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New species of *Cerophysa* CHEVROLAT from Southeast Asia (Coleoptera: Chrysomelidae: Galerucinae)

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ABSTRACT. Four new species of leaf beetles of the genus *Cerophysa* CHEVROLAT are described from Southeast Asia, including two from Malaysia - *Cerophysa sitihasmah* n. sp. and *Cerophysa warisan* n. sp., and two from Indonesia - *Cerophysa oculata* n. sp. and *Cerophysa dwiwarna* n. sp. Key to all 13 species known from the region is provided.

Key words: entomology, taxonomy, new species, *Coleoptera*, *Chrysomelidae*, *Galerucinae*, *Cerophysa*, Malaysia, Indonesia.

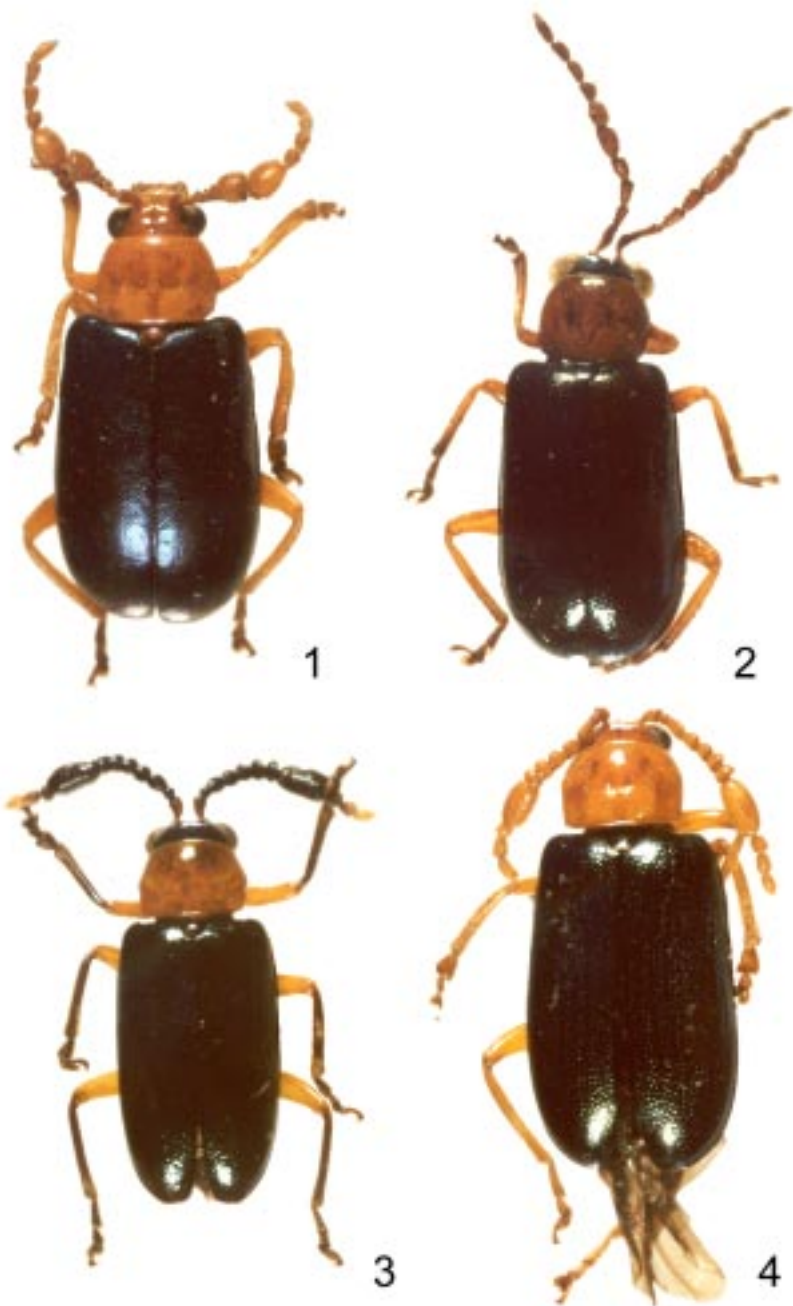
INTRODUCTION

The leaf beetles of the genus *Cerophysa* CHEVROLAT were redefined (MOHAMEDSAID 1993) to distinguished this genus from the genus *Taumacera* THUNBERG. The former differs from the latter in having procoxal cavities open posteriorly and the male without metasternal process. Except for one species (MOHAMEDSAID 2001), all *Cerophysa* have males with modified antennae. Presently, there are nine species known from Southeast Asia. In the present paper, another four species, two from Malaysia and two from Indonesia are described and illustrated. A key to all 13 species from the region is also provided.

KEY TO *CEROPHYSA* SPECIES FROM SOUTHEAST ASIA (partly based on published descriptions)

1. Elytra generally brownish, with sutural and lateral margins dark brown 2.
- Elytra not brownish, but entirely blue, green, or purple 3.

2. Pronotum with sides rounded at apical third. Abdomen blue-green. Legs brownish, except tibiae and tarsi dark brown. In male, antennal segment VIII with a small, smooth, oval-shaped, slightly raised area, and with length as long as segments IV-VII combined (Fig. 8). Length 6.3 mm (Myanmar; Borneo: Sarawak) *flava* BALY
- Pronotum with sides subangulate at apical third. Abdomen dark brown. Legs entirely dark brown. In male, antennal segment VIII with a small, rough, oval-shaped, slightly raised area, and with length shorter than segments IV-VII combined (Fig. 9). Length 7.6-7.8 mm (Java) *javanensis* MOHAMEDSAID
3. Elytra and pronotum more or less similar in coloration, either blue, green, or purple 4.
- Elytra green, blue or purple, dissimilar in coloration from pronotum, either brownish or yellowish 7.
4. Antennae filiform, long, extending to middle of elytra. Pronotum subquadrate, 1.2 times as broad as long, surface with deep oval-shaped depressions at sides. In male, antennae without any modified segments. Length 6-7.2 mm (Borneo: Sabah) *purpurea* MOHAMEDSAID
- Antennae moniliform, short, extending to base of elytra. In male, antennae with modified segments 5.
5. Elytra dark blue, or metallic green. Head and pronotum metallic green. Abdomen metallic blue. Pronotum deeply, transversely depressed. In male, antennal segments III and IV greatly enlarged, the former broadened, deeply sulcate above, the latter transversely placed, spade-shaped. Length 4.8-6.3 mm (Borneo: Sabah; Sumatra) *borneensis* JACOBY
- Elytra, head and pronotum metallic purple. In male, antennal segments VIII, or VI and VII modified 6.
6. Antennae black, except segments X and XI yellowish. Legs black. In male, antennal segment VIII greatly enlarged, with a large, smooth, oval-shaped, slightly raised area, and with length longer than segments IV-VII combined (Fig. 10). Length 5.5-6.5 mm (Sumatra; Peninsular Malaysia; Borneo: Sabah) *gestroi* JACOBY
- Antennae entirely black. Legs brownish. In male, antennal segments VI and VII greatly enlarged, the former one-half shorter than the latter. Length 5.5-6.5 mm (Java) *nodicornis* (WIEDEMANN)
7. Eyes large, with interocular space as broad as transverse diameter of each eye. Antennae slender. Elytra metallic green. Abdomen black. In male, antennal segments VI and VII moderately enlarged, the former longer than the latter; segment VI with a small tubercle at apex; segment VII with a small oval-shaped impression at base (Fig. 6). Length 4.5-4.8 mm (Sumatra) *oculata* MOHAMEDSAID n. sp.
- Eyes small, with interocular space twice as broad as transverse diameter of each eye. Antennae robust 8.



1-4. Males, habitus: 1 - *Cerophysa dwiwarna* n. sp., 2 - *C. oculata* n. sp., 3 - *C. sitihasmah* n. sp.,
4 - *C. warisan* n. sp.

8. Smaller species, with length 4.5 mm. Elytra metallic green. Antennae black, except basal and two apical segments brownish. Legs brownish, except tibiae and tarsi black. Pro-, meso- and metasternum, and abdomen entirely brownish. In male, antennal segment VIII with a large, smooth, oval-shaped, slightly raised area, and with length as long as segments IV-VII combined (Fig. 11). Length 4.5 mm (Peninsular Malaysia) *sitihasmah* MOHAMEDSAID n. sp.
- Larger species, with length 5.3-7.2 mm 9.
9. Elytra finely punctate 10.
- Elytra strongly punctate 11.
10. Pronotum rounded at apical third. Elytra, scutellum, abdomen metallic green. In male, frontal tubercles extremely large, with posterior borders extending to posterior margins of eyes. Length 6.2-7.0 mm (Sumatra; Peninsular Malaysia) *sumatrensis* JACOBY
- Pronotum rounded at middle. Elytra metallic purple. Scutellum and abdomen brownish. In male, frontal tubercles moderately large, with posterior borders extending to middle of eyes. Length 6.8-7.0 mm (Java) *dwiwarna* MOHAMEDSAID n. sp.
11. Elytra metallic purple. Abdomen brownish. Antennae black, except one terminal segment brownish. In male, antennae with double modified segments on VI and VII. Length 5.3-6 mm (Sumatra; Peninsular Malaysia) *wallacii* BALY
- Elytra metallic green. Abdomen not brownish. Antennae entirely black or brownish. In male, antennae with single modified segment on VIII 12.
12. Pronotum broadest at middle. Head metallic green, antennae and legs entirely black. In male, antennal segment VIII longer than segments IV-VII combined. Length 5.5-6.3 mm (Sumatra; Peninsular Malaysia) *viridipennis* JACOBY
- Pronotum broadest at apical third. Head, antennae and legs entirely brownish. In male, antennal segment VIII shorter than segments IV-VII combined. Length 6.8 mm (Peninsular Malaysia) *warisan* MOHAMEDSAID n. sp.

List of *Cerophysa* species from Southeast Asia

(with notes on males modified antennal segments)

1. *Cerophysa purpurea* MOHAMEDSAID (without modified segments);
2. *Cerophysa borneensis* JACOBY (segments 3 and 4);
3. *Cerophysa dwiwarna* n. sp. (segments 6 and 7);
4. *Cerophysa nodicornis* (WIEDEMANN) (segments 6 and 7);
5. *Cerophysa oculata* n. sp. (segments 6 and 7);
6. *Cerophysa sumatrensis* JACOBY (segments 6 and 7);
7. *Cerophysa wallacii* BALY (segments 6 and 7);

8. *Cerophysa flava* BALY (segment 8);
9. *Cerophysa gestroi* JACOBY (segment 8);
10. *Cerophysa javanensis* MOHAMEDSAID (segment 8);
11. *Cerophysa sitihasmah* n. sp. (segment 8);
12. *Cerophysa viridipennis* JACOBY (segment 8);
13. *Cerophysa warisan* n. sp. (segment 8).

DESCRIPTIONS OF NEW SPECIES

***Cerophysa dwiwarna* n. sp.**

(Figs 1, 5)

ETYMOLOGY

The new species, *dwiwarna*, is derived from the Malay word, meaning two colours; for the colour of the beetle, brownish and purple.

DIAGNOSIS

Cerophysa sumatrensis JACOBY differs from the new species in having elytra metallic green and the male with frontal tubercles extremely large, its posterior borders extending to posterior margins of eyes.

DESCRIPTION

Head, antennae, pronotum, scutellum, legs, prosternum, meso- and metasternum, and abdomen brownish. Elytra metallic purple.

Head with vertex moderately convex, smooth, shiny, divided by a thin longitudinal groove; frontal tubercles large, with posterior borders extending to middle of eyes; clypeus triangularly raised, sparsely covered with long hairs; labrum transverse, truncate at apex; maxillary palpi with penultimate segment moderately swollen, the apical segment small, conical. Eyes small, with interocular space twice as broad as transverse diameter of each eye; distance across eyes narrower than pronotum. Antennae robust, short, extending to base of elytra; segment I club-shaped; segment II shortest, as long as broad; segments III-V moniliform, broader than II; segments VI and VII greatly enlarged, the former shorter and with a small rounded tubercle at apex, the latter longer and with a small elongate impression at base; segments IX-X subequal in length; segment XI longer than X, pointed; interantennal space as broad as antennal socket.

Pronotum subquadrate, 1.3 times as broad as long, broadest at middle; anterior border unmarginated, lateral and posterior borders margined; anterior margin straight, posterior margin straight, oblique at sides; surface with moderately deep depressions at sides, smooth, shiny, impunctate; antero-lateral areas strongly deflexed, with anterior angles not visible from above; anterior and posterior angles with seta-bearing pores. Procoxal cavities open posteriorly.

Scutellum triangular, rounded at apex, smooth, shiny.

Elytra subparallel-sided, slightly broadened in middle, rounded at apex; surface depressed subbasally, finely punctate; epipleuron broad, then from basal fourth gradually narrowed to apex.

Legs long, slender; metatibiae without a spine at apex; metatarsus with first segment shorter than the remaining segments combined; tarsal claws appendiculate.

Length 6.5 mm.

Female. As male, but antennae without modified segments. Length 6.5 mm.

TYPES

Holotype male: INDONESIA, Java, Depok, ix.1949, C. v. Nidek (ZMA).

Paratype: Java, Depok, 8.x.1948, C. v. Nidek, female (ZMA).

Cerophysa oculata n. sp.

(Figs 2, 6)

ETYMOLOGY

The new species, *oculata*, is derived from the Latin word meaning eyes; for the large eyes of the beetle.

DIAGNOSIS

Cerophysa viridipennis JACOBY differs from the new species in having smaller eyes, with interocular space 1.5 times as broad as transverse diameter of each eye, antennae and legs entirely black, and the male with a single modified antennal segment (VIII).

DESCRIPTION

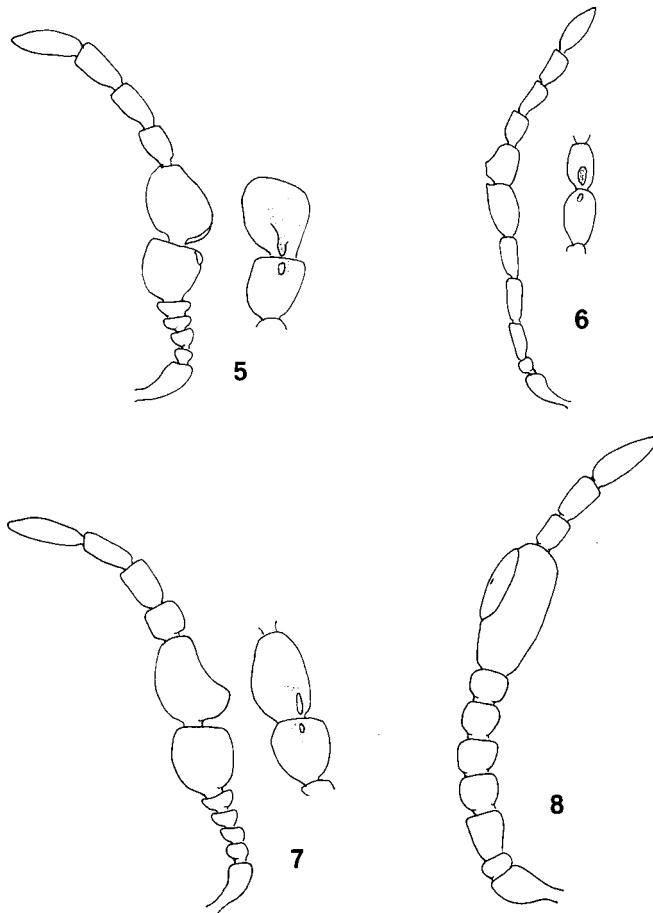
Head, scutellum, elytra metallic green; pronotum, antennae, legs and prosternum brownish; meso- and metasternum, and abdomen black.

Head with vertex moderately convex, smooth, shiny, depressed in middle; frontal tubercles small, transverse; clypeus triangularly raised, sparsely covered with long hairs; labrum transverse, truncate at apex; maxillary palpi with penultimate segment moderately swollen, the apical segment small, conical. Eyes large, with interocular space as broad as transverse diameter of each eye; distance across eyes nearly as broad as pronotum. Antennae slender, extending to middle of elytra; segment I club-shaped; segment II shortest, moniliform, as long as broad; segment III cylindrical, twice as long as II; segment IV cylindrical, as long as and slightly broader than III; segment V cylindrical, shorter, slightly broader than IV; segment VI moderately enlarged, longer than VII, and with a small tubercle at apex; segment VII moderately enlarged, broader at base than at apex, and with oval-shaped impression at base, opposite the tubercle; segment VIII subcylindrical; segments IX and X, cylindrical, subequal in length; segment XI longer than X, pointed; interantennal space one-half as broad as antennal socket.

Pronotum subquadrate, 1.2 times as broad as long, broadest at apical third; anterior border unmarginated, lateral and posterior borders margined; anterior margin concave, posterior margin broadly rounded; surface with deep depressions at sides, smooth, shiny, sparsely impressed with very small punctures; antero-lateral areas strongly deflexed, with anterior angles not visible from above; anterior and posterior angles with seta-bearing pores. Procoxal cavities open posteriorly.

Scutellum triangular, as long as broad, rounded at apex, smooth, shiny.

Elytra subparallel-sided, slightly broadened posteriorly, rounded at apex; surface strongly depressed subbasally along suture, densely impressed with small punctures; epipleuron broad, then from basal fourth gradually narrowed to apex.



5-8. Male antenna: 5 - *Cerophysa dwiwarna* n. sp., 6 - *C. oculata* n. sp., 7 - *C. sumatrensis* JACOBY,
8 - *C. flava* BALY

Legs long, slender; metatibiae without a spine at apex; metatarsus with first segment shorter than the remaining segments combined; tarsal claws appendiculate.

Length 4.5-4.8 mm.

Female. Unknown.

TYPES

Holotype male: INDONESIA, Sumatra, Oosthaven, iii. 1950, C.v. Nidek (ZMA). Paratypes: same data as holotype, male (ZMA), male (UKM).

Cerophysa sitihasmah n. sp.

(Figs 3, 11)

ETYMOLOGY

The new species, *sitihasmah*, is named after Dr. Siti Hasmah Mohamad Ali, the present First Lady of Malaysia.

DIAGNOSIS

The new species differs from *Cerophysa viridipennis* JACOBY in having smaller eyes, with interocular space twice as broad as transverse diameter of each eye and antennae and legs not entirely black and the male antennae with segment VIII as long as segments IV-VII combined.

DESCRIPTION

Head, elytra, scutellum bluish green; antennae black, except basal and two apical segments brownish; legs brownish, except tibiae and tarsi black; prosternum, meso- and metasternum, and abdomen brownish.

Head with vertex moderately convex, smooth, shiny, divided by a thin longitudinal groove; frontal tubercle indistinct; clypeus triangularly raised, sparsely covered with long hairs; labrum transverse, truncate at apex; maxillary palpi black, with penultimate segment moderately swollen, the apical segment small, conical. Eyes small, with interocular space twice as broad as transverse diameter of each eye; distance across eyes narrower than pronotum. Antennae robust, short, extending to base of elytra; segment I club-shaped; segment II shortest, as long as broad; segment III elongate, broadened at apex, twice as long as II; segment IV slightly shorter than III; segments V and VI moniliform; segment VI shorter, broader than long; segment VIII greatly enlarged, cylindrical, longest, broadest, with a large, smooth, oval-shaped slightly raised area; segment VIII as long as segments IV-VII combined; segment IX broader than long; segment X subcylindrical, 1.5 times longer than broad; segment XI longer than X, pointed; interantennal space one-half as broad as antennal socket.

Pronotum transverse, 1.4 times as broad as long, broadest in middle; anterior border unmargined, lateral and posterior borders margined; anterior margin con-

cave, posterior margin broadly rounded posteriorly; surface moderately deeply, transversely depressed, smooth, impunctate; antero-lateral areas strongly deflexed, with anterior angles not visible from above; anterior and posterior angles with seta-bearing pores. Procoxal cavities open posteriorly.

Scutellum triangular, rounded at apex, smooth, shiny.

Elytra subparallel-sided, slightly narrowed posteriorly, truncate at apex; surface densely impressed with moderately large punctures, irregularly arranged; epipleuron broad, then from basal fourth gradually narrowed to apex.

Legs long, slender; metatibiae without spine at apex; metatarsus with first segment shorter than the remaining segments combined; tarsal claws appendiculate.

Length 4.5 mm.

Female. Unknown.

TYPE

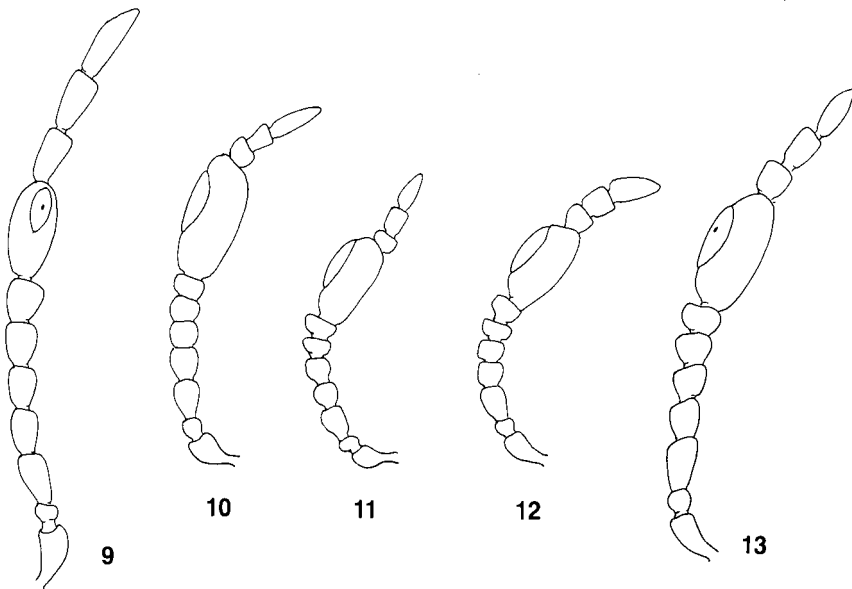
Holotype male: MALAYSIA, Pahang, Chegar Perah, Kuala Lipis, 11.vi.1975, Y. Kiyoyama (UKM).

Cerophysa warisan n. sp.

(Figs 4, 13)

ETYMOLOGY

The new species, *warisan*, is derived from the Malay word, meaning heritage.



9-13. Male antenna: 9 - *Cerophysa javanensis* MOHAMEDSAID, 10 - *C. gestroi* JACOBY, 11 - *C. sitihasmah* n. sp., 12 - *C. viridipennis* JACOBY, 13 - *C. warisan* n. sp.

DIAGNOSIS

Cerophysa sumatrensis Jacoby differs from the new species in having pronotum broadest at middle, elytra finely punctate and the male antennae with double modified segments VI and VII.

DESCRIPTION

Head, antennae, pronotum, legs, prosternum brownish; elytra, scutellum, meso- and metasternum, and abdomen metallic green.

Head with vertex moderately convex, smooth, shiny, divided by a thin longitudinal groove; frontal tubercle large, with posterior borders extending to posterior margins of eyes; clypeus triangularly raised, sparsely covered with long hairs; labrum transverse, truncate at apex; maxillary palpi with penultimate segment moderately swollen, the apical segment small, conical. Eyes small, with interocular space twice as broad as transverse diameter of each eye; distance across eyes narrower than pronotum. Antennae robust, extending to basal fourth of elytra; segment I club-shaped; segment II shortest, as long as broad; segment III elongate, broadened at apex, 2.5 times as long as II; segment IV short, as broad as, 1.5 times shorter than III; segments V-VII moniliform, broader than long, shorter than IV; segment VIII greatly enlarged, cylindrical, longest, broadest, and with a large, smooth, oval-shaped, slightly raised area; segment VIII shorter than segments IV-VII combined; segment IX short, as long as broad, narrower than VII; segment X slightly narrower, 1.5 times longer than IX; segment XI longer than X, pointed; interantennal space as broad as antennal socket.

Pronotum subquadrate, 1.3 times as broad as long, broadest at apical third; anterior border unmarginated, lateral and posterior borders margined; anterior margin concave, posterior margin oblique at sides, sinuate in middle; surface with deep depressions at sides, smooth, almost impunctate; antero-lateral areas strongly deflexed, with anterior angles not visible from above; anterior and posterior angles with seta-bearing pores. Procoxal cavities open posteriorly.

Scutellum triangular, rounded at apex, smooth, shiny.

Elytra subparallel-sided, slightly broadened at middle, rounded at apex; surface depressed subbasally, rugose, densely impressed with large punctures, irregularly arranged; epipleuron broad, then from basal fourth gradually narrowed to apex.

Legs long, slender; metatibiae without spine at apex; metatarsus with first segment shorter than the remaining segments combined; tarsal claws appendiculate.

Length 6.8 mm.

Female. Unknown.

TYPE

Holotype male: MALAYSIA, Perak, 19 miles from Tapah, 6.iv.1976, M. Hata (UKM).

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