

***Atheta* and Its Allies of Southeast Asia  
(Coleoptera: Staphylinidae)**

**V. Singaporean Species Described in Cameron, 1920**

Kohei SAWADA

**ABSTRACT** The *Atheta*-species and its allies of Singapore described in Cameron, 1920, some of which were already discussed in my previous works, are revised herein. A new genus *Ctenatheta* is established to accommodate three oriental species.

**KEY WORDS** Athetae/ taxonomy/ Singapore/ sensillae/ chaetotaxy/ genitalia

In a series of works I have tried to recover the species of Athetae described by Cameron in 1920 from Singapore, which is the first comprehensive taxonomic work regarding the Athetae species of the southeast Asia. Since the island is situated in low elevation and covered thickly by the primary tropical rain forest at that time, it may be assumed that some of these species have a wide range of distribution in south-east Asia. The assumption must be witnessed in the subsequent researches.

Thirteen species out of twenty one have been already recovered in my previous works, and here the seven species out of the remaining eight are treated. The overall results are as tabulated below:

- Atheta* (*Glossola*) *moultoni* Cam. .... ***Ctenatheta moultoni*** (Cam.) n. g.  
*Atheta* (*Metaxya*) *alophila* Cam. .... *Atheta* (*Badura*) *alophila* Cam. .... Swd. 1985, p. 101  
*Atheta* (*Dralica*) *picea* Cam. .... species inquirenda  
*Atheta* (*Microdota*) *melata* Cam. .... *Amischa melata* (Cam.) .... Swd. 1985, p. 108  
*Atheta* (*Microdota*) *malayana* Cam. .... *Malayanota malayana* (Cam.) .... Swd. 1985, p. 104  
*Atheta* (*Microdota*) *vulgaris* Cam. .... *Atheta* (*Badura*) *vulgaris* Cam. .... Swd. 1980, p. 349  
*Atheta* (*Microdota*) *purpurascens* Cam. .... ***Pelioptera purpurascens*** (Cam.)  
*Atheta* (s. str.) *miriventris* Cam. .... ***Atheta (Mimatheta) miriventris*** Cam.  
*Atheta* (*Dimetrota*) *carpophila* Cam. .... *Atheta* (*Eugluta*) *carpophila* Cam. .... Swd. 1985, p. 95  
*Atheta* (*Dimetrota*) *xylophila* Cam. .... *Pelioptera xylophila* (Cam.) .... Swd. 1980, p. 49  
*Atheta* (*Dimetrota*) *mycetophaga* Cam. .... *Atheta* (*Sepedomicra*) *mycetophaga* Cam. .... Swd. 1985, p. 97  
*Atheta* (*Datomicra*) *onthophila* Cam. .... ***Acrotona (Acrotona) onthophila*** (Cam.)  
*Atheta* (*Datomicra*) *mycetophila* Cam. .... ***Atheta (Badura) mycetophila*** Cam.  
*Atheta* (*Colpodota*) *ruparia* Cam. .... *Atheta* (*Chaetida*) *ruparia* Cam. .... Swd. 1980, p. 348  
*Atheta* (*Acrotona*) *rufiventris* Cam. .... *Acrotona (Acrotona) rufiventris* (Cam.) .... Swd. 1980, p. 344  
*Exatheta cingulata* Cam. .... *Halobrecta cingulata* (Cam.) .... Swd. 1985, p. 106  
*Exatheta consors* Cam. .... ***Halobrecta cingulata*** (Cam.)

- Mimatheta fungicola* Cam. ....*Atheta (Mimatheta) singaporensis* Swd. ...Swd. 1985, p. 103  
*Mimacrotona cingulata* Cam. ....*Mimacrotona cingulata* Cam. ...Swd. 1980, p. 343  
*Paratheta carnivora* Cam. ....***Tinotus carnivorus*** (Cam.)  
*Fenyesia nigra* Cam. ....*Fenyesia nigra* Cam. ....Swd. 1984, p. 443

Heartly thanks are directed to Dr. P.M. Hammond and Mr. L. Rogers of the British Museum (Natural History) for giving me access to the type of Cameron collection at my disposal, as well as to Dr. M. Sorensson of the Lund University for furnishing me with nice material of the Swedish Athetae. To Prof. Saburo Nishimura of the Kyoto University I wish to express my cordial thanks for his constant support and guidance, as well as to Prof. em. Ryozo Yoshii of the Kyoto University for his constructive advice and criticism. For the publication of the thesis thanks are due to the Biological Laboratory of the same University.

***Atheta (Mimatheta) miriventris*** Cameron, 1920      Fig. 1

*Atheta (Atheta) miriventris* Cameron, 1920: 259

*Thamiaraea insigniventris* (nec Fauvel), Cameron, 1939: 445

Male. Bright reddish brown, weakly shining anteriorly; head and pronotum similarly pigmented, while elytra are a little infusate; abdominal segments V and VI much darker than others; antenna brown leaving three bright basal segments; legs paler. Body nearly parallele to each side and lightly depressed. Head is peculiar in having a large, umbilicate sensory organ between the antennal basis, which consists of a bundle of minute setulae as in Fig. A. Eyes large and convex beyond the head contour. Postgena short for the eye and arcuately converging basally. Cervical carina is diverging. Antenna with segment I thicker than II; III subequal to II in length; IV-VI a little longer than wide; VII to X are gradually increasing in width, while X is fairly transverse; XI elongate. Labrum (Fig. B) nearly truncate in front; *m*-2 is anterior to the level of *m*-1; all these rows are subequally short; 2+2 secondary setae are present. *a*-sensilla of labral margin (Fig. C) reduced to a setula, but *b* is becoming developed and truncate at apex; *c* inconspicuous. Mandible narrow and briefly hooked apically; the right one (Fig. D) has a well-defined molar whose apex is directed forward. Maxillary palpus (Fig. E) is slender; II elongate, only a little shorter than III, which is gently dilated in the middle; IV subulate, unusually elongate and nearly as long as III. Galea has a large, well-ciliated distal lobe. Lacinia broadly dilated in the middle, with a row of uniformly arranged marginal spines. Labial palpus (Fig. F) 3-segmented; I normally thick, while III is longer, gently dilated distally;  $\beta$  is close to *tp*;  $\gamma$  posterior to *b*;  $\delta$  as usual; *mp* on the level of *h*, while *e* is posterior to it; *b* on the same level with *tp*. Glossa (Fig. G) slender, constricted proximally, with 2 short, diverging arms on apical one third; paired basal pores nearly contiguous. Median area of prementum narrow, retracted behind and without pseudopores, but in lateral area there are numerous fine pseudopores together with 2 real and 1 setal pores. Mentum (Fig. H) emarginate in front; *v* lateral to *u*. Pronotum evenly convex above, finely granulate throughout and with a fine median sulcus in

its full length; lateral margin nearly straight, with rounded basal corner; lateral erect setae blackish, while secondary setae are short and those along the middle are directed posteriorly. Mesosternal process brief, obtusely pointed apically. Elytra wider than long, not emarginate postero-externally; postero-external corner is shortly projected in one specimen at hand. Flabellum with up to 9 long and short setae. Macrochaetotaxy 01-12-12-12-12-. Abdomen nearly glabrous and highly modified: Terg. III (Fig. I) depressed anteriorly and abruptly raised posteriorly, where a narrow middle emargination with some longer setae is to be seen; on both sides of III there is a distinct projection in form of a broad lobe (*f* in Fig. I); IV raised to form the median carina ending posteriorly in a shallow emargination, where there are some fine setae; V roundly emarginate in the posterior margin; VII has three (?) obsolete carinulae in the middle; the posterior margin of VIII (Fig. J) has an obsolete median process and a pair of toothlet; *a*-2 remote from stigma. Meso- and metatibiae have

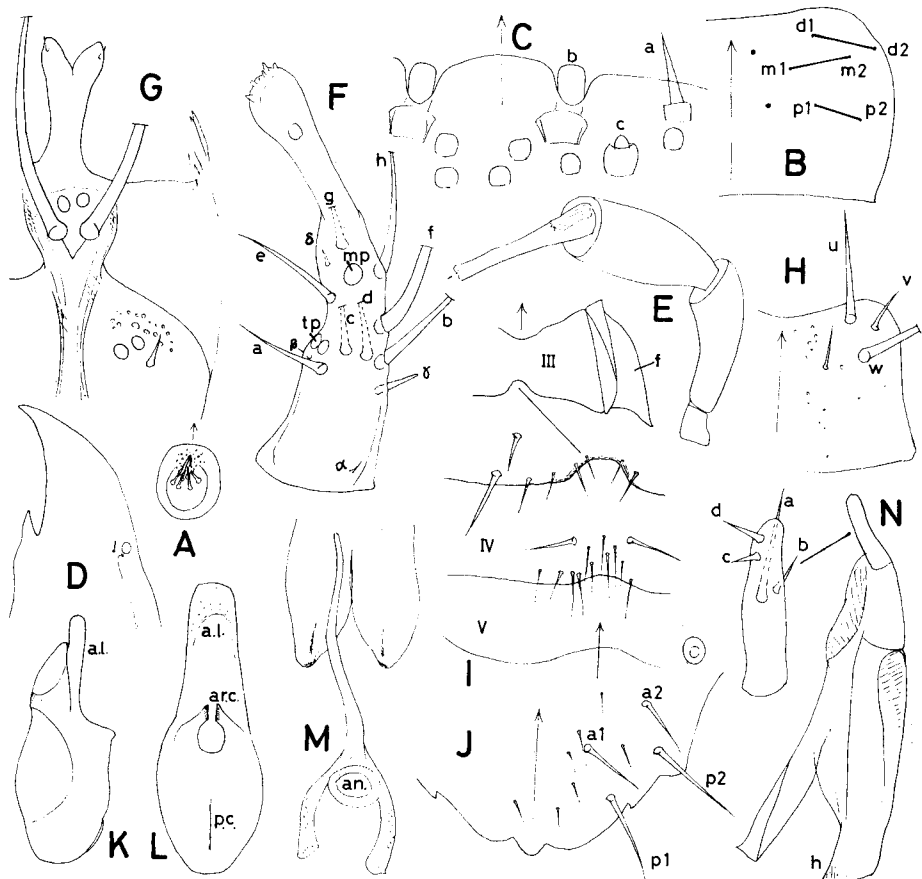


Fig. 1. *Atheta (Mimatheta) miriventris*, ♂. A. Epicranial sensilla; B. Labral chaetotaxy; C. Labral margin; D. Right mandible; E. Maxillary palpus; F. Labial palpus; G. Glossa & prementum; H. Mentum; I. Terg. III-V & their posterior margins; J. Terg. VIII; K, L. Median lobe; M. Copulatory piece; N. Lateral lobe.

long conspicuous macrosetae. Tarsal formula 4, 5, 5, in which meso- and metatarsi have short segment I, not longer than II. Empodium of each leg short and stout. Median lobe (Fig. K, L) is 0.44 mm long; apical lobe elongate and ventrally truncate at apex. In lateral view it is nearly straight in full length. Copulatory piece (Fig. M) in situ is filiform, enormously elongate and no suspensorium is observed; distal apodeme broad and simple in ventral view. Lateral lobe (Fig. N) narrowly elongate; middle apodeme almost reduced; distal segment elongate; *a* is long, and close to smaller *b*. Length. ca. 3.20 mm (head 0.32 mm long  $\times$  0.54 mm wide; pronotum 0.48 mm  $\times$  0.67 mm; elytra 0.48 mm  $\times$  0.96 mm).

Specimen examined. Singapore: Labrador villa, Cameron coll. (BMNH).

In one (syntype) of the two examples ( $\sigma$ ,  $\delta$ ) I have investigated the sexual character is quite obscured and represented only by the setigerous sensilla of the head. Afterwards Cameron (1939, p. 445) has regarded the species to be a synonym of *Thamiaraea insigniventris* Fauvel, 1878, but in *Thamiaraea* the labial palpus is 2-segmented, while it is 3-segmented in *Atheta*. In the gross feature of labium and labrum *A. (M.) miriventris* Cameron is close to *A. (M.) singaporensis* K. Sawada (cf. 1985, p. 103), in that the glossa has broader arms and labial palpus has shorter segment III.

***Atheta (Badura) mycetophila* Cameron, 1920** Fig. 2

*Atheta (Datomicra) mycetophila* Cameron, 1920: 263

Male. Pale brown and shining; head a little darker than pronotum; elytra obscurely infuscate at the middle; abdomen darker on distal segments; antenna bright basally; legs pale. Body relatively broad, with very short body setae. Head is large for the corpus and nearly rounded; surface is with fine granules leaving the glabrous middle portion of the head. Eyes large, and convex beyond the head contour. Antenna lightly dilated towards the extremity; segment II longer than III; IV broader than long; V large; X transverse; XI elongate. Cervical carina diverged. Labrum (Fig. A) not emarginate in front; *m*-2 is close to the level of *d*-2, and there are 2+2 secondary setae. From the labral margin (Fig. B) *a*-sensilla is extremely reduced to a minute setula, while *b* is normal and with broadly truncate apex; *c* inconspicuous. Mandible narrowly elongate and weakly hooked apically; the right one (Fig. C) with a minute toothlet. Maxillary palpus (Fig. D) 4-segmented; II is nearly parallel; III is longer than II and spindle-like; IV is rather short. Lacinia (Fig. E) is emarginate on inner margin posterior to the distal comb. On labial palpus (Fig. F) I much longer than III;  $\beta$ ,  $\delta$  strongly reduced, but  $\gamma$  is long and very close to *b*; *a* is on the same level with *b*; *c*, *d* are anteriorly dislocated. Glossa (Fig. G) elongate and forked into two diverging arms with obtuse apex. Median area of prementum broad, constricted behind and without pseudopores; lateral area has 1 setal, 2 real and some 4 large pseudopores close to the anterior margin. Mentum (Fig. H) is emarginate in front; *v* long, situated between *u* and *w*; some stout secondary setae are present in the middle area. Pronotum is weakly convex above and with an obsolete median sulcus in its full length; lateral erect setae are very fine and long; surface is with fine granules all over. Mesosternal process briefly pointed. Elytra as long as

the pronotum and more roughly granulate; macroseta of the humeral corner very short. Flabellum with up to 4 long and short setae. Macrochaetotaxy 01-12-13-13-13-. Abdomen gradually narrowed behind; tergite VI, VII nearly glabrous and very shining. Mesotibia with a short, but conspicuous macroseta. Metatarsus with I-IV subequally short and no empodium is present in all legs.

Terg. VIII (Fig. I) is not modified with 4+4 equally long major setae; microsculpture superficial and imbricate. Median lobe (Fig. J, K) of aedeagus is 0.24 mm long and ventrally with an apical lobe produced to form an obtuse broad apex. Costae *ar. c.* subparallel to each other and shortly recurved distally; *m. c.* effaced. Copulatory piece (Fig. L) is broad in the middle, and then produced to form a long apical process; distal apodemes consist of a pair of oblong lobes. Lateral lobe (Fig. M) is broad and with reduced velum; middle apodeme is not detected; distal segment is oblong; *a* is much longer than others; *b* is on the level of *d* and similarly long to each other. Length. ca. 1.40 mm (head 0.26 mm long × 0.30 mm wide; pronotum 0.28 mm × 0.34

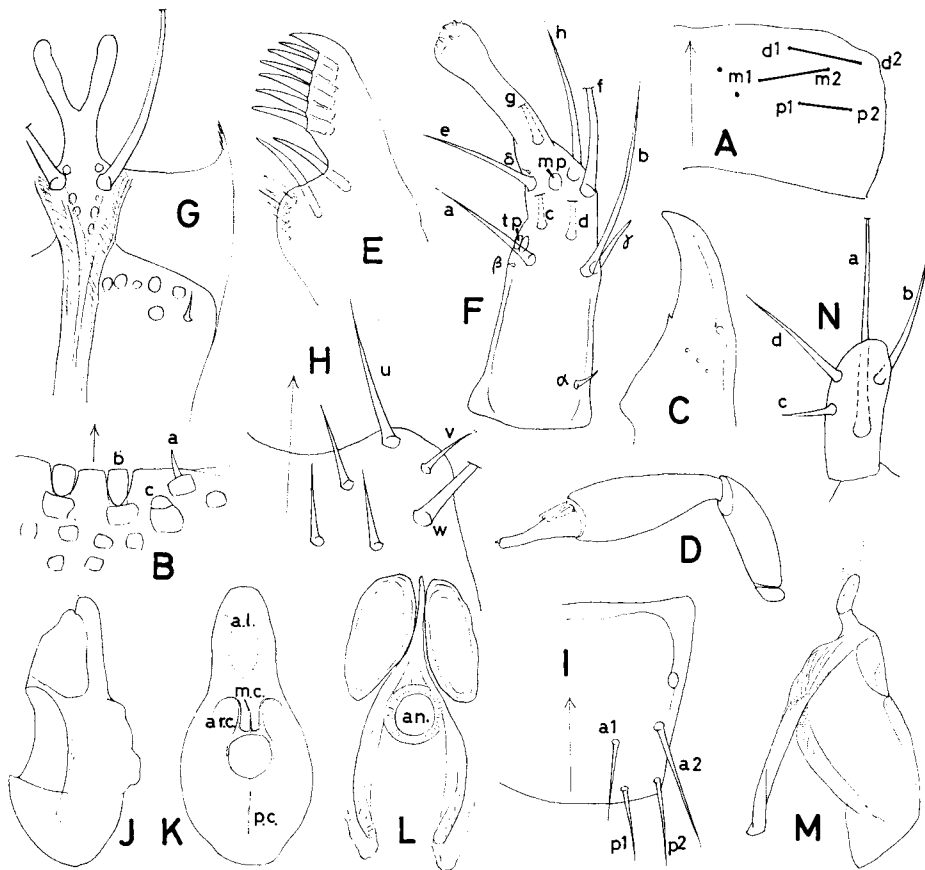


Fig. 2. *Atheta (Badura) mycetophila*, Syntype ♂. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Maxillary palpus; E. Lacinia; F. Labial palpus; G. Glossa & prementum; H. Mentum; I. Terg. VIII; J, K. Median lobe; L. Copulatory piece; M. Lateral lobe.

mm; elytra 0.24 mm × 0.40 mm).

Specimen examined. Singapore: Syntype of ♂, Sembawang, Cameron coll. (BMNH).

From the macrochaetotaxy and from the simple form of the inner armature of aedeagus the species is to be included in *Badura* Mulsant et Rey (sensu Yosii et Sawada, 1976, p. 35). Just as in *S. (B.) vulgaris* Cam., *a*-sensilla of labral margin is reduced to a minute setula, but labial palpus has longer I, the copulatory piece is more prolonged and the distal segment of lateral lobe is in another form.

### ***Ctenatheta*, gen. nov.**

Type species: *Atheta (Glossola) Moultoni* Cameron, 1920

The new genus is near *Dilacra* Thomson, 1858, the macrochaetotaxy is without anterior row of setae as represented 0-0-0-, but the distal comb of lacinia is consisting of uniformly slender, loosely-arranged spines (Fig. E) and the glossa (Fig. G) is elongate, forked in two well-diverged arms. In labial palpus (Fig. F) segment I is almost as long as segment III, seta *a* is close to *tp* and on the same level with it.

In the gross feature of prementum the new genus is close to *Gnypteta* Thomson, 1858 but distinguishable by longer labial palpus, and by the location of seta *a* which is far remote from *tp*.

From the Bornean species already reviewed, *Tachyusa opaca* Bernhauer, 1915 (cf. K. Sawada, 1980, p. 38) and *Gnypteta abdominalis* Cameron, 1933 (cf. K. Sawada, 1980, p. 32) must be included in this new genus.

### ***Ctenatheta moultoni* (Cameron, 1920) new combination** Fig. 3

*Atheta (Glossola) Moultoni* Cameron, 1920: 255

Female. Brown and shining; head darker than pronotum and with bright anterior part; elytra a little darker than pronotum and yellowish at the posterior margin; abdomen infusate on V to VII; antenna darker towards the extremity; legs brown. Body has inconspicuous macrosetae throughout. Head nearly orbicular in outline, and with fine, dense granules all over. Eyes moderately large. Postgena rounded. Antenna fairly long and feebly dilated towards the tip; segment I elongate, and similar to III; II apparently shorter than III; IV much longer than wide; IV-X increasing in width; XI fully as long as 2 preceding together. Cervical carina diverged. Labrum (Fig. A) broadly emarginate in front; *p*-2 is posterior to the level of *p*-1; *d*-1 nearly on the same level with *d*-2 and there are 3+3 secondary setae. *a*-sensilla (Fig. B) curved distally; *b* truncate at apex; *c* well-developed. Mandible thick basally and pointed briefly at apex; the right one (Fig. C) with a fine molar. Maxillary palpus (Fig. D) 4-segmented; III much longer than II and dilated towards the apex; IV is long in relation to III, and with short filamentous basal sensillae. In labial palpus (Fig. F) II is well-defined and longer than wide; *β* strongly reduced, while *γ* well-developed and placed just posterior to *f*; *f* posterior to the level of *mp*; *e* not observed; *a* close to *tp*. Glossa (Fig. G) is deeply forked at the basal third. Median area of prementum is moderately broad and with some large and small pseudopores; lateral area has 1 setal, 2 real and a number of pseudopores, which are arranged along

the anterior margin. Mentum (Fig. H) is distinctly emarginate in front; *v* fairly elongate; *w* close to the level of *v*. Galea has a well-developed distal lobe. Lacinia (Fig. E) is sharply hooked at apex and abruptly dilated basally, whose inner margin is with the distal comb consisting of 6 unusually slender, loosely arranged spines. Pronotum is narrowed behind and granulate as the head; lateral margin is obsoletely sinuate before the base, and then the basal corner is well-defined; lateral erect setae short. Mesosternal process prolonged behind and pointed at apex. Elytra feebly arcuate bilaterally, faintly emarginate postero-externally, and somewhat depressed along the suture. Flabellum with up to 6 long setae. Macrochaetotaxy 01-02-02-03-03-23. Abdomen is indistinctly narrowed behind and very finely granulated throughout; lateral erect setae short, but conspicuous. Tarsal formula 4, 5, 5, in which meso- and metatarsi have similarly short basal segments. Each tarsus with unusually stout empodium (Fig. K). Tibial macrosetae very short, not surpassing the width of tibia. Tergite VIII (Fig. I) is large and its posterior margin is sinuately emarginate in the middle; among 4+4 major setae *a*-1 is posterior to the level of *a*-2; microsculpture (Fig. J) is transversely imbricate. Stermite VIII is broadly rounded

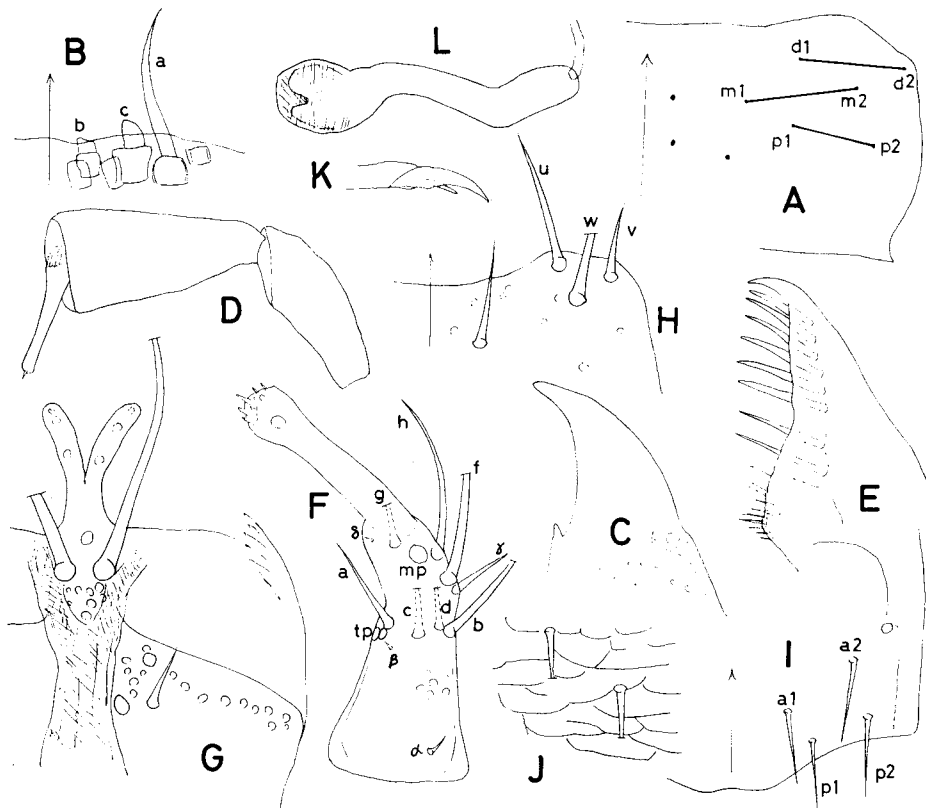


Fig. 3. *Ctenatheta moultoni*, Syntype ♀. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Maxillary palpus; E. Lacinia; F. Labial palpus; G. Glossa & prementum; H. Mentum; I, J. Terg. VIII & its microsculpture; K. Empodium of metatarsus; L. Spermatheca.

behind and with a row of similarly short marginal setae. Spermatheca (Fig. L) elongate, sublinear and weakly geniculate distally; bursa suborbicular and bears a small umbilicus within.

Length. 2.40 mm (head 0.34 mm long  $\times$  0.44 mm wide; pronotum 0.41 mm  $\times$  0.50 mm; elytra 0.41 mm  $\times$  0.66 mm).

Specimen examined. Singapore: Cotype of ♀, Kepek Harbour, Cameron coll.

As the macrochaetal arrangement of abdomen is without the anterior row of setae on each tergite, as the broad median area of prementum with pseudopores and by the basal segments of hind tarsi being subequally short the present species may be included in *Dilacra* Thomson, 1856 (*sensu* K. Sawada, 1984, p. 437). It is characteristic in that the distal comb of lacinia is composed of slender teeth, and that the empodium of each leg is converted to a stout spinule. Besides, the antennae and legs are very long.

***Acrotona (Acrotona) onthophila* (Cameron, 1920) new combination** Fig. 4

*Atheta (Datomicra) onthophila* Cameron, 1920: 262

Male. Dark brown and shining; head intensively pigmented; elytra with a yellow

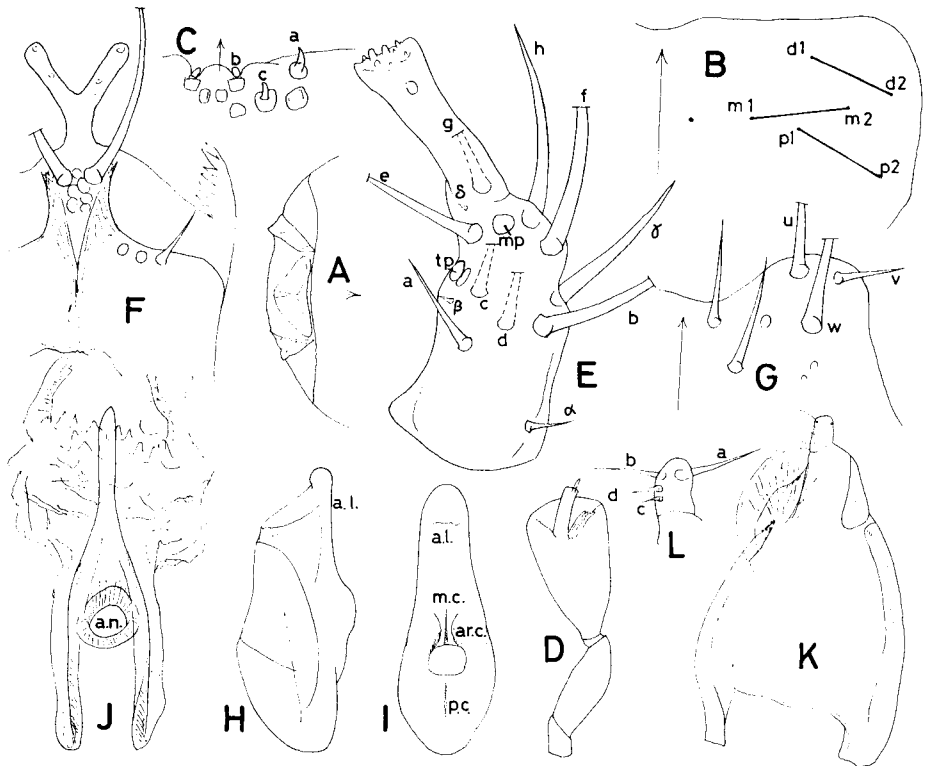


Fig. 4. *Acrotona (Acrotona) onthophila*, Syntype ♂. A. Cervical sclerites; B. Labral chaetotaxy; C. Labral margin; D. Maxillary palpus; E. Labial palpus; F. Glossa & prementum; G. Mentum; H, I. Median lobe; J. Copulatory piece; K, L. Lateral lobe & its distal segment.



tinge; antennae bright in basal segments; legs paler. Body minute and gradually narrowed behind. Head small for the corpus, rounded and without depression in the middle. Eyes small. Postgena rounded. Antenna relatively long; segment I is short compared to II; III is the smallest; IV as long as wide; X transverse; XI broad. Cervical carina (Fig. A) not diverged and with a pair of sclerite guarding the foramen of the neck on each side. Labrum (Fig. B) nearly truncate, with a shallow emargination in the middle;  $p-2$  is clearly posterior to the level of  $p-1$ , and proximal row is subparallel to the distal row. Secondary setae are 1+1 in number.  $a$ -sensilla of labral margin (Fig. C) is reduced to a spiniform process;  $b$ ,  $c$  inconspicuous. Mandible hooked as usual; the right one with fine molar. Maxillary palpus (Fig. D) 4-segmented and short; III dilated distally; IV short and with long basal filamentous sensillae. Labial palpus (Fig. E) 3-segmented and geniculate; II is relatively short; III slightly constricted in the middle and dilated apically;  $r$  is enormously elongate while  $\beta$ ,  $\delta$  are reduced;  $\alpha$  well-developed;  $a$  apart from  $tp$ ;  $r$  anterior to  $b$ ;  $h$  is on the same level with  $mp$ . Two arms of the glossa (Fig. F) elongate and diverging; basal pores not observed. Median area of prementum narrow and with some 6 pseudopores anteriorly; lateral area has 2 real and 1 setal pores arranged in a transversely along the anterior margin. Mentum (Fig. G) emarginate in the middle of the anterior margin;  $v$  is elongate and lateral to  $u$ . Galea is with a large distal lobe. Lacinia is abruptly dilated in the middle of the inner margin and with two well-defined teeth. Pronotum convex above, gently arcuate bilaterally and without depression along the middle; lateral erect setae long and conspicuous; surface with fine granules all over; secondary setae along the middle are directed anteriorly. Prosternum regular, while mesosternum is briefly produced behind and ending in an obtuse apex. Elytra are rougher than the pronotum and not emarginate postero-externally; a long erect seta is present just behind the humeral corner. Flabellum is with only 1 long seta. Macrochaetotaxy 02-13-13-13-24. Abdomen granulated, with short, but conspicuous erect setae on each side. Posterior margins of tergites bosoletely crenulated; terg. VIII of male is not modified, but with a shallow emargination in the posterior margin;  $a-2$  is widely separated from stigma; microsculpture apparently imbricate, but obscure towards the posterior margin. It has a pair of short well-sclerotized projections. Tarsal formula 4, 5, 5, in which the basal segments of metatarsus are similarly short. Meso- and metatibiae are with long conspicuous macrosetae. Median lobe of aedeagus (Fig. H, I) is 0.36 mm long, narrowly elongate and ventrally obtuse at apex; laterally it is nearly straight and with a rounded apex. Copulatory piece (Fig. J) is narrowly elongate and with a slender apical lobe and narrow suspensoria; distal apodeme mostly membraneous. Lateral lobe (Fig. K) is broad basally and with a narrow vellum; middle apodeme is apparently effaced; the basal hook ( $b$ ) is not marked; distal segment is very short for the corpus;  $a$ ,  $b$  are dislocated distal to the level of  $c$ ,  $d$ .

Length. ca. 1.40 mm (head 0.18 mm long  $\times$  0.26 mm wide; pronotum 0.24 mm  $\times$  0.31 mm; elytra 0.20 mm  $\times$  0.40 mm).

Specimen examined. Singapore: Syntype of ♂, Cameron coll. (BMNH).

As the posterior margins of abdominal tergites are crenulated and as the macrochaetotaxy is 02-13-13-, the species is to be included in *Acrotona* (s. str.) (sensu Yosii et Sawada, 1976, p. 89). The gross feature of labium and male genitalia are close to *A. (A.) aterrima* (Gr.), but distinguishable by the longer glossa, by the lateral area of prementum devoid of pseudopores and by the longer copulatory piece. Besides, *a*-sensilla of the labral margin is reduced to a small setula.

***Pelioptera purpurascens* (Cameron, 1920) new combination** Fig. 5

*Atheta* (*Microdota*) *purpurascens* Cameron, 1920: 259

Male. Brownish, with strong metallic reflection; fore-parts of the trunk in the same

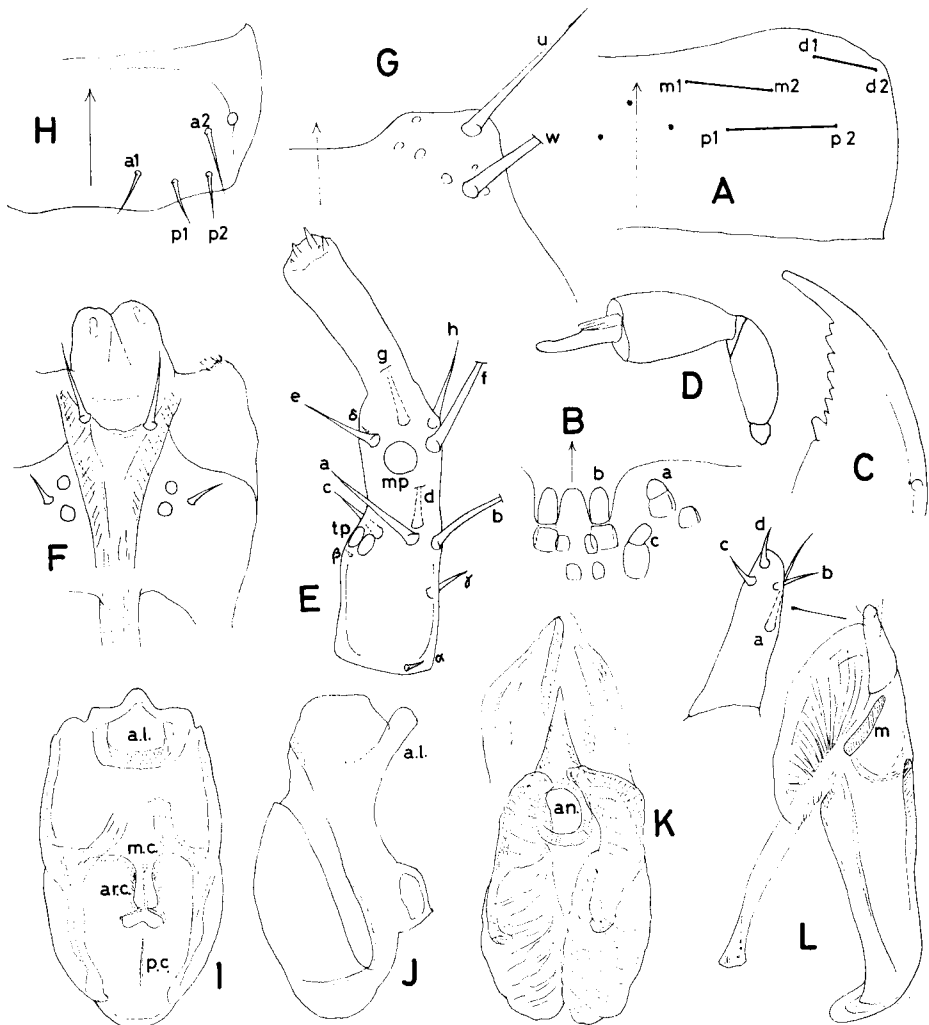


Fig. 5. *Pelioptera purpurascens*, Syntype ♂. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Maxillary palpus; E. Labial palpus; F. Glossa & prementum; G. Mentum; H. Terg. VIII; I, J. Median lobe; K. Copulatory piece; L. Lateral lobe.

colour; abdomen brown and bright basally; antennae are brownish, darker distally; legs are paler. Body small, subparallel. Head relatively large, rounded and not depressed in the middle; surface with long secondary setae and fine granules throughout. Eyes large, but not protruded from the head contour. Cervical carina is diverged. Antenna moderately dilated distally; segment III is shorter than II; IV the smallest; V-X are wider distally and X is strongly transverse; XI only broad. Labrum (Fig. A) fairly transverse and broadly emarginate in front; chaetal arrangement is modified:  $m-2$  is dislocated to the midway between  $p-1$  and  $d-1$ , thus the medial row is more to the inside than usual;  $1+1$  secondary setae are present (always?).  $a$ -sensilla of labral margin (Fig. B) is hemispherical;  $b$  oblong;  $c$  inconspicuous. Mandible slender to form a prolonged apical hook; the right one (Fig. C) is with an obtuse molar and roughly crenulate anterior to it. Maxillary palpus (Fig. D) 4-segmented, short; III much broader than II; IV is elongate.  $\beta$  of labial palpus (Fig. E) close to  $tp$ , while  $\gamma$  is about the middle of I;  $\delta$  is on the level of  $h$ ;  $a$  is close to  $b$ ;  $e$  is anterior to  $mp$ , which is much larger than  $tp$ . Glossa (Fig. F) short, obtuse at apices and dilated basally. In prementum the median area is strongly converging posteriorly and devoid of pseudopores; lateral area bears 1 setal and 2 real pores only. Mentum (Fig. G) is abruptly emarginate in the middle of the anterior margin;  $v$  not observed;  $w$  is posterior to  $u$ . Pronotum narrowed behind and not depressed in the middle; lateral margin is nearly straight, with long erect setae; secondary setae along the middle are directed posteriorly. Elytra nearly rectangular, not emarginate behind. Flabellum with up to 4 long and short setae. Macrochaetotaxy as 01-12-12-12-12-34. Abdomen is subparallel with a few, short erect setae bilaterally. Terg. VIII (Fig. H) fairly transverse, broadly emarginate in the middle of the posterior margin; from  $4+4$  major setae  $a-2$  is lateral to stigma; posterior row of setae much shorter than the anterior row; microsculpture in the middle portion is transversely imbricate. Tarsal formula 4, 5, 5, in which meso- and metatarsi are with segment I not longer than II; each tibia has short, inconspicuous macrosetae. Median lobe of aedeagus (Fig. I, J) is 0.18 mm long, with a distinct framework of sclerites which is oblong in ventral view, subtruncate anteriorly and ending in a short, obtuse apex; laterally the apical lobe is evenly bent down;  $ar. c.$  weakly constricted and recurved distally;  $m. c.$  entire. Copulatory piece (Fig. K) short, sharply pointed apically, with well-developed annellus. A large membrane is covering over the basal half of copulatory piece. Lateral lobe (Fig. L) is narrow anteriorly, with obtuse basal hook ( $h$ ); vellum entire; distal segment elongate, gradually narrowed;  $a$  is before the middle of the segment and lightly longer than  $b$ .

Length. 1.40 mm (head 0.26 mm long  $\times$  0.26 mm wide; pronotum 0.22 mm  $\times$  0.28 mm; elytra 0.20 mm  $\times$  0.37 mm).

Specimen examined. Singapore: Syntype of ♂, Bukit Timah, Cameron coll. (BM-NH).

In the campanulate  $a$ -sensilla of labral margin, the lobate glossa and in the prementum destitute of pseudopores the species must be included in *Pelioptera*. In the form of labium as well as labial chaetotaxy the present species is similar to *P. exasperata*

(Kr.) (cf. Sawada, 1977, p. 206 et 1980, p. 42), but different in the characters of the male sex. Besides, the mandible has rough serration on the masticatory margin.

***Halobrecta cingulata* (Cameron, 1920)**

*Exatheta consors* Cameron, 1920 new synonym

*Halobrecta cingulata*, K. Sawada, 1985: 106

Comparison of the type specimen reveals that *Exatheta consors* Cameron coincides well with *H. cingulata*.

\* \* \* \* \*

The subsequent species does not belong to Athetae, although it has hitherto been regarded as such.

***Tinotus carnivorus* (Cameron, 1920) new combination** Fig. 6

*Paratheta carnivora* Cameron, 1920: 269

Female. Dark reddish brown, and strongly shining; head nearly black; pronotum darker than elytra; abdomen infuscate in the middle, and paler towards the apex; antennae brown with bright basal segments; legs paler. Body slender and well-sclerotized. Head rather small for the trunk, rounded, convex above and with a few punctures; antenna short and dilated towards the extremity; segment II is a little longer than III; IV broader than long and smaller than V; V-X are increasing in width, and then fairly transverse in distal segments. Cervical carina diverged. The anterior margin of labrum (Fig. A) is subtruncate, gently convex in the middle; distal row very short, while others are very long; *m-1* on the level of *p-1*; 1+1 secondary setae are present. *a*-sensilla of labral margin (Fig. B) well-developed, diverging distally, while *b*, *c* strongly reduced, especially the former is sunk to a deep emargination of the anterior margin. Mandible normal; the right one has a small molar. Maxillary palpus 5-segmented; II broad and short; III dilated distally; IV (Fig. C) is moderately long and subsegmented into two different segments on distal one third. Lacinia is gradually dilated along the inner margin and two isolated teeth are not well-defined from distal comb. Galea with long, densely dilated distal lobe. Labial palpus (Fig. D) 4-segmented; I-III subequally long; IV short in relation to III;  $\beta$ ,  $\gamma$ ,  $\delta$ , similarly long and conspicuous; *a* situated the midway between *b* and *tp*; *e* on the same level with *mp*, while *f* is placed the midway between *b* and *h*. Glossa (Fig. E) is longer than wide, retracted distally and with two small setae basally. Median area of prementum very broad, sides parallel and with some 13 pseudopores; paired basal setae short, standing remote from one another; lateral area has 3 real, 1 setal, but no pseudopores. Mentum (Fig. F) deeply emarginate in front; *v* moderately long and on the level of *u*; *w* well inside the lateral margin. Pronotum strongly convex above, evenly rounded along the lateral margin, with a well-defined posterior corner; lateral erect setae invisible; surface bears a few, long secondary setae, those along the middle are directed posteriorly. Prosternum is convex to form a medial protuberance. Mesosternum with a median carina in its full length and shortly pro-

duced behind and ending in a subtruncate apex. Elytra short for the pronotum and faintly emarginate postero-externally. Flabellum with up to 6 long setae. Macrochaetotaxy 03-03-03-03-23, in which the macrosetae on terg. II (Fig. G) are three in number and much shorter than the secondary setae around them. Abdomen is well-sclerotized; tergites of the proximal half are beset with rounded, compressed setigerous punctation (Fig. H); lateral erect setae nearly completely reduced. Terg. VIII (Fig. I) broad, lightly emarginate in the middle of the posterior margin; among 6+6 major setae (always?) *a*-1 is dislocated near the posterior margin; *a*-2 is short and remote from stigma; microsculpture of median dorsum broadly imbricate (Fig. J). St. VIII (Fig. K) broadly rounded behind and with a row of short marginal setae. Tarsal formula 4, 5, 5, the basal segments of metatarsus subequally short; tibiae are with short macrosetae and numerous spinulae. Spermatheca (Fig. L) not coiled, but elongate, raised distally and without umbilicus in the specimen at hand. Length. 2.30 mm (head 0.32 mm long × 0.33 mm wide; pronotum 0.35 mm × 0.50 mm; elytra 0.27 mm × 0.47 mm).

Specimen examined. Singapore: Syntype of ♀, Woodland, Cameron coll. (BMNH).

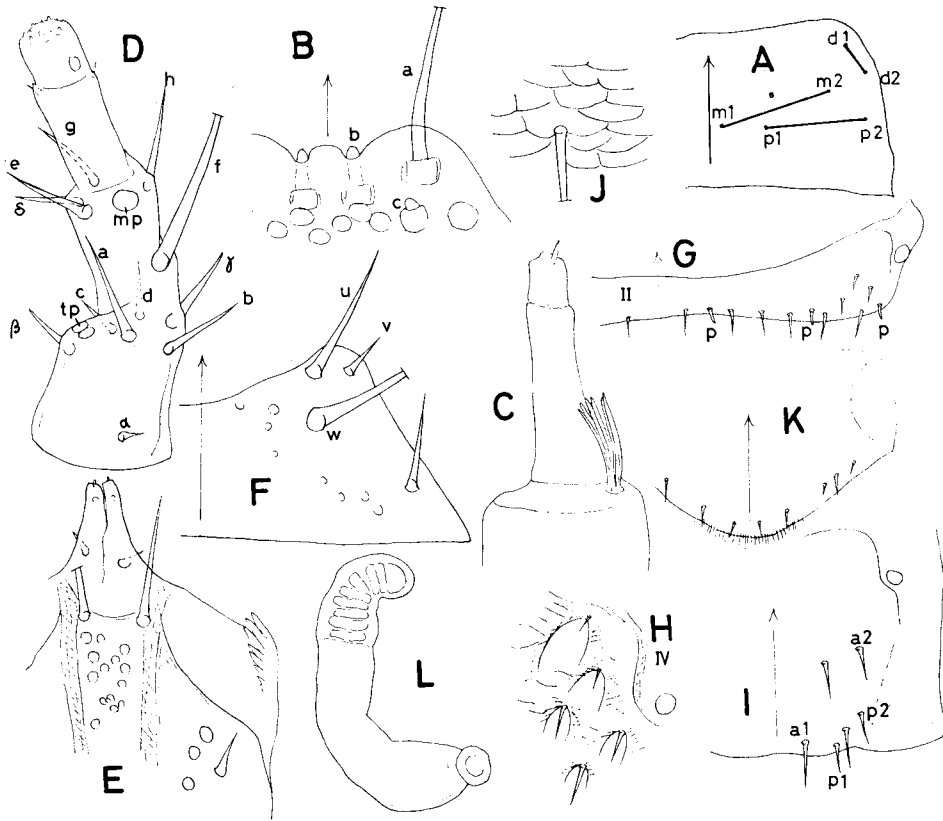


Fig. 6. *Tinotus carnivorus*, Syntype ♀. A. Labral chaetotaxy; B. Labral margin; C. Apical segments of maxillary palpus; D. Labial palpus; E. Glossa & prementum; F. Mentum; G. Terg. II; H. Punctation of terg. IV; I, J. Terg. VIII & its microsculpture; K. St. VIII; L. Spermatheca.

With its 5-segmented maxillary palpus, 4-segmented labial palpus, broad median area of prementum and also by the lateral area without pseudopores, the species belongs to *Tinotus* Sharp, 1883 without doubt and *Paratheta* Cameron becomes new synonym of it. In the gross feature of labium *T. carnivorus* (C.) is alike to *T. morion* (Grav.), but the glossa is much narrower.

#### Literature Cited

- Cameron, M., 1920. New species of Staphylinidae from Singapore, III. *Trans. Ent. Soc. London*, 1920: 212-284.
- 1936. Coleoptera, Staphylinidae, (in) *The Fauna of British India*, IV: 691 pp. London.
- Sawada, K., 1977. Studies on the genus *Atheta* Thomson and its allies. III. Japanese species described by the previous authors, *Contr. Biol. Lab. Kyoto Univ.*, 25 (2): 171-222.
- 1980. *Atheta* and its allies of Southeast Asia, I. Reexamination of some species from Borneo and Singapore, *Pacific Ins.*, 21 (4): 335-354.
- 1980. *Atheta* and its allies of Southeast Asia, II. Reexamination of the species mainly from Borneo, *Contr. Biol. Lab. Kyoto Univ.*, 26 (1): 23-66.
- 1984. Studies on the genus *Atheta* Thomson and its allies, V. Systematic studies on *Liogluta* series with notes of taxa established in C.G. Thomson, 1858 and G. Kraatz, 1859, *op. cit.*, 26 (3/4): 429-452.
- 1985. *Atheta* and its allies of Southeast Asia, IV. Ten oriental species described by M. Bernhauer and M. Cameron, *op. cit.*, 27 (1): 91-110.
- Sharp, D., 1883. *Biologia Centrali-Americana: Insecta, Coleoptera*, 1 (2): 145-312.
- Yosii, R. et Sawada, K., 1976. Studies on the genus *Atheta* Thomson and its allies, II. Diagnostic characters of genera and subgenera with description of representative species, *Contr. Biol. Lab. Kyoto Univ.*, 25 (1): 11-140.

#### Address of the Author:

(Mr) Kohei Sawada, D. Sc. 澤田高平  
Shukugawa Gakuin Junior College 夙川学院短期大学  
Koyoen, Nishinomiya, JAPAN 662 西宮市甲陽園