 1/4; disc with usual 11 rows of punctures, which are large and distinct to apex; interstices shining, impunctate and weakly raised on lateral area. Legs stout; tibia with a short projection preapically on outer side; fore leg with 1st tarsal segment distinctly widened, slightly narrower than the 3rd (Fig. 2). Abdominal sternite smooth, densely punctate at sides. Aedeagus strongly curved in lateral view, gently narrowed and strongly bent down at apex (Fig. 2).

Type series. 10 exs. (one male the holotype: preserved in the Entomological Institute, Hokkaido Univ., Sapporo), Mt. Kurodake, Oita, Kyushu, Japan, 3. VI. 1996, feeding on *Cladirastis sikokiana* (Makino) Makino (Leguminosae), K. Kido leg.; 1 ex., same locality, 27. V. 1995, K. Kido leg.; 2 exs., same locality, 1000 m, 7, 16. V. 1995, M. Oda leg.; 6 exs., Mt. Kurotake, 900 m, Kumamoto, Kyushu, Japan, 14. V. 1989, M. J. Sharkey leg.: these 18 paratypes will be preserved in the Natural History Museum in Basel, Biosystematics Research Institute in Ottawa, Entomological Institute of Hokkaido Univ. in Sapporo, and L. Medvedev's and authors' collections.

*Remarks.* This is very similar to *G.* (*Brachyphytodecta*) *fulvus* Motschulsky occurring in Korea, China, E. Siberia and N. Vietnam (Fig. 3), but is distinguished by the less convex body, light brownish legs, impunctate elytral interstices, and by the shape of aedeagus (Fig. 2). *G.* (*Brachyphytodecta*) *rubripennis* Baly from Japan is clearly distinguished from this new species by the much convex body with black pronotum and by the shape of aedeagus (Fig. 2). In the female fore leg has the 1st tarsal segment not widened.

This new species is named after Mr. K. Kido, who kindly offered these specimens, and made biological observations.

*Description of last instar larva* (Fig. 4)

Body weakly convex dorsally, widest at 4th to 5th abdominal segment, 7.0 mm in length and 2.8 mm in width in alcoholic specimens; yellowish white; head dark brown, broadly whitish along coronal suture and anterior margin, and above antennae;

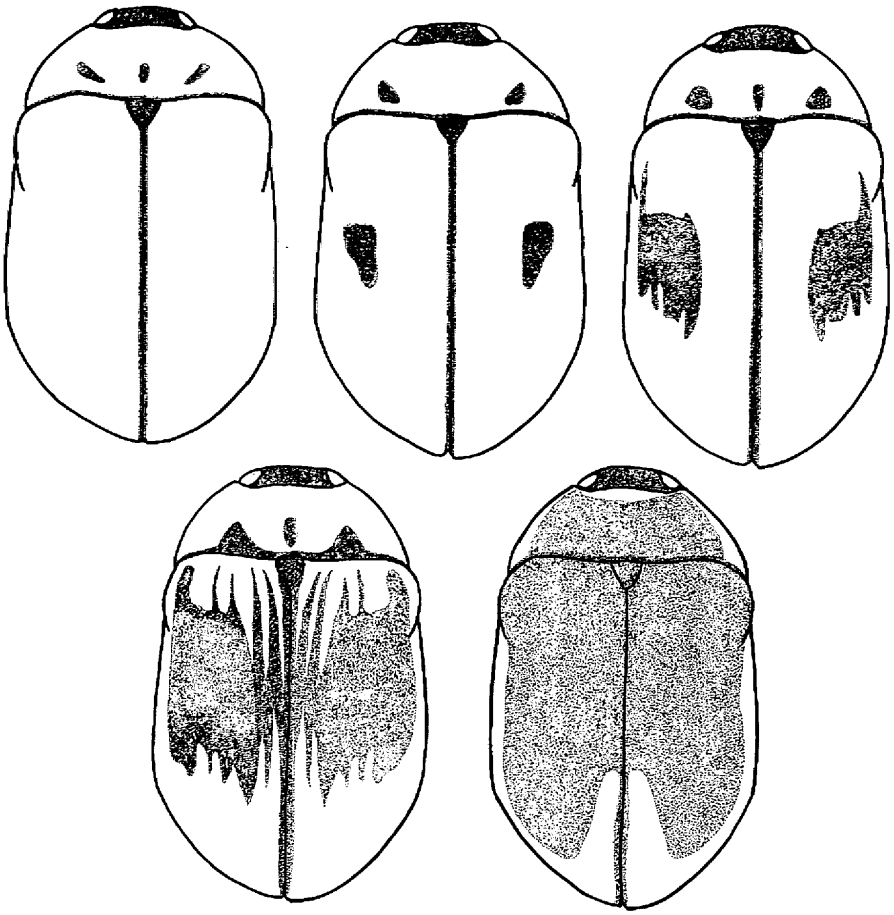

Fig. 1. Color variation of *G. kidoi* n. sp.

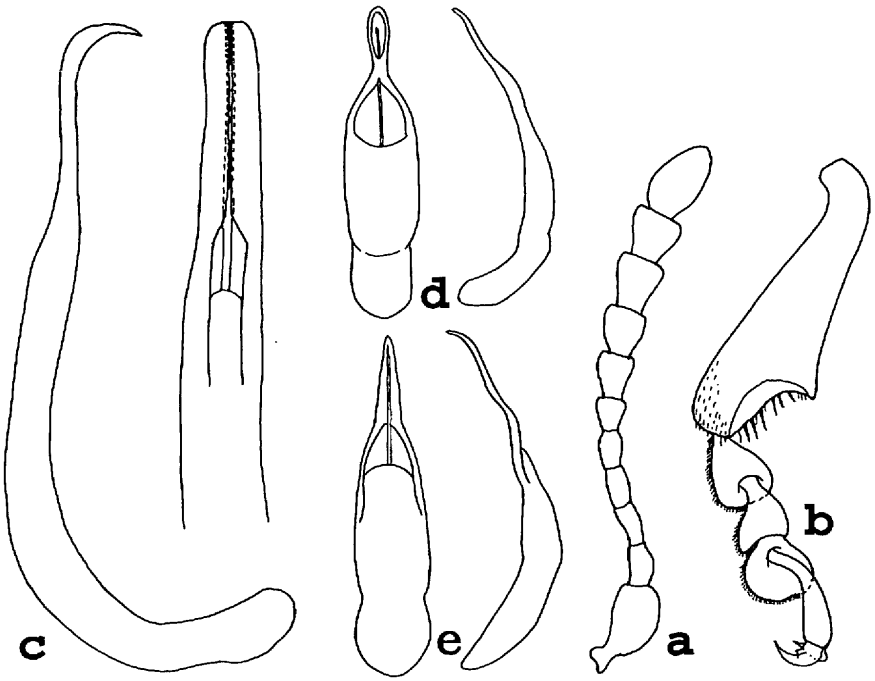


Fig. 2. *Gonioctena kidoi* sp. n. —— a, female right antenna; b, male right fore leg (based on a paratype); c–e, male aedeagus (right, dorsal view; left, lateral view) of: c, *G. kidoi* n. sp.; d, *G. fulvus* Motschulsky; e, *G. rubripennis* Baly.

clypeus pale brownish on basal half; labrum brown; mandibles and lower mouth-parts yellowish white with brownish palpi; spiracles pale; tubercles on dorsal side brown, flat and with many setae, on ventral side wholly decolored and indistinct; dorsal surface covered with obscure chitinous platelets; setae rather long and dense. Abdomen with a pair of pseudopods-like structures ventrally on each of 7th and 8th segment, without defensive glands. Legs yellowish white with apices of femura

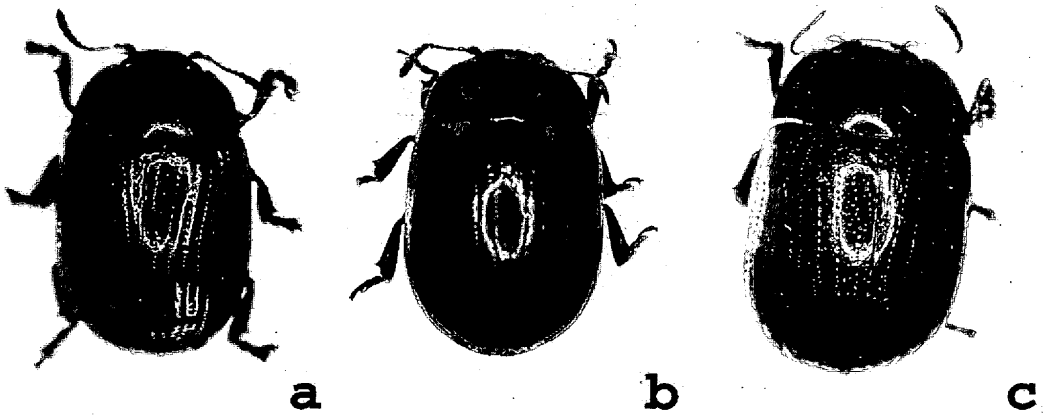


Fig. 3. *Gonioctena* spp. —— a, *Gonioctena kidoi* sp. n. (holotype); b, *G. fulvus* Motschulsky (from Taegu, Korea); c, *G. rubripennis* Baly (from Kyushu, Japan).

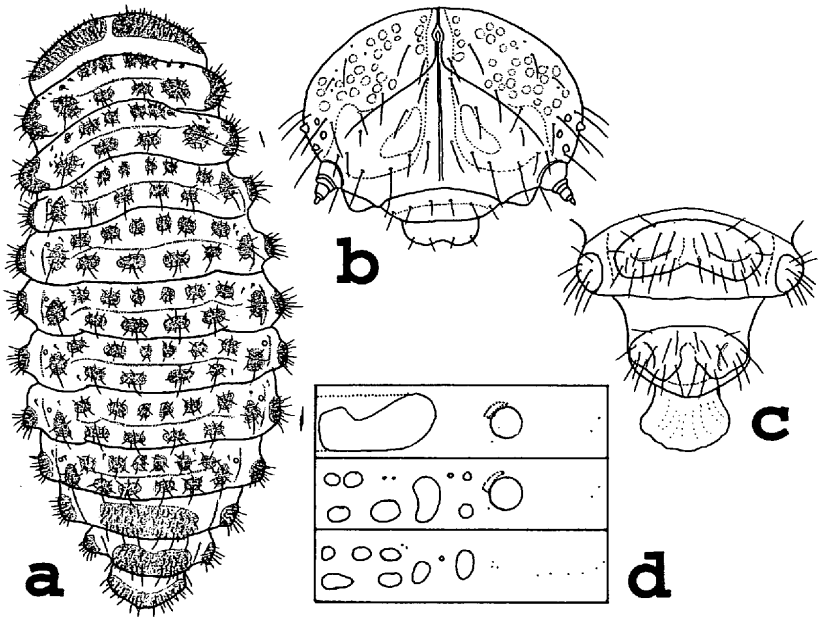


Fig. 4. Last instar larva of *G. kidoi* sp. n. —— a, Dorsal view; b, head; c, 8th–9th abdominal segments; d, tubercular pattern (above, pronotum; middle, mesothorax; below, 2nd abdominal segment).

and tibiae, and claws brown; claws broadly and angularly incised near base.

Head transversely oval; vertex covered with small obscure patches, with about 7 pairs of long setae; coronal suture short; frontal sutures running parallel near base, thence widely divaricated toward antennal bases; endo-carina indistinct; frons medially depressed on each side of endo-carina, with about 10 pairs of setae. Pronotum with *D–DL–EP* (10L 60S: with 10 long and about 60 short setae); meso- and metathorax with 5 pairs of tubercles on dorsal side, *Dai* (6S), *Dae* (7–8S), *Dpi* (1L 6S), *Dpe–DLpi* (1L 6S) and large *DLe* (5L 10S); *DLai* represented by a few short setae, around the bases weakly chitinized; *EPa* (1L 2S) smaller than *EPp* (3S). Abdominal segment with 6 pairs of tubercles on dorsal side, *Dai* (4S), *Dae* (6S), *Dpi* (1L 5S), *Dpe* (1L 5S), *DLa* (6S), and *DLp* (1L 6S); *EP* (6L 6S) large and laterally produced; *P* represented by a few short setae; 7th and 8th segment each with large *D–DL* and *EP*, the former on both sides united at median line.

Specimens examined. 2 exs., Mt. Kuro-dake, 1000 m, Shonai-machi, Oita, Kyushu, Japan, 3. VI. 1996, feeding on *Cladrastis sikokiana* (Makino) Makino (Leguminosae), K. Kido leg.

*Note.* This species is characterized by the weakly convex body, which has 2 pairs of pseudopods-like structures and no defensive glands, small dorsal tubercles with a lot of setae, and by the tubercular pattern which has 5 (*Dai, Dae, Dpi, Dpe–DLpi,* and *DLe*) or 6 pairs (*Dai, Dae, Dpi, Dpe, DLa,* and *DLp*) on meso- and metathorax, and abdomen, respectively. These characters are commonly shared with *G. rubripennis* Baly and characterizes the subgenus *Brachyphytodecta* Bechyne. In the present species, however, meso- and metathoracic *DLais* are weakly developed in the last instar larva. This condition strongly suggests its absence in the 1st instar larva. Were it proved true, this subgenus also includes both weakly and well-developed *DLai* types, contradicting the senior author's previous view (Takizawa, 1976, 1989). This species is clearly distinguished from *rubripennis* Baly by denser setae on the

dorsum, and by the pale mandibles.

*Note on biology.* Kido (1995) first reported the occurrence of this species as *Gonioctena* sp. in Northern Kyushu and gave a photo of the adult and figures of the aedeagus. According to him (pers. commun.), adults are found on a single stock of *Cladrastis sikokiana* in a *Fagus* forest at Mt. Kurodake during early May to early June. Larvae were found on the same tree in early June. This species seems univoltine and overwintering in adult stage as in *rubripennis.* Since genus *Cladrastis* is represented by 2 rare species in Japan, this new species may also feed on common Leguminosae trees such as *Sophora* and *Maackia.* With finding of this species, connection between the subgenus *Brachyphytodecta* and Leguminosae are further strengthened. So far as known, *G. rubripennis* feeds on *Lespedeza* and *Wisteria,* and *G. fulvus* on *Lespedeza* sp.

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