

## New Species of Aleocharinae from Japan, I (Staphylinidae; Coleoptera)

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**ABSTRACT** A new genus, a new subgenus, thirteen new species and a new subspecies belonging to the Aleocharinae are described and illustrated from Japan under the names of *Atheta* (*Paradota* n. subg.) *liberta* n. sp., *A. (Dimetrota) allocera ontakeana* n. subsp., *A. (D.) yamamotoi* n. sp., *A. (D.) nikkoensis* n. sp., *A. (Anopleta) okamotoi* n. sp., *A. (Notothecta) watanabei* n. sp., *A. (N.) incola* n. sp., *A. (N.) kashimaensis* n. sp., *A. (N.) effecta* n. sp., *A. (Badura) ririkoae* n. sp., *Liogluta libraria* n. sp., *Pelioptera babai* n. sp., *Aloconota bulbosa* n. sp., *Plesiochara fusca* n. g. et n. sp. A key is given for the genera and subgenera treated.

**KEY WORDS** *Atheta*-complex/ *Plesiochara*/ chaetotaxy/ taxonomy

For the studies of *Atheta*-complex, a reexamination of the type specimens of each species is indispensable. During the last ten years my efforts directed along this line of research mainly on the S. E. Asiatic specimens (Sawada, K., 1974, etc.) have brought out many interesting results. This revisional work is still going on.

Next to the studies on the S. E. Asiatic *Atheta*, my attention has long been arrested by the Aleocharine fauna of the Japan proper. As may be seen, the forests of subtropical, temperate and subboreal zones in Japan furnish me with desirable areas for this purpose of research, and repeated visits made by myself in the last two decades have afforded me a rich material of Aleocharinae in addition to those provided through the courtesy of my colleagues. It may be assumed that some of the species in those materials have a wide range of distribution from East Asia northward to Siberia. This assumption must of course be assured by subsequent researches. All the types used for the present work are to be deposited ultimately in the British Museum (Nat. Hist.), London.

Heartly thanks are directed to Prof. Saburo Nishimura and Prof. emer. Ryozyo Yoshii of the Kyoto University for their constant guidance and encouragements. For the publication of the thesis I owe much to the Biological Laboratory of the Kyoto University.

The genera and subgenera treated in this paper may be keyed out as follows:

1. Tarsal formula as 4, 5, 5 ..... 2  
     Tarsal formula as 5, 5, 5. Labial palpus spiniform ..... *Plesiochara* n. g.
2. Lateral area of prementum without pseudopores ..... 7  
     Lateral area of prementum with pseudopores ..... 3
3. Macrochaetotaxy of tergite II as 02 ..... 4  
     Macrochaetotaxy of tergite II as 01 ..... 5

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|--|--------------------------|
| 4. Abdominal tergite VIII with 5 + 5 major setae .....                   | <i>Anopleta</i>          |
| Abdominal tergite VIII with 4 + 4 major setae .....                      | <i>Dimetrota</i>         |
| 5. Abdominal tergite III without anterior macrosetae .....               | <i>Paradota</i> n. subg. |
| Abdominal tergite III with anterior macrosetae .....                     | 6                        |
| 6. Secondary setae of labrum usually 1 + 1 .....                         | <i>Badura</i>            |
| Secondary setae of labrum more than 2 + 2 .....                          | <i>Notothecta</i>        |
| 7. <i>a</i> -bsensilla of labral margin setaceous .....                  | <i>Liogluta</i>          |
| <i>a</i> -bsensilla of labral margin reduced to a companulate form ..... | 8                        |
| 8. Mesosternal process acute at apex .....                               | <i>Aloconota</i>         |
| Mesosternal process truncate at apex .....                               | <i>Pelioptera</i>        |

### ***Paradota* n. subg.**

The new subgenus is characteristic by the prolonged lateral lobe of aedeagus, which reminds us of the member of *Atheta* (*Microdota*) *spiniventris* Bh.-group, but in fairly reduced *a*-sensilla of labral margin (Fig. B) and in the median area of prementum with pseudopores (Fig. D) it is easily distinguishable.

Type species: *Atheta liberta* n. sp.

### ***Atheta* (*Paradota*) *liberta* n. sp.**

Fig. 1

Male. Brown in ground colour and shining; head is nearly black; abdomen is a little bright in the basal segments; antenna with a little reddish basal segments; legs paler. Body weakly sclerotized and narrowly elongate. Head is rotundate in outline, shallowly foveolate in the middle and very finely, densely punctured throughout. Eyes large, a little longer than the post-gena from above. Antenna is delicate and obsolete-ly dilated towards the extremity; segment III much shorter than II and cup-shaped as in the case of *A. (Microdota)*; IV about as long as wide; X moderately transverse; XI short. Cervical carina is diverged. Labrum (Fig. A) is broadly emarginate in front; medial row of setae is horizontal in arrangement and *m2* is distant from distal row; *p1* is clearly posterior to the level of *p2*; 2 + 2 secondary setae are present. From labral margin (Fig. B) *a*-sensilla is characteristically reduced to a minute dens, on the contrary *b* is well-developed and obtusely ending; *c* is like *b*. Mandibles are narrowly elongate and briefly hooked at apices; the right one has a fine molar. Maxillary palpus is short and stout; segment II curved; III strongly dilated distally and intensively pigmented; IV relatively short. Galea is narrow and with a slender distal lobe. Lacinia is abruptly dilated in the inner margin; distal comb consisting of six similarly short teeth and two longer isolated teeth. Labial palpus (Fig. C) is short; segment III is apparently longer than I and fairly dilated distally; *γ* is just behind *b*; *a* is on the same level with *b*; *e* is on the level of *mp*. Glossa (Fig. D) is short, divided from the middle to two diverging arms; paired basal pores are absent (always?). Paraglossa is fairly prolonged. Median area of prementum is narrow, constricted in the middle and

with a few pseudopores anteriorly; in lateral area 2 real, 1 setal and several small pseudopores. Mentum (Fig. E) is fairly emarginate in front; *v* is long in relation to *u*. Pronotum is evenly convex above and without depression in the middle; the posterior corner is well-defined; the secondary setae are very short and dense, those along the midline are directed anteriorly; lateral erect setae are short but rigid. Mesosternum is briefly pointed behind. Metasternum markedly longer than broad. Elytra

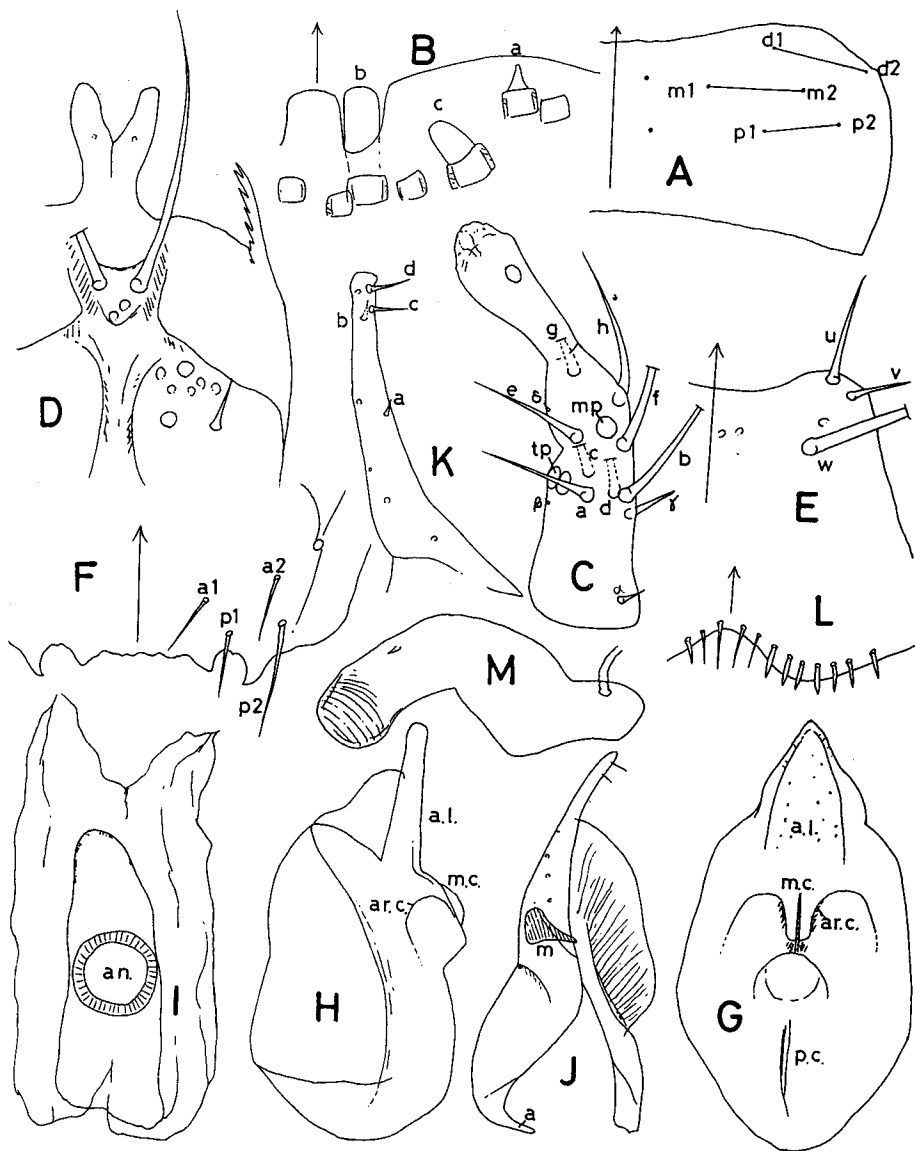


Fig. 1. *Atheta (Paradota) liberta* n. subg., n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. Mentum; E. ♂ terg. VIII; G, H. Median lobe of aedeagus (ventr. & lat. views); I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. ♀ stern. VIII; M. Spermatheca.

slightly emarginate postero-externally and a little more roughly punctured than the pronotum. Flabellum with only one long seta. Macrochaetotaxy as 10 - 02 - 12 - 12 - 13 - 34. Abdomen is nearly glabrous leaving a few punctures. The posterior margin of tergite VIII (Fig. F) is truncate, indistinctly crenulated and on each side with an incurve, acute dens, that is separated from the posterior margin by a large rounded incision. Among 4 + 4 major setae *a1* is clearly posterior to the level of *a2*. All tibiae have short fine macrosetae. Tarsal formula as 4, 5, 5 in which metatarsus has segments I to IV subequally short. Empodium invisible.

Median lobe of aedeagus (Fig. G, H) is 0.22 mm long; ventrally apical lobe is short and triangularly pointed at apex; costae *ar. c.* are separating and recurved distally; *m. c.* is entire; *p. c.* is long; in lateral view apical lobe is straight in its full length. Copulatory piece (Fig. I) is elongate, subparallel and broadly rounded apically; annellus is unusually large and is medially situated; suspensoria are mostly membranous and not firmly sclerotized at all. Lateral lobe (Fig. J) is narrowly elongate; middle apodeme is nearly triangular in outline; velum is well-developed; medial segment curved and ending in a sharply hooked apex (*a* in Fig. J). Distal segment (Fig. K) prolonged, gradually narrowed distally; *a, b* are much shorter than *c, d*; *a* is medial and *b* is preapical in position.

Length. ca. 1.90 mm (head 0.23 mm long x 0.32 mm wide; pronotum 0.27 mm x 0.36 mm; elytra 0.28 mm 0.45 mm).

Female. Sternite VIII (Fig. L) is deeply emarginate in the middle of the posterior margin, where there is a row of similarly short marginal setae. Spermatheca (Fig. M) is stout and twisted; bursa is not discriminated from the duct and no umbilicus within.

Material examined. Holo-(♂), allo- and 5 paratypes, Mt. Fuji nr. Lake Kawaguchi, (1000 m alt.), Yamanashi Pref., 22 VIII, 1986, K. Sawada leg.

Seta-*m2* of labrum clearly distant from distal row of setae, and fairly dilated segment III of labial palpus may be the features peculiar to the present species.

***Atheta (Notothecta) effecta* n. sp.**

Fig. 2

Male. Ground colour is nearly black and strongly shining; head, pronotum and abdomen are uniformly pigmented, whereas elytra are tinged with brown; antenna with somewhat brighter basal segments; legs brownish. Body is gently convex above and with large abdomen. Head is rather small for the corpus, nearly glabrous and without depression in the middle. Eyes are small, with a long rounded post-gena. Antenna indistinctly dilated towards the extremity; segment II a little longer than III; IV to VI longer than wide; X weakly wider than long. Labrum (Fig. A) is not emarginate in front; *m-2* is on the distal row of setae; proximal row is clearly shorter than the medial one and remote from it; 3 + 3 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is long and converging, while *b* is very short and broad. Mandibles are sharply hooked at apices; the right one with a pointed toothlet. Segment

II of maxillary palpus is slender and slightly shorter than III; IV short in relation to

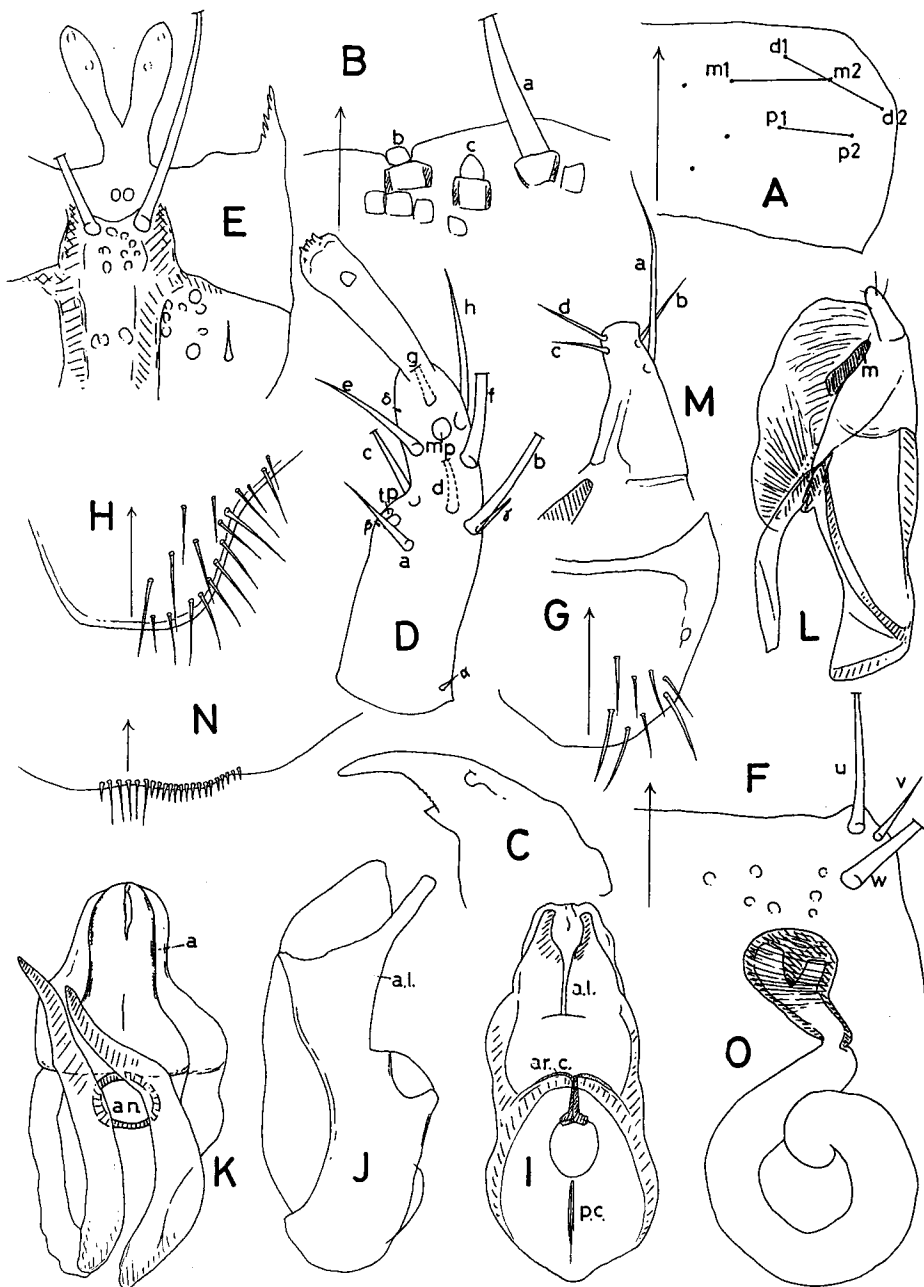


Fig. 2. *Atheta (Notothecta) effecta* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Labial palpus; E. Glossa & prementum; F. Mentum; G. ♂ terg. VIII; H. ♂ stern. VIII; I, J. Median lobe of aedeagus; K. Copulatory piece of aedeagus & suspensoria; L, M. Lateral lobe & its distal segment; N. ♀ stern. VIII; O. Spermatheca.

III. Galea with a large distal lobe whose cilia are long and conspicuous. Lacinia is distinctly dilated in the inner margin and with two well-defined isolated teeth. From labial palpus (Fig. D) segment III is as long as I and fairly constricted basally;  $\beta$  is near by  $tp$ ;  $\gamma$  is very close to  $b$ ;  $a$  is posterior to the level of  $b$ . Glossa (Fig. E) is divided from near base into two long, diverging arms, and with paired basal pores placing close together. In prementum median area is fairly broad, parallel and with some irregular pseudopores; in lateral area there are two real, one setal and several small pseudopores. Mentum (Fig. F) is actually not emarginate in front; the lateral corner is angulately projecting;  $v$  is very close to lateral of  $u$ . Pronotum is apparently broader than long and weakly narrowed behind; the surface is nearly glabrous like the head, obsoletely depressed in the middle and with a shallow fovea before the base; lateral erect setae are short. Elytra are broad, fairly emarginate behind, and much more roughly punctured than in the pronotum.

Tergite VIII (Fig. G) is rather narrow and rounded at apex; there are some 8 + 8 short and long major setae. Sternite VIII (Fig. H) is fairly produced behind and with a broadly truncate apex, the margin is fringed with long, conspicuous macrosetae. Tarsal formula as 4, 5, 5 in which the metatarsus bears segment I apparently longer than II; I to IV are gradually decreasing in length; V about as long as IV and III together. Empodium is well-developed. Pro- and mesotibiae spinulate; meso- and metatibiae have very short macrosetae. Macrochaetotaxy as 01 - 13 (or 23) - 33 - 33 - 33 - 234. Abdomen is dilated in the middle; segments III to V depressed basally and rather coarsely, not very closely punctured; lateral erect setae are numerous and conspicuous.

Median lobe of aedeagus (Fig. I, J) is 0.22 mm long; in ventral view apical lobe is characteristically bifurcate into two lobes which are distally dehiscent and basally converged together; laterally apical lobe is weakly decurved distally. Costae *ar. c.* are entirely coalescent; *p. c.* is long. Copulatory piece (Fig. K) is elongate, quite obtuse at apex and lightly constricted before middle; suspensoria are well-developed and spiniform; there is a broad ventral plate ( $a$  in Fig. K) equal to the corpus in length. Lateral lobe (Fig. L) is narrow as a whole;  $m$  is narrowly elongate. Distal segment (Fig. M) is elongate and distinctly dilated basally;  $a$  is much longer than  $b$ ;  $c$ ,  $d$  are subequal to  $b$  in length.

Length. c. 3.70 mm (head 0.50 mm long x 0.56 mm wide; pronotum 0.57 mm x 0.70 mm; elytra 0.57 mm x 0.93 mm).

Female. Sternite VIII (Fig. N) is subtruncate behind; the posterior margin in the middle is slightly emarginate and there is a row of long and very short marginal setae. Spermatheca (Fig. O) is stout, largely coiled; bursa is large and with a stout umbilicus.

Material examined. Holo-(♂) and allotypes, Mt. Fuji (2, 300 m alt.), Yamanashi Pref., 30 VIII, 1982, K. Sawada leg.

As the tergite IX is not prolonged behind and as the male genitalia is with well-developed suspensoria the species is to be included in *Notothecta* thomson of *Atheta*.

In the chaetal arrangement of labial palpus (Fig. D) and in the spiniform suspensoria of aedeagus the new species is similar to the European *A. (N.) pallidicornis* (Th.). The median area of prementum is, however, very broad in the Japanese species, and the spermatheca (Fig. O) is strikingly different. Deeply divided, long arms of glossa and the multiplicity of the abdominal macrosetae are the features characteristic to the present species.

***Atheta (Notothecta) incola* n. sp.**      Fig. 3

Male. Black to dark brown in ground colour and shining; head nearly black; pronotum and elytra dark brown; abdomen with a little brighter basal segment; antenna is evenly dark brown; legs slightly paler. Body is narrow. Head is rotundate and moderately large when compared to the pronotum; the surface is smooth leaving a few pubescence. Eyes large and fairly convex beyond the head contour. Antenna is less distinctly dilated distally; segment III a little shorter than II; IV broader than long; V more abruptly enlarged than IV; X fairly transverse. Labrum (Fig. A) is modified; the anterior margin is strikingly emarginate in the middle and angularly produced bilaterally; among 6 + 6 major setae *p1* is very close to medial row of setae, consequently proximal row is strongly oblique in arrangement; there are ca. 8 + 8 secondary setae. *a*-sensilla of labral margin (Fig. B) is setaceous, but strongly reduced; *b* is nearly rectangular, whereas *c* is ovate. Right mandible (Fig. C) is briefly pointed at apex and with a fine molar. In maxillary palpus segment II is a little shorter than III; IV is long compared to III. Galea is with a large distal lobe whose cilia are very short and dense. Lacinia is strongly dilated in the inner margin; distal comb consisting of similarly short teeth. From labial palpus (Fig. D) segment III is much shorter than I; *γ* is fairly separated from *b*, also *δ* is far remote from *tp*; *e* is posterior to *mp*, consequently it is very close to *f*. Glossa (Fig. E) is characteristically elongate and at apex shortly bifurcate to two oblong arms. Median area of prementum is very narrow and with no pseudopores; in lateral area 2 real, 1 setal and several small pseudopores. Mentum (Fig. F) is deeply emarginate in front; *v* is long compared to *u*. Pronotum is distinctly transverse and subparallel, gently convex above and with an obscure median depression before the base; secondary setae are fine, long and sparse, those along the midline are directed posteriorly; lateral erect setae are moderately long. Mesosternum is depressed above and its process is narrowly truncate at apex, thus the mesocoxae are somewhat distant to each other. Elytra are broad, fairly emarginate behind; the surface is much more roughly punctured than the pronotum. Flabellum with some 5 long and short setae. Macrochaetotaxy as 01 - 12 - 12 - 13 - 13 - 34. Abdomen is broad, nearly glabrous leaving a few fine punctures; lateral erect setae are conspicuous. Tergite VIII (Fig. G) is not modified; among 4 + 4 major setae the posterior ones are well inside the posterior margin; the microsculpture is imbricate and very superficial. Legs short; meso- and metatibiae have a short rigid

macroseta. Tarsal formula as 4, 5, 5 in which metatarsus is with segment I apparently shorter than II; V longer than two preceding together. Each empodium is well-developed.

Median lobe of aedeagus (Fig. H, I) is 0.33 mm long; in ventral view the basal part is strongly dilated; apical lobe is constricted basally and briefly pointed at apex; costae

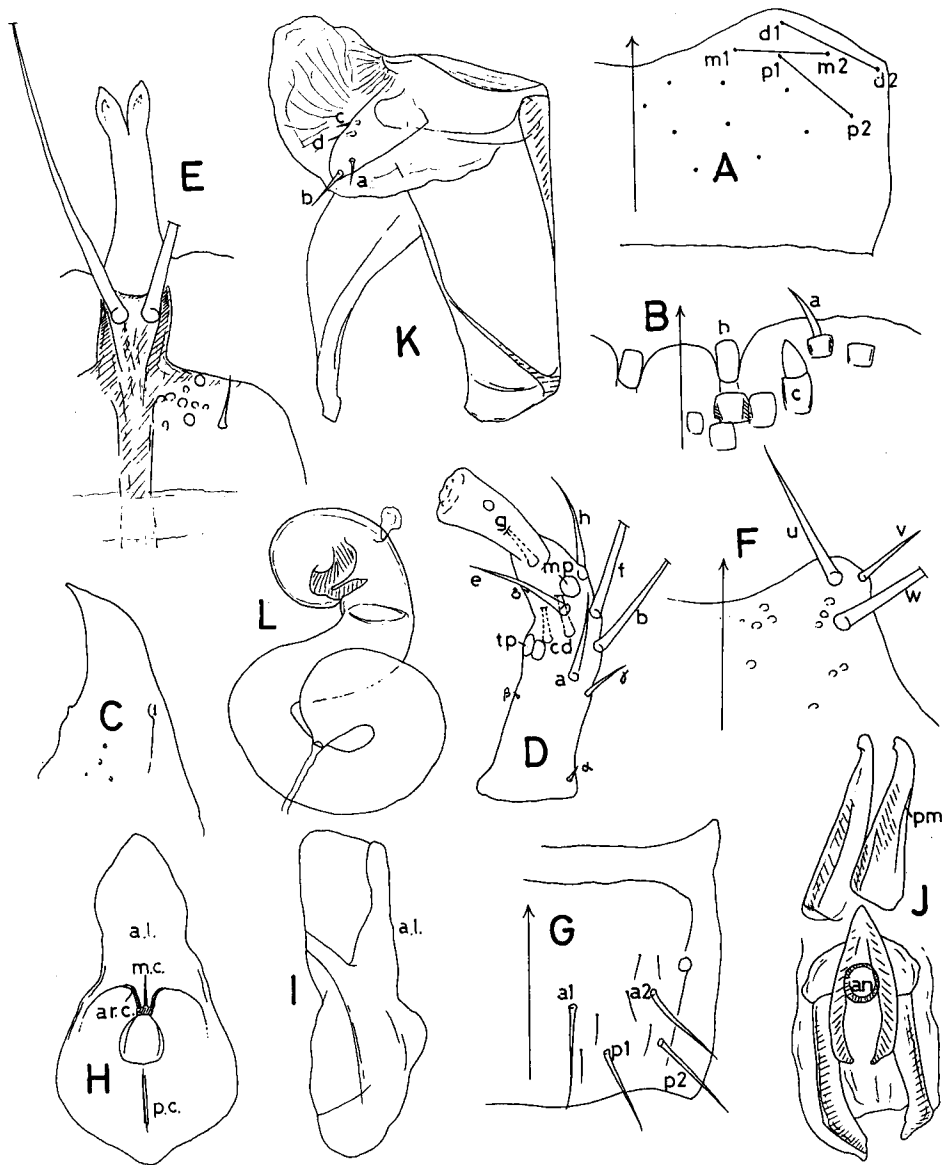


Fig. 3. *Atheta (Notothecta) incola* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Labial palpus; E. Glossa & prementum; G. ♀ terg. VII; H, I. Median lobe of aedeagus; J. Copulatory piece & suspensoria; K. Lateral lobe; L. Spermatheca.



*ar. c.* separating to each other and recurved distally; *m. c.* is short; laterally apical lobe is nearly straight. Copulatory piece (Fig. J) is narrowly elongate and briefly pointed ending. Suspensoria are narrowly elongate and incurved before the posterior end. Anterior to the corpus there are long, tapering lobes which are to be designated as the paramedian apophyses (*pm* in Fig. J). Lateral lobe (Fig. K) is fairly broad; *a* is very short; *b* is much longer than *a*; *c*, *d* are slightly posterior to the level of *a*.

Length. ca. 2.60 mm (head 0.30 mm long x 0.41 mm wide; pronotum 0.38 mm x 0.46 mm; elytra 0.38 mm x 0.60 mm).

Female. Sternite VIII is broadly rounded behind and with a row of long and short marginal setae. Spermatheca (Fig. L) is peculiar in having unusually broad, coiled duct; bursa is entirely rounded bearing a thickening within.

Material examined. Holo-(♂), allo- and 1 paratypes; Kiyotaki (600 m alt.), Nikko, Tochigi Pref., 2 VIII 1984, K. Sawada leg.

The position of this species is dubious because of the glossa which is peculiarly elongate, and the narrow median area of prementum is destitute of pseudopores. More material is needed.

***Atheta (Notothecta) kashimaensis* n. sp.**

Fig. 4

Male. Ground colour is brown and shining; head is more intensively pigmented; pronotum and elytra are tinged with red; antenna uniformly brown; abdomen is nearly black; legs a little paler. Body is broad and subdepressed above. Head is broader than long, obsoletely depressed above and very finely coriaceous throughout. Labrum (Fig. A) is broadly sinuate in front: *p1* is clearly anterior to the level of *p2*, thus proximal row is subparallel to distal one; 2 + 2 secondary setae are present. In labral margin (Fig. B) *b* is reniform; *c* narrowly elongate. Antenna is relatively short; segment I is thick; II much shorter than I; III subequal to II in length; IV to X are gradually increasing in width; X fairly transverse. Maxillary palpus is short as a whole; segment II curved and dilated; III thick; IV relatively long. Distal lobe of galea is densely beset with long and short cilia. Lacinia is gradually dilated in the inner margin and with two isolated teeth much shorter than others. Mandibles are sickle-like; the right one (Fig. C) with a stout molar. From labial palpus (Fig. D) segment III is apparently shorter than I; *γ* is anterior to *b*; *a* is on the level of *tp*; *e* is on the same level with *mp*. Glossa (Fig. E) is short and divided from middle into two broad diverging arms. Median area of prementum is moderately broad and with some 12 pseudopores; in lateral area there are 2 real, 1 setal plus many pseudopores. Mentum (fig. F) is slightly emarginate in front; *v* is on the corner and long; *u* is lateral to *v*. Pronotum is broadly flattened in the middle and becoming depressed towards the base; the lateral margin is invisibly sinuate behind the middle and with short, rigid erect setae; the surface is similar to the head. Elytra are broad, faintly emarginate

behind and similarly roughened to the pronotum. Flabellum with only 3 long setae.

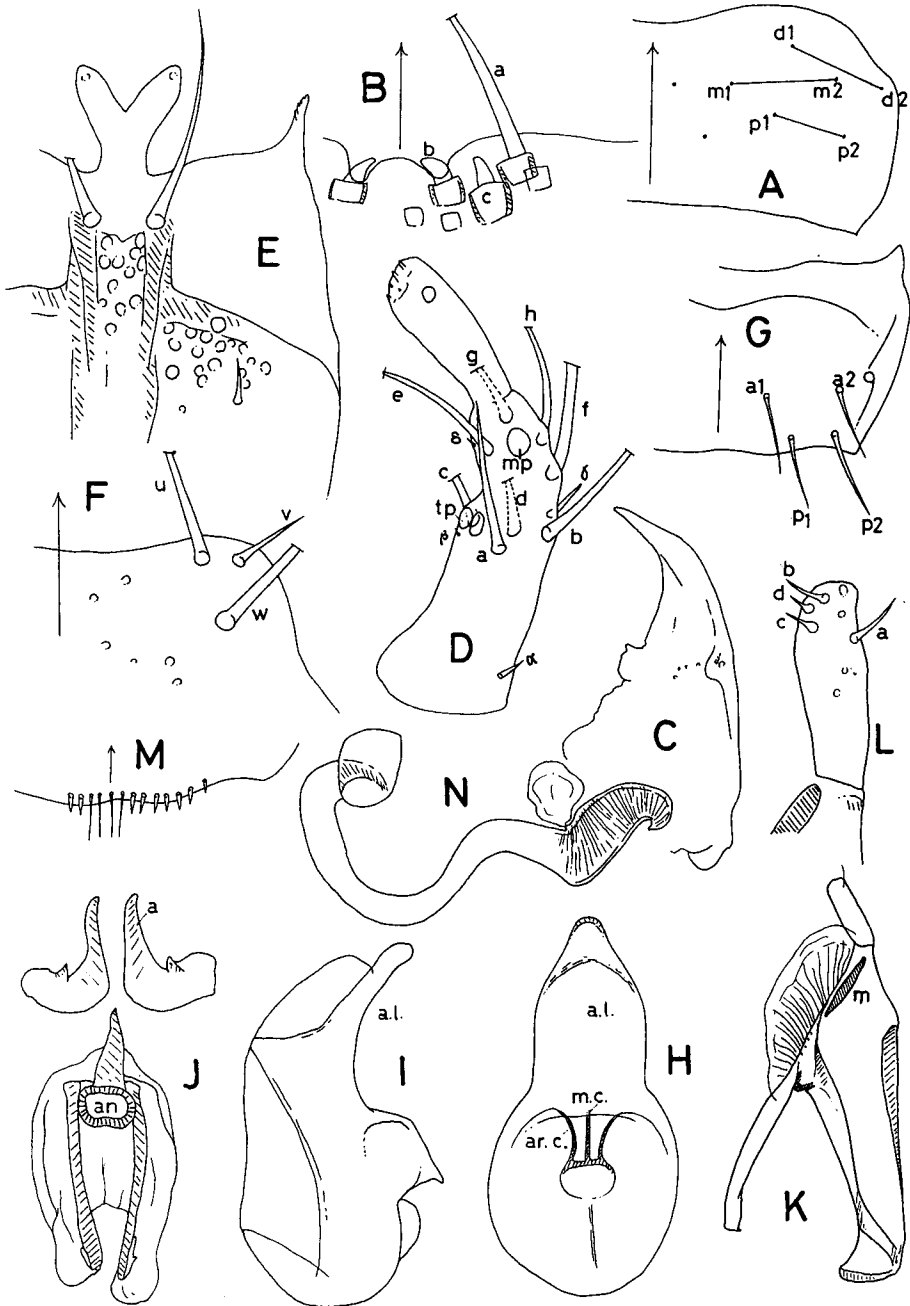


Fig. 4. *Atheta (Notothecta) kashimaensis* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Labial palpus; E. Glossa & prementum; F. Mentum; G. ♀ stern. VIII; H, I. Median lobe of aedeagus; J. Copulatory piece & suspensoria; K, L. Lateral lobe & its distal segment; M. ♀ stern. VIII; N. Spermatheca.

Macrochaetotaxy as 01-12-22-22-23-33. Abdomen is finally punctured and with inconspicuous lateral erect setae. Tergite VIII (Fig. G) is not modified; among 4 + 4 major setae *a2* is near stigma; the microsculpture is superficial imbricate pattern. All tibiae have short macrosetae. Metatarsus with subequally short basal segments. Median lobe of aedeagus (Fig. H, I) is 0.27 mm long; in ventral view apical lobe is parallel and then narrowed to form an obtuse apex; costae *ar. c.* broadly separating; *m. c.* is entire; laterally apical lobe is uniformly bent down in full length. Copulatory piece (Fig. J) is subulate anteriorly and with long suspensoria; paramedian apophyses (*a* in Fig. J) are abruptly curved and pointed at apices. Lateral lobe (Fig. K) is triangularly formed; *m* is angustate and fusiform; velum is moderate in size. Distal segment is oblong; *a* is short and placed at anterior third; *b* is shorter and very close to *d*. Length. ca. 2.40 mm (head 0.22 mm long x 0.38 mm wide; pronotum 0.32 mm x 0.41 mm; elytra 0.40 mm x 0.60 mm).

Female. Sternite VIII is broadly subtruncate behind and lightly emarginate in the middle; the margin fringed with a row of some 4 long, and several very short, peg-like marginal setae. Spermatheca (Fig. N) is long, fairly twisted and with an enlarged end; bursa is elongate, and forming an uncinat apex.

Material examined. Holo- (♂), allo- and 1 paratypes; Kashima, Ishikawa Pref., 8 VII, 1987, K. sawada leg.

As the glossa is short and as the mentum is truncate in front, the species is similar to *A. (N.) flavipes* Grav., 1806 of Europe, but differs in the unmodified tergite VIII of the male and in the different genitalia.

The species is very characteristic in that the labial palpus is with shorter sement III, and the labrum has only 2 + 2 secondary setae.

***Atheta (Notothecta) watanabei* n. sp.**

Fig. 5

Male. Reddish brown in ground colour and strongly shining; head is nearly black, whereas pronotum is slightly bright; elytra are infusate; abdomen is with reddish basal segments; antenna is brown; legs paler. Body is rather broad and subparallel. Head is orbicular in outline and nearly glabrous leaving scarcely perceptible microsculpture. Eyes large when compared to the post-gena. Antenna is slightly dilated towards the extremity; segment I longer than II; III is subequal to II in length; IV longer than wide; V about as long as wide; X considerably wider than long. In labrum (Fig. A) proximal row of setae nearly horizontal and subparallel to the medial row; 2 + 2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is converging; *b* is broad and truncate at apex; *c* is thick. Maxillary palpus is 4-segmented; segment II about as long as III; IV long. Distal lobe of galea is large and with long, conspicuous cilia throughout. Lacinia is abruptly dilated in the inner margin and with well-defined, isolated teeth. From labial palpus (Fig. C) *γ* is just anterior to *mp*. Glossa (Fig. D) is fairly elongate and divided from anterior third into two short,

obtuse arms; basal paired pores are close together. Median area of prementum is broad and with some pseudopores; in lateral area one real pore is near the margin of median area. Mentum (fig. E) is fairly emarginate in front; *v* is short and posterior to

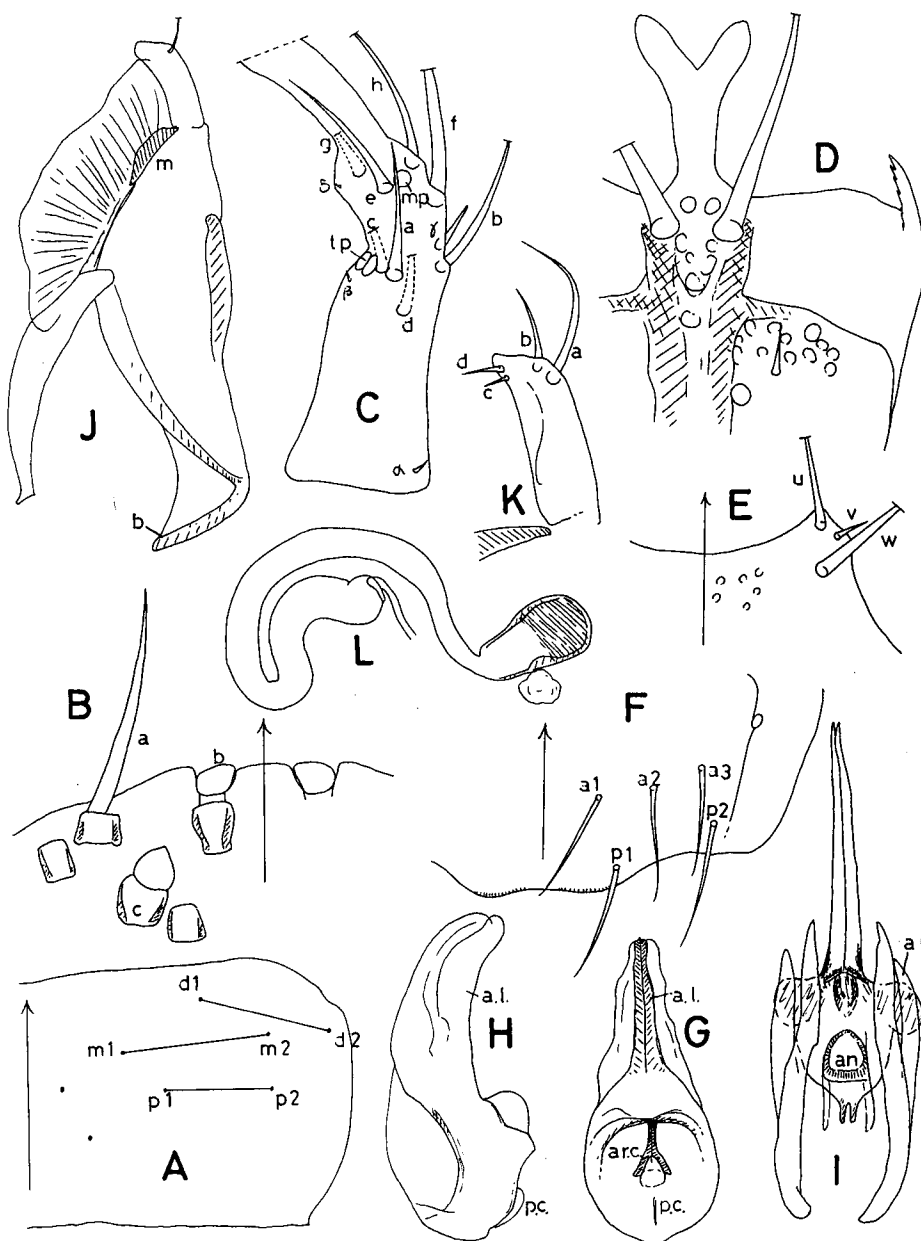


Fig. 5. *Atheta (Notothecta) watanabei* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. Mentum; F. ♂ terg. VIII; G. H. Median lobe of aedeagus; I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. Spermatheca.

u. Pronotum is evenly convex above, neither sulcate nor depressed in the middle and weakly narrowed behind; lateral erect setae are short and rigid; the surface is similar to the head and with some fine punctures on the disc. Mesosternal process is short, acute at apex and distant from the apex of metasternal process. Elytra are broad, faintly emarginate behind and apparently much more roughly sculptured than in the pronotum. Macrochaetotaxy as 01-12-23-23-334. Abdomen is nearly glabrous; lateral erect setae are rather long. Tergite VIII (Fig. F) is very broadly sinuate behind; there are 5 + 5 major setae. All tibiae have very short macrosetae. Metatarsus bears segments I to IV subequally short and with a long empodium.

Median lobe of aedeagus (Fig. G, H) is 0.48 mm long; the basal part is nearly spherical, but apical lobe is narrowly spiniform and with a median suture in full length; in lateral view apical lobe is evenly decurved and with a high costae of *ar. c.*, which are entirely approximate in full length. Copulatory piece (Fig. I) is modified in having a long spiniform process, and in the basal part it is auriculate. There are two pairs of long, pointed suspensoria (*a* in Fig. I). Lateral lobe (Fig. J) is broad in the middle; *m* is pointed at both ends; the inner corner of median segment is fairly produced (*b* in Fig. J); distal segment (Fig. K) is elongate and ending in an inwardly projecting apex; *a* is much longer than *b*; *c*, *d* are short as usual.

Length. c. 3.0 mm (head 0.38 mm long x 0.44 mm wide; pronotum 0.44 mm x 0.54 mm; elytra 0.44 mm x 0.74 mm).

Female. Sternite VIII is merely rounded behind and with a row of more than 10 long and short marginal setae. Spermatheca (Fig. L) is long, largely contorted and re-curved distally; bursa is oblong and with no umbilicus.

Material examined. Holo-(♂), all- and 2 paratypes; Nara Park, Nara Pref., I IV, 1977, H. Watanabe leg.

As the macrochaetal arrangement is 01-12-23-..., and as the prementum with pseudopores the species must be included in *Notothecta* Thoms. of *Atheta*. In the gross features of labium and genitalia the species is a near relative of our *A. (N.) reitteriana* Bh., 1938, but distinguishable by the labrum having much longer rows of setae with only 2 + 2 secondary setae instead of 10 + 10 in the cited species, and by the different genitalia of both sexes.

The species is dedicated to Prof. H. Watanabe of the Kyoto University.

***Atheta (Badura) ririkoae* n. sp. Fig. 6**

Male. Dark brown in ground colour and opaque by the presence of dense coriaceous sculpture; head nearly black; antenna and legs are somewhat paler. Body is subdepressed above. Head is oblong and with an obsolete fovea in the middle. Eyes are small and fairly convex beyond the head contour; the surface is provided with dense punctures giving it a subrugose appearance. Antenna slightly dilated distally; segment II about as long as I; IV longer than wide; V, IV about as long as wide; X a

little broader than long. Labrum (Fig. A) is peculiar in having the evenly rounded anterior margin; among six major setae *m2* is crossing over medial row of setae; *p1* is anterior to the level of *d2*, thus proximal row is near distal row and subparallel to it; there is only 1 + 1 secondary setae. From labral margin (Fig. B) *a* is setaceous, whereas *b* is very short and truncate at apex; *c* is strongly reduced. Maxillary palpus is 4-segmented and intensively pigmented; segment II much shorter than III, the

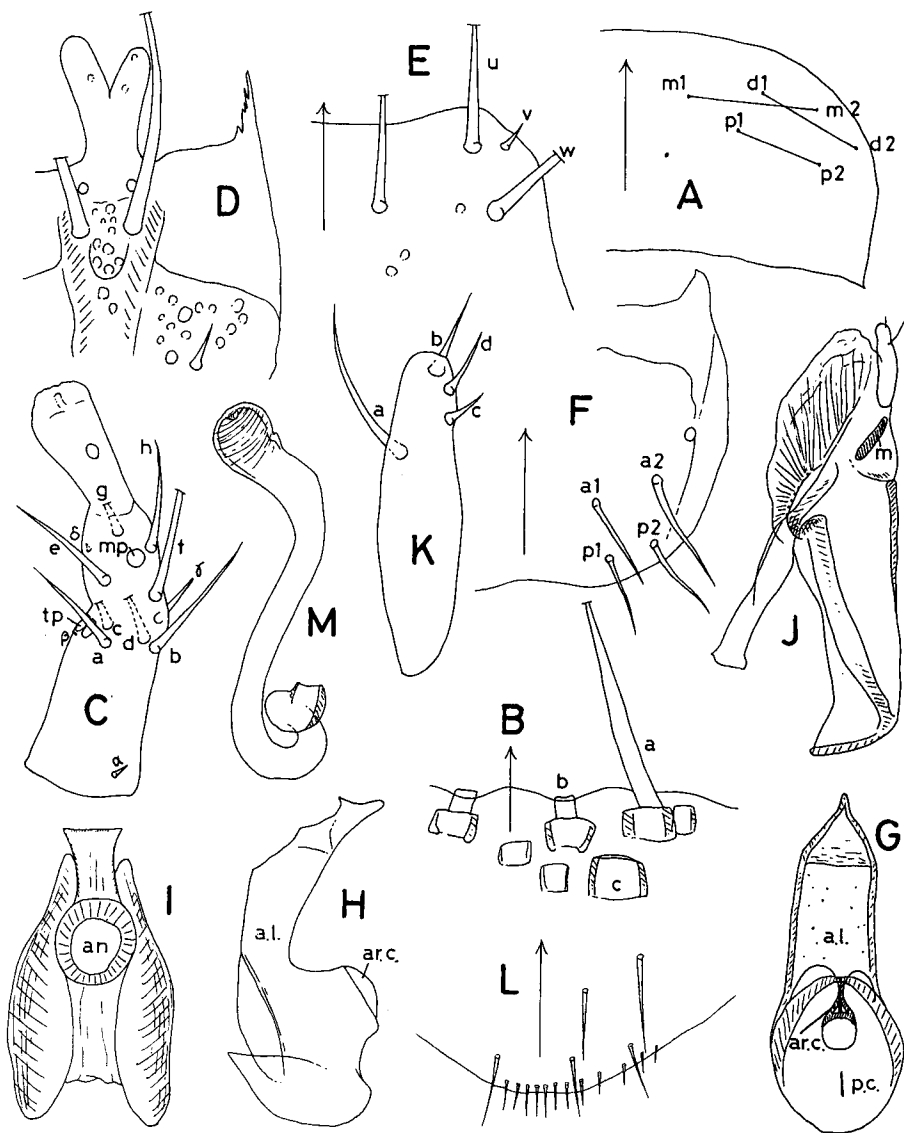


Fig. 6. *Atheta (Badura) ririkoae* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. Mentum; F. ♂ terg. VII; G, H. Median lobe of aedeagus; I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. ♀ stern. VIII; M. Spermatheca.

latter segment is only gradually dilated distally; IV very short. Galea is with a large distal lobe which is furnished with short, dense cilia all over. Lacinia is abruptly dilated in the masticatory margin and with two longer isolated teeth. In labial palpus (Fig. C)  $\gamma$  is between  $b$  and  $f$ ; the former seta is on the same level with  $a$ ;  $e$  is anterior to  $f$ ; segment III is apparently shorter than I. Glossa (Fig. D) is divided from middle into two obtuse arms; basal pores are distant from one another. Median area of prementum is broad, narrowed behind and with coarse pseudopores; in lateral area two real, one setal pores are confined to the middle area and with more than 10 pseudopores. Mentum (Fig. E) is gently emarginate in front;  $v$  is strongly reduced and lateral to  $u$ . Pronotum is similarly coriaceous to the head, but devoid of any trace of coarse punctures; in the middle broadly, finely depressed, the depression is becoming deeper to the base; secondary setae along the midline are directed anteriorly; lateral erect setae are short. Mesosternal process is acuminate and fully reaching the middle of the mesocoxal cavity; metasternum with a few coarse, setigerous punctures; Elytra are faintly emarginate behind and a little more roughly sculptured than in the pronotum. Flabellum with ca. 8 long and short setae. Macrochaetotaxy as 01 - 12 - 13 - 13 - 23 - 33. Abdomen is similarly coriaceous to others and with inconspicuous lateral erect setae. Tergite VIII (Fig. F) is broadly emarginate behind; among 4 + 4 major setae  $a_2$  is distant from stigma; microsculpture is imbricate in pattern. all tibiae have very short macrosetae. Tarsal formula as 4, 5, 5 in which metatarsus possesses segment I a little longer than II; V about as long as three preceding together.

Median lobe of aedeagus (Fig. G, H) is 0.26 mm long; ventrally apical lobe is narrowly elongate, and then abruptly tapering forming a projecting apex; costae *ar. c.* are mostly approximate and recurved distally; in lateral view apical lobe is evenly and rather abruptly decurved; the projecting apex with a fine spine dorsally. Copulatory piece (Fig. I) is fairly constricted before the apex, thus the apex is broadly truncate; annellus is unusually large; suspensoria are broad and extending near the apex of the corpus. Lateral lobe (Fig. J) is narrowly elongate;  $m$  is angustate; velum is normally developed. Distal segment (Fig. K) is narrowly ovate;  $a$  is long and located at anterior third of the segment;  $b$  is at apex and much shorter than  $a$ ;  $c$ ,  $d$ . are long in relation to  $b$ .

Length. ca. 2.90 mm (head 0.29 mm long x 0.38 mm wide; pronotum 0.34 mm x 0.49 mm; elytra 0.38 mm x 0.58 mm).

Female. Sternite VIII (Fig. L) is short, merely rounded behind and with a row of similarly short marginal setae. Spermatheca (Fig. M) is long, lightly curved and briefly coiled at apex, where there is a short reflection; bursa is short, rounded and with a fine umbilicus.

Material examined. Helo- (♂), all- and 1 paratypes; Gamou beach, Niigata Pref., 1 X, 1985, K. Kusakari leg., 1 ♀, mouth of Arakawa Riv., Niigata Pref., 20 X, 1985, R. Kusakari leg.

In some crucial characters the species is similar to the maritime *A. (B.) tokiokai* m., but differs in the posteriorly dislocated *a*, *e*-setae of labial palpus, and in the different distal segment of lateral lobe. Besides, the integument is quite dull on account of the presence of distinctly coriaceous microsculpture in the present species.

The species is dedicated to Mrs. Ririko Kusakari.

***Atheta (Dimetrota) allocera ontakeana* n. ssp.**

Fig. 7

Male. Ground colour is dark brown and subopaque; head is nearly black; pronotum is a little brighter than others; elytra slightly tinged with red; abdomen is becoming darker towards the extremity; antenna evenly blackish; legs paler. Body is robust. Head is orbicular in outline, weakly convex above and with very fine granules and distinct microsculpture throughout. Eyes small, not convex from the head contour. antenna is long and slightly dilated distally; segment I robust in relation to II; III subequal to II in length; IV longer than wide; V about as long as wide; X a little broader than long. From labrum (Fig. A) *m2* is very close to distal row of setae; proximal row is nearly parallel to the distal one; 2 + 2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is long and converging as usual; *b* is nearly oval; *c* is more or less pointed at apex. Mandibles are slender and fairly hooked at apices; the right one with a very fine molar. Maxillary palpus is 4-segmented; segment II robust; III about as long as II; IV is long in relation to III. Galea with a large distal lobe. Lacinia is abruptly dilated in the middle of the masticatory margin and with two well-defined isolated teeth. In labial palpus (Fig. C) segment III is slender, much longer than I;  $\beta$  is remote from *tp*, whereas  $\gamma$  is concealed by *b*; *a* is on the same level with *b*; *mp* is close to *h*. Glossa (Fig. D) is fairly elongate and divided from anterior third into two very short arms. Median area of prementum is broad and with several large pseudopores; those on lateral area are very small. Mentum (Fig. E) is deeply emarginate in front; *v* is short and very close to *u* in position. Pronotum fairly transverse, gently depressed above and with a shallow fovea before the base; there are distinct microsculpture and granules all over; lateral erect setae are long and conspicuous. Macrochaetotaxy as 02-13-13-13-13-34. Elytra are apparently large and not emarginate behind. Abdomen is finely, indistinctly punctured; lateral erect setae short, but rigid. The posterior margin of tergite VIII (Fig. F) is broadly truncate and irregularly crenulate. Meso- and metatibiae have long macrosetae in the middle. Tarsal formula as 4, 5, 5 in which metatarsus bears segment I a little shorter than II.

Median lobe of aedeagus (Fig. G, H) is 0.51 mm long; in ventral view the basal part is narrowly oval as a whole, on the contrary apical lobe is very short and triangular in outline, its ventral surface is fairly concave; laterally apical lobe is evenly bent down in full length. Copulatory piece (Fig. I) is oblong and with a nipple-shaped apex. There are enormously long, narrow dorsal picks (*p* in Fig. I), their apices are narrow-



ly prolonged and curved. Lateral lobe (Fig. J) is very broad and with a well-developed velum; *m* is elongate and posteriorly dilated. Distal segment (Fig. K) is subtriangular; *a*, *b* are subequal in length, the latter is subapical and close to *c* in position.

Length. ca. 3.40 mm (head 0.28 mm long x 0.46 mm wide; pronotum 0.41 mm x 0.54

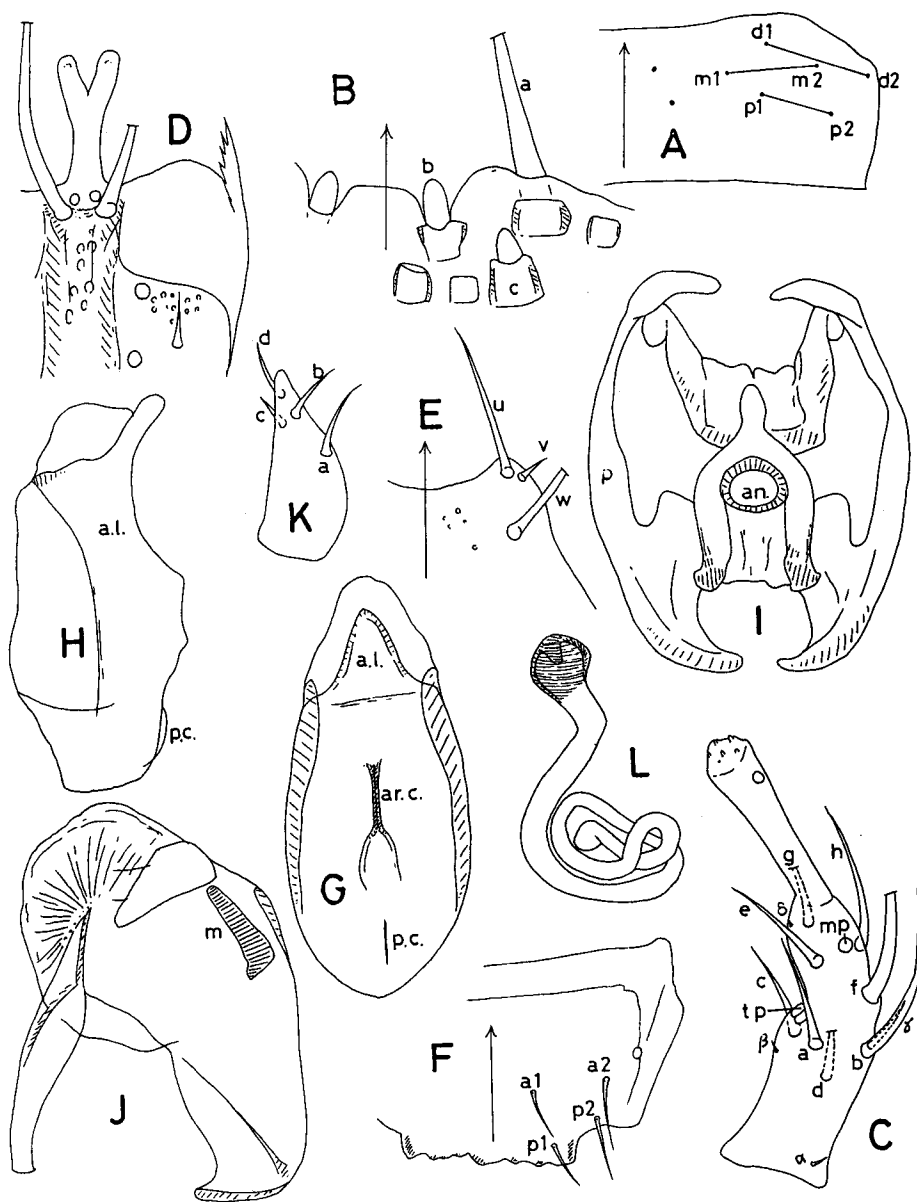


Fig. 7. *Atheta (Dimetrota) allocera ontakeana* n. ssp. A. Labral chaetotaxy; B. Labral margin; C. Glossa & prementum; D. Median lobe of aedeagus; E. Copulatory piece & suspensoria; F. ♂ terg. VIII; G, H. Lateral lobe of aedeagus; I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. Spermatheca.

mm; elytra 0.46 mm x 0.80 mm).

Female. Tergite VIII is not modified. Sternite VIII is shortly produced behind and shallowly emarginate in the subtruncate apex, where there is a row of subequally short marginal setae. Spermatheca (Fig. L) is long, complicated and ending in a small bulb; bursa is short and with a robust umbilicus.

Material examined. Holo-(♂), allo- and 3 paratypes; Tano-hara (2200 m alt.), Mt. Ontake, Nagano Pref., 9 VIII, 1974, R. Yoshii leg.

In many respects it is very close to the northern European *A. (D.) allocera* Epp. But there are some minor differences, i. e., the antennal segments from IV to X are broader, the posterior margin of the male tergite VIII has longer lateral processes, and the distal segment of lateral lobe is not narrowed distally in the cited species.

In the Japanese new subspecies the fore-parts are dull by the presence of the distinct microsculpture.

***Atheta (Dimetrota) nikkoensis* n. sp. Fig. 8**

Male. Ground colour is dark brownish red and shining; head is intensively pigmented; pronotum is uniformly coloured, whereas elytra are with yellowish tinge in the middle and more or less infuscate postero-externally; abdomen is nearly black towards the extremity; antenna is brownish leaving a little brighter basal segments; legs totally paler except for darker coxae. Body is subparallel and gently depressed above. Head is moderately large, only finely punctured above. Eyes large. Antenna is weakly dilated distally; segment I much broader than II; III about as long as II; VI as long as wide; X a little longer than wide; XI normally elongate. Among six major setae of labrum (Fig. A) *m*2 is on the same level with *d*2 and separated from distal row of setae; proximal row is parallel to distal row; 4 + 4 secondary setae are present. *b*-sensilla of labral margin (Fig. B) is reniform; *c* well-defined. Mandibles are sharply hooked at apices. Segment III of maxillary palpus is pear-shaped; IV is relatively long. Galea broad and with a shortly ciliate distal lobe. Lacinia gradually dilated in the inner margin; distal comb is composed of six short, loosely arranged teeth. In labial palpus (Fig. C) segment III is apparently shorter than I; *γ* is posterior to *b*; *a* is slightly posterior to *b*; *e* is fairly posterior to the level of *mp*. Glossa (Fig. D) is narrowly elongate and divided from middle into two very slender arms whose apices are more or less sharply pointed. Median area of prementum is parallel and with some 7 coarse pseudopores; those on lateral area are ca. 10 in number. Pronotum is moderately broader than long, obsoletely depressed in the middle; the sides are feebly narrowed behind; lateral erect setae are long and conspicuous; the surface is furnished with the distinct granules throughout; the secondary setae on the disc very short, recumbent and directed anteriorly along the midline. Elytra are considerably longer than the pronotum and not emarginate behind; the area posterior to scutellum is depressed and with distinct granules as in the pronotum. Macrochaeto-

taxy as 02-13-23-23-23-24. Tergite VIII (Fig. E) is broadly truncate in the posterior margin where it is obsoletely crenulated in full length and with well-defined lateral corners. Sternite VIII (Fig. F) is modified in having the triangularly pointed apex and with the crenulated margin. Meso- and metatibiae have conspicuous macrosetae. Segment I of metatarsus is shorter than II; III and IV are equal in length;

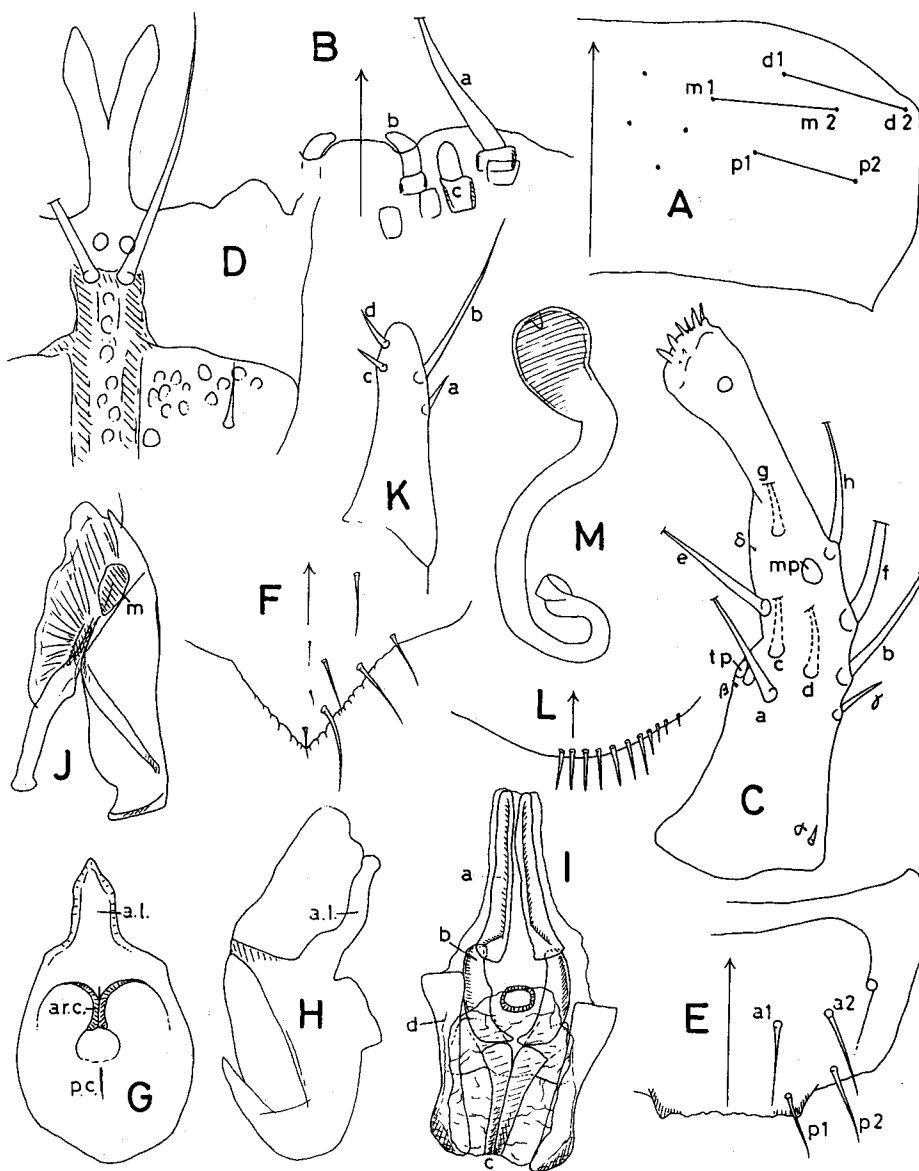


Fig. 8. *Atheta (Dimetrota) nikkoensis* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. ♂ terg. VIII; F. ♂ stern. VIII; G, H. Median lobe of aedeagus; I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. ♀ stern. VIII; M. Spermatheca.

empodium inconspicuous.

Median lobe of aedeagus (Fig. G.H) is 0.46mm long; median lobe is oval in outline and suddenly constricted forming triangularly pointed apical lobe; laterally apical lobe is sinuate-convex in full length. Costae *ar. c.* are completely approximate and recurved distally. Copulatory piece (Fig. I) is modified, i.e., there are long apical sclerites (*a* in Fig. I) and short basal sclerites (*b*), they are articulated together at their ends. Over the corpus there is a broad membranous element whose median part is converted to two elongate processes (*c*). Dorsal pick (*d*) is long, dilated distally and truncate at apex. Lateral lobe (Fig. J) is narrowly elongate; *m* is oblong; velum is dilated anteriorly. Distal segment (Fig. K) is elongate and obtusely ending; *a* is strongly reduced, on the contrary *b* is enormously long; *c*, *d* are short as usual.

Length. ca. 3.0 mm (head 0.32 mm long  $\times$  0.45 mm wide; pronotum 0.39 mm  $\times$  0.51 mm; elytra 0.51 mm  $\times$  0.74 mm).

Female. Sternite VIII (Fig. L) is merely produced behind and with a row of short and long marginal setae. Spermatheca (Fig. M) is long, twisted, briefly recurved distally and with a reflexed end; bursa is rounded and with a fine umbilicus.

Material examined. Holo-(♂), allo- and 2 paratypes. Odashiro-ga-hara, (1600 m alt.), Nikko, Tochigi Pref., 20 IX, 1977, K. Sawada leg.

The species is very unique in having the aedeagus with the articulated sclerites and fairly pointed sternite VIII of the male sex.

***Atheta (Dimetrota) yamamotoi* n. sp.      Fig. 9**

Male. Nearly black throughout and strongly shining; elytra obscurely tinged with brown; antenna nearly black leaving the anterior segments more or less paler; legs brownish. Body is robust and broad in the middle. Head is broad, orbicular in outline and strongly coriaceous and with fine granules all over. Eyes moderately large. Post-gena is evenly rounded in full length. Antenna is robust as a whole; segment III subequal to II in length; IV to VII are longer than wide; X a little broader than wide; XI short. Labrum (Fig. A) is broadly emarginate in front; proximal row of setae is very short and parallel to distal row; there are 3 + 3 secondary setae. From labral margin (Fig. B) *b* is broad, truncate at apex; *c* is robust with obtuse end. Mandibles are stout and distinctly narrowed distally and ending in a briefly hooked apices; the right one with a fine molar near base. Galea is with a large distal lobe whose cilia are dense and similarly short throughout. Lacinia is abruptly dilated in the middle of the inner margin and with two well-defined isolated teeth.  $\beta$  of labial palpus (Fig. C) is just behind the *tp*;  $\gamma$  is close to *f*; *a* is on the same level with *b*; *e* is a little posterior to the level of *mp*. Glossa (Fig. D) is broad and with two well-diverging, obtuse arms. Median area of prementum is fairly broad, parallel and with some large pseudopores; in lateral area there are two real, one setal and ca. 10 similarly coarse pseudopores. Mentum (Fig. E) is clearly emarginate in front; *v* is very long in relation to *u*.

Pronotum is considerably transverse, weakly narrowed behind and with the micros-

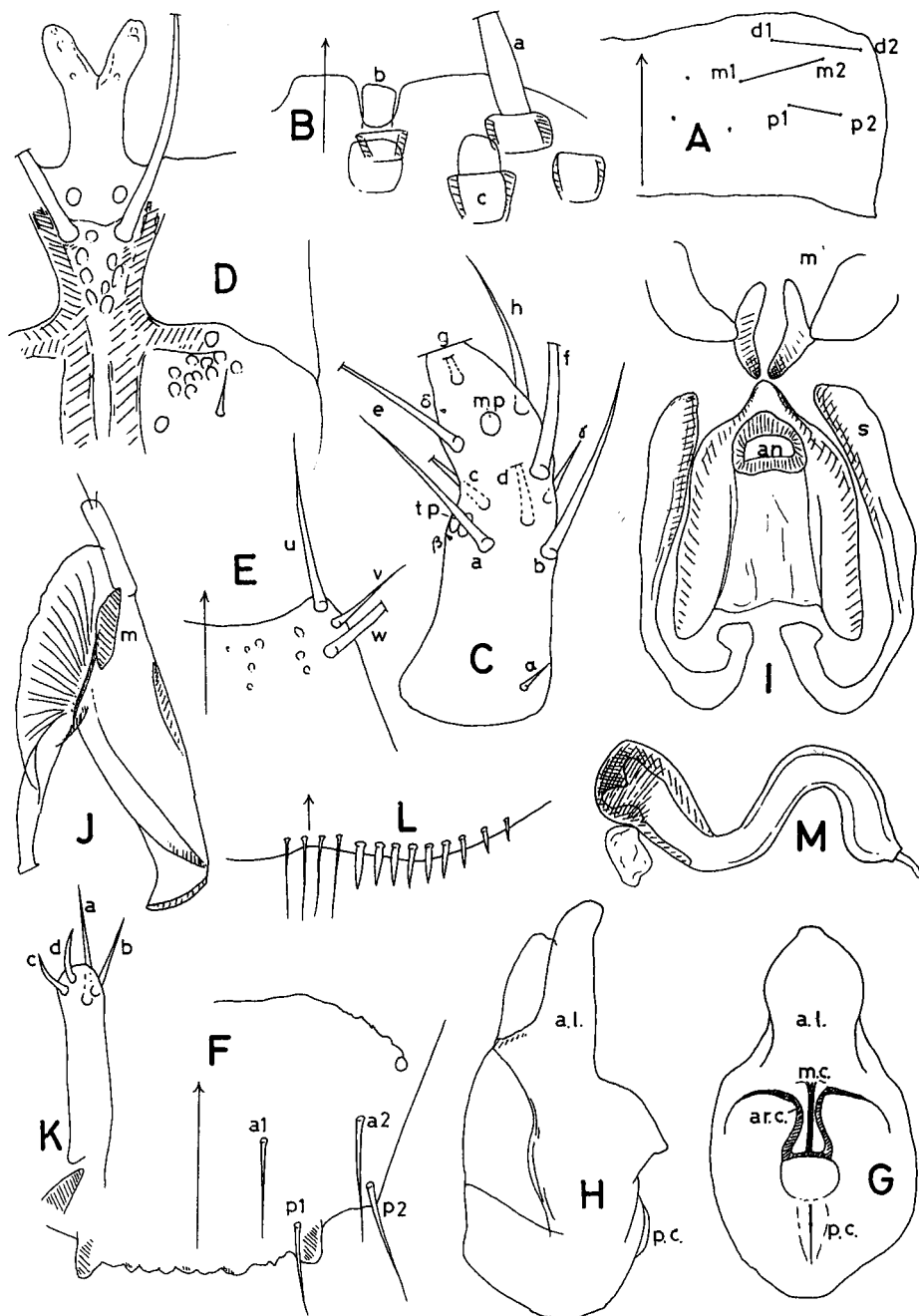


Fig. 9. *Atheta (Dimetrota) yamamotoi* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. Mentum; F. ♂ terg. VIII; G, H. Median lobe of aedeagus; I. Copulatory piece & suspensoria; J, K. Lateral lobe & its distal segment; L. ♀ stern. VIII; M. Spermatheca.

culpture alike that of the head; in the middle with an obsolete depression which is becoming deeper posteriorly and forming a shallow, transverse depression before the base. Elytra are much longer than pronotum, weakly emarginate postero-externally and roughly sculptured throughout. Macrochaetotaxy as 02 - 13 - 13 - 13 - 23 - 35. Abdomen is nearly glabrous in the distal segments and with conspicuous lateral erect setae. Tergite VIII (Fig. F) is broadly truncate in the posterior margin where it is crenulated in full length and with the thick lateral corner which is gently projecting beyond the margin; among 4 + 4 major setae *a2* is separating from stigma. Each tibia possesses a moderately long macroseta in the middle. Metatarsus bears segments I to IV subequally short and well-developed empodium.

Median lobe of aedeagus (Fig. G, H) is 0.38 mm long. In ventral view apical lobe is oval in outline and with the strongly constricted base. Costae *ar. c.* are approximate in the middle and recurved distally; *m. c.* is entire. In lateral view apical lobe is nearly straight and lightly bent down near apex. Copulatory piece (Fig. I) is oblong and obtusely pointed at apex; annellus is preapical in position. Dorsal pick (*s* in Fig. I) is fairly elongate, gradually dilated distally and strongly hooked basally; median apophysis (*m*) is less developed. Lateral lobe (Fig. J) is narrow as a whole; middle apodeme is elongate with pointed ends; velum is normally developed. Distal segment (Fig. K) is narrowly elongate and parallel; four macrosetae are confined to the apical part of the segment; *a* is longer than *b*; *c*, *d* are subequally long in relation to others. Length. c. 4.0 mm (head 0.40 mm long  $\times$  0.52 mm wide; pronotum 0.52 mm  $\times$  0.62 mm; elytra 0.66 mm  $\times$  0.82 mm).

Female. Tergite VIII is not modified. Sternite VIII (Fig. L) is shallowly emarginate at apex, where there is a row of short and long marginal setae. Spermatheca (Fig. M) is S-shaped and with a thick, elongate bursa.

Material examined. Holo-(♂), all- and 2 paratypes; Oda-miyama, Ehime Pref., 4 V, 1986, E. Yamamoto leg.

As the macrochaetotaxy is represented as 02-13-13 ... and as the posterior macrosetae of the abdominal tergite III are standing in equal distances it is to be included in *Dimetrota* (Muls. et Rey, 1873) of *Atheta* (sensu R. Yosii et K. Sawada, 1976, p. 59).

In the gross features of labium and labrum the species is similar to *A. (D.) picipennis* (Mannerh.), but differs in obtusely pointed copulatory piece (Fig. I), crenulated posterior margin of male tergite VIII, and different spermatheca.

The species is dedicated to Mr. E. Yamamoto.

### *Atheta (Anopleta) okamotoi* n. sp.

Fig. 10

Male. Nearly black in ground colour and subopaque by the presence of the microsculpture; legs slightly paler. Body is flattened above and subparallel. Head is orbicular in outline, gently depressed in the middle, the depression is extending to frons and without punctures. Eyes moderate in size. Antenna is scarcely dilated to-

wards the extremity and with slender segments; segment III is a little shorter than II; X clearly longer than wide. Labrum (Fig. A) is feebly emarginate in the anterior margin;  $p_1$  is anterior to the level of  $p_2$ ; medial row of setae is parallel to proximal row and much shorter than it; there are 4 + 4 secondary setae. Mandibles as usual; the right one is edentate. Maxillary palpus 4-segmented; segment III weakly dilated distally; IV is short. Galea has a large distal lobe which is provided with extremely dense, short cilia throughout. Lacinia is abruptly dilated in the inner margin; distal

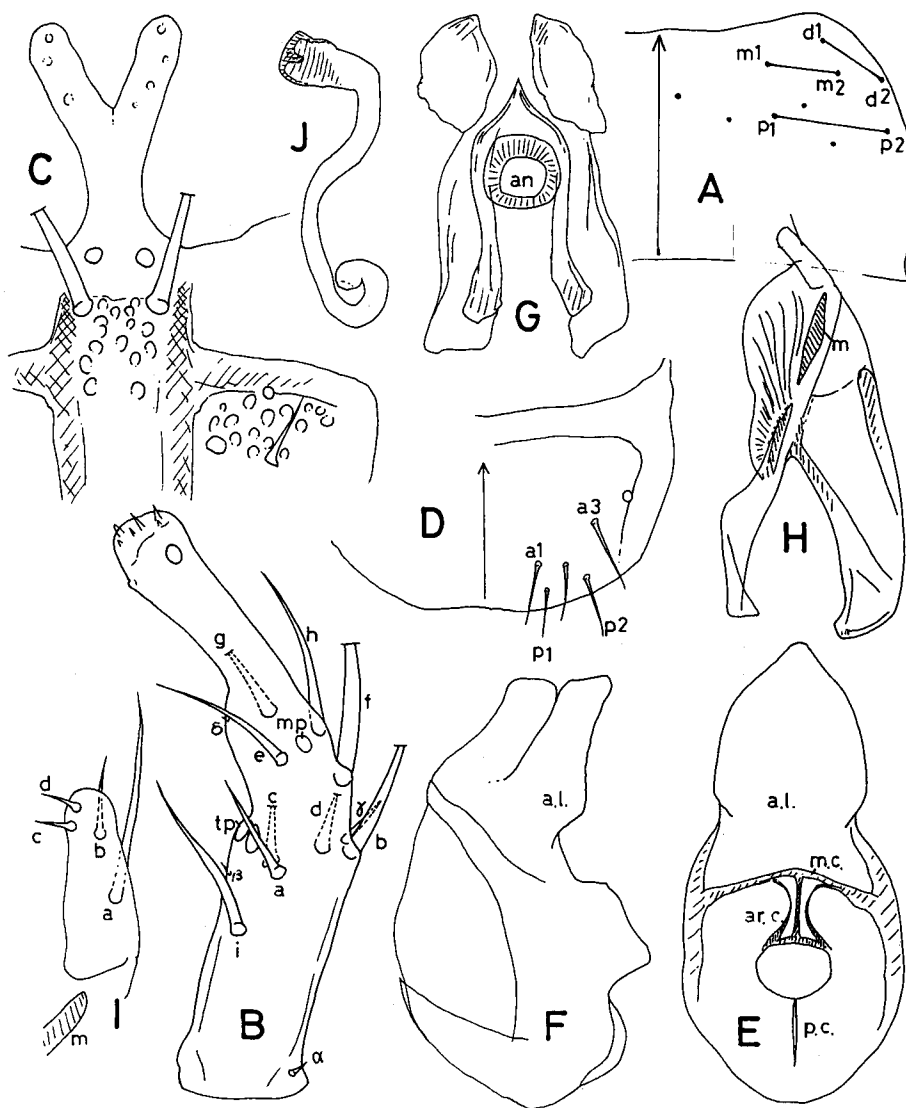


Fig. 10. *Atheta (Anopleta) okamotoi* n. sp. A. Labral chaetotaxy; B. Labial palpus; C. Glossa & prementum; D. ♂ terg. VIII; E, F. Median lobe of aedeagus; G. Copulatory piece & suspensoria; H, I. Lateral lobe of aedeagus & its distal segment; J. Spermatheca.

comb is composed of a row of six loosely arranged teeth plus well-defined isolated teeth. From labial palpus (Fig. B) segment I a little longer than III;  $\gamma$  is just anterior to  $b$ ;  $a$  is posterior to  $b$ ;  $e$  is close to  $mp$ ; peculiarly there is one long, fairly fixed additional seta ( $i$  in Fig. B) posterior to  $a$ . Glossa (Fig. C) is divided from middle into two diverging arms; basal paired pores rather separating to each other. Median area of prementum is very broad, parallel and with several large and small pseudopores; in lateral area two real pores are mingled with the similar pseudopores around them. Mentum is weakly emarginate in front;  $v$  is considerably reduced and is lateral to  $u$ . Pronotum is moderately transverse, slightly depressed before the base and distinctly coriaceous throughout; lateral erect setae are short and inconspicuous; secondary setae along the midline are directed anteriorly. Elytra are clearly longer than the pronotum and not emarginate behind; the surface is a little more roughened than in the pronotum. Flabellum up to 6 long and short setae. Macrochaetotaxy as 02-23 (or 13)-23-23-23-324. Abdomen is nearly parallel; tergite VI is subequal to VII in length; lateral erect setae not conspicuous. Tergite VIII (Fig. D) is not modified; the microsculpture is imbricate in pattern; there are 5 + 5 major setae, in which  $a1$  is fairly posterior to the level of  $a3$ . Each tibia has a short macroseta in the middle. Tarsal formula as 4, 5, 5, in which the metatarsus bears segments I to IV subequally short; all tarsi have fairly long lateral setae. Empodium is present, but very short and curved.

Median lobe of aedeagus (Fig. E, F) is 0.36 mm long; ventrally apical lobe is ovate with an abrupt constriction before the base; the basal part is broad and stout; in lateral view apical lobe is short, stout and lightly curved with angulate base. Costae *ar. c.* not confluent in the middle; *m. c.* is entire; *p. c.* is developed. Copulatory piece (Fig. G) is elongate, sinuate before middle, and then acuminate at apex; annellus is large and distally situated. Lateral lobe (Fig. H) is rather narrow and with less developed velum; middle apodeme ( $m$ ) is fusiform.  $a$ -seta of distal segment (Fig. I) is long, but  $b$  is much shorter and distal in position.

Length. ca. 3.0 mm (head 0.38 mm long  $\times$  0.48 mm wide; pronotum 0.42 mm  $\times$  0.52 mm; elytra 0.51 mm  $\times$  0.60 mm).

Female. Tergite VIII is alike that of male. Sternite VIII is with a row of some 20 + 20 long and short marginal setae. Spermatheca (Fig. J) is narrowly elongate, contorted and then shortly coiled at apex; bursa is oblong with a short umbilicus.

Material examined. Holo-( $\sigma$ ), allotypes. Koigahama-beach, nr. Kure, Hiroshima Pref., 20 X 1988, I. Okamoto leg (under wrack).

As the macrochaetotaxy is as 02-23-23... and as the abdominal segment VIII possesses 5 + 5 major setae this species is to be included in *Anopleta* Muls. et Rey, 1874 of *Atheta* (sensu R. Yosii et K. Sawada, 1976, p.76). All antennal segments are specifically elongate, therefore, it may be easily separated from *A. corvina* (Thoms., 1856) and other relatives. Besides, the presence of the additional seta  $i$  in labial palpus (Fig. B) is characteristic.



The species is dedicated to Mr. I. Okamoto.

***Liogluta libraria* n. sp.**

Fig. 11

Male. Ground colour is reddish brown and subopaque in the fore-parts; head is more intensively pigmented; abdomen is infusate towards the extremity; legs paler. Body is robust and rather flattened above. Head is orbicular as usual, weakly convex above and distinctly granulate throughout. Eyes considerably reduced in size, consequently the post-gena is well-developed. Antenna is a little dilated towards the extremity; segment IV slightly longer than wide; VI to VIII about as long as wide; X moderately transverse. Labrum (Fig. A) is truncate in front; among 6 + 6 major setae *m2* is rather close to the level of *d2*; medial row of setae is as long as distal row; 3 + 3 secondary setae are present. Labral margin as usual; *a* is diverging; *b* is considerably reduced; *c* is as usual. Mandibles are narrow as a whole and with well-defined hook; the right one has a stout molar (Fig. B). Maxillary palpus is 4-segmented; segment II about as long as III which is weakly dilated distally; IV subparallel and short. Galea with a quite obtuse, short distal lobe. Lacinia is gently dilated in the inner margin, where there is distal comb consisting of very short teeth plus two short isolated teeth. Labial palpus (Fig. C) is 3-segmented; segment I relatively short; setula  $\beta$  is close to *tp*;  $\gamma$  is near by *b*; *a* is separating from *tp*; *e* is on the same level with *f*. Glossa (Fig. D) is divided to short, diverging arms. Median area of prementum is fairly broad and with many large and small pseudopores; lateral area without pseudopores. Mentum (Fig. E) is truncate in front; *w* is posterior to *u* and on the level of *v*. Pronotum is considerably broader than long and apparently retracted behind. The surface is provided with distinct microsculpture all over and broadly, obsoletely depressed in the middle, the depression is becoming deeper before the base, on each side of the depression is elevated to give it a foveoid appearance. Elytra apparently longer than the pronotum and more distinctly coriaceous than in the pronotum. Macrochaetotaxy may be varied as 01-13-23-23-23-24 or 01-03-13-23...within the specimens examined. Abdomen is with finely but distinctly punctured. Tergite VIII (Fig. F) is broadly truncate behind, the truncate margin is shortly produced behind and is obsoletely crenulate in full length, and the lateral corners are rounded and slightly projecting beyond the margin. A similar projection is seen in the middle of the margin. Among 4 + 4 major setae *a1* is broadly separating from *a2*. The disc is roughened by the presence of the coarse elevations. All tibiae have short macrosetae as usual.

Median lobe of aedeagus is (Fig. G, H) 0.60 mm long; ventrally apical lobe is ovate with briefly pointed apex, and with the basal portion thickened and laterally dilated; in lateral side apical lobe is fluently, strongly bent down. Costae are stout; *ar. c.* approximate distally and slightly recurved apically; *m. c.* is short; *p. c.* is present. Copulatory piece (Fig. I) is fairly elongate and gradually narrowed distally forming an

acute apex; annellus is large for the corpus and situated near middle. Median apophyses of preputial sac (*m*) is elongate and broadly rounded at apex; paramedian apophyses (*pm*) are broad at base and then close together distally. Distal segment of lateral lobe (Fig. J) is parallel and narrowly elongate; *a* is located at behind the middle; *b* is at anterior one-third; *c*, *d* are standing close together.

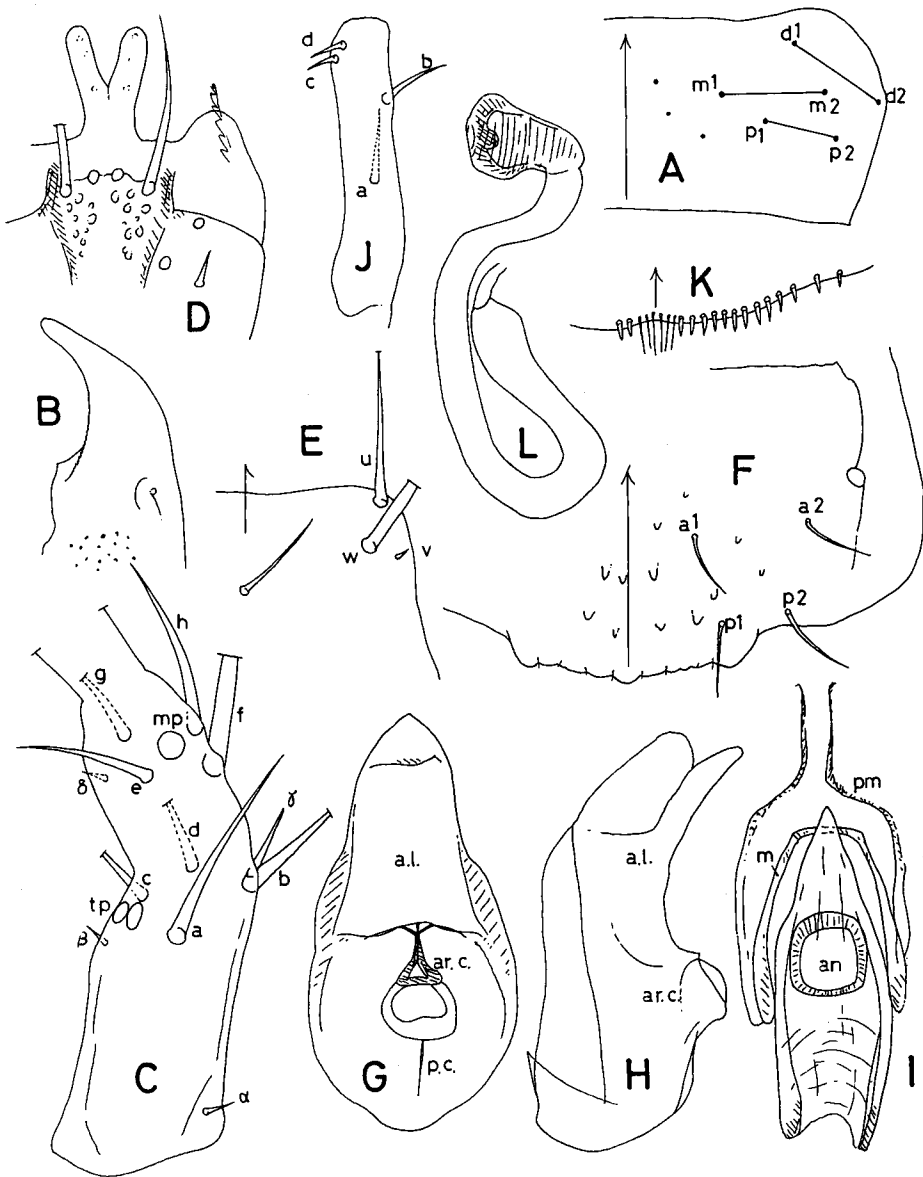


Fig. 11. *Liogluta libraria* n. sp. A. Labral chaetotaxy; B. Right mandible; C. Labial palpus; D. Glossa & prementum; E. Mentum; F. ♂ terg. VIII; G, H. Median lobe of aedeagus; I. Copulatory piece & suspensoria; J. distal segment of lateral lobe; K. Marginal setae of ♀ stern. VIII; L. Spermatheca.

Length. up to 3.5 mm. (head 0.45 mm long  $\times$  0.64 mm wide; pronotum 0.59 mm  $\times$  0.81 mm; elytra 0.60 mm  $\times$  0.88 mm).

Female. Tergite VIII not modified. The posterior margin of sternite VIII (Fig. K) is faintly emarginate in the middle and with a row of short and long marginal setae. Spermatheca (Fig. L) is long, contorted largely and recurved in distal half; bursa is short, constricted at base and with a short umbilicus.

Material examined. Mt. Ontake (2,900 m. alt.), Nagano Pref., 23 IX, 1972, R. Yoshii et K. Sawada leg. Holo-( $\sigma$ ), allo- and 2 paratypes.

In many crucial characters this species is similar to *L. yasudai* m. from Hokkaido, but differs in the shorter glossa with more broad median area of prementum, and in the broader median lobe of aedeagus with different inner armature. Tergite VIII in both sexes possesses 4 + 4 major setae instead of 5 + 5 in the cited species.

Besides, the head and pronotum are broader and with less reduced eyes, the elytra are with more smooth integument in the present species.

***Aloconota bulbosa* n. sp.** Fig. 12

Male. Reddish brown in ground colour and strongly shining; the fore-parts are uniformly pigmented; abdomen is a little bright in the basal segment; antenna including basal segments brown; legs slightly paler. Body is robust. Head is too large for the corpus, oblong in outline, in the middle lightly depressed above and nearly glabrous. Eyes are large, their diameter is apparently much longer than the post-gena. Antenna is long and slightly dilated towards the extremity; segment I much larger than II; III a little shorter than II; IV fairly broader than long; V similar to IV, but abruptly enlarged compared to it; X considerably transverse; XI fairly elongate. Labrum (Fig. A) is fairly transverse and apparently emarginate in the middle of the anterior margin; all the rows of setae are subequally long; *p1* is clearly posterior to the level of *p2*, consequently proximal row of setae is subparallel to medial row; 1 + 1 secondary setae plus one median seta are present. *a*-sensilla of labral margin (Fig. B) is strongly reduced, ovate; *b* is ovate like *a*; *c* is inconspicuous. Mandibles are narrowly elongate, not hooked but abruptly pointed at apices; the right one (Fig. C) has a fine molar. Maxillary palpus is 4-segmented and stout; segment II curved and dilated; III strongly dilated distally; IV fairly long in relation to III and with well-developed basal filamentous sensilla. Distal lobe of galea is converted to the tuft of dense, long cilia. Lacinia is gently dilated in the middle of the inner margin and is densely, finely spinulate-ciliate for the most part. From labial palpus (Fig. D) segment III is much longer than I;  $\gamma$  is fairly long and is posterior to *b*; *a* is midway between *tp* and *b*; *e* is on the same level with *mp*; *f* is slightly anterior to the level of *e*. Glossa (Fig. E) is lobate with broadly rounded apex. Median area of prementum is very broad, abruptly retracted behind and with only 2 small pseudopores; in lateral area 2 real and 1 setal pores are present. Mentum (Fig. F) is feebly emarginate in front; *v* nearly completely

reduced and far remote from *u*; *w* is a little anterior to the level of *v*. Pronotum is distinctly broader than long and well-convex above; there is an obsolete depression before the base; the surface is with very fine punctures throughout; secondary setae along the midline are directed posteriorly; lateral erect setae are long and conspicuous. Mesosternal process is short and ending in a narrowly rounded apex. Elytra

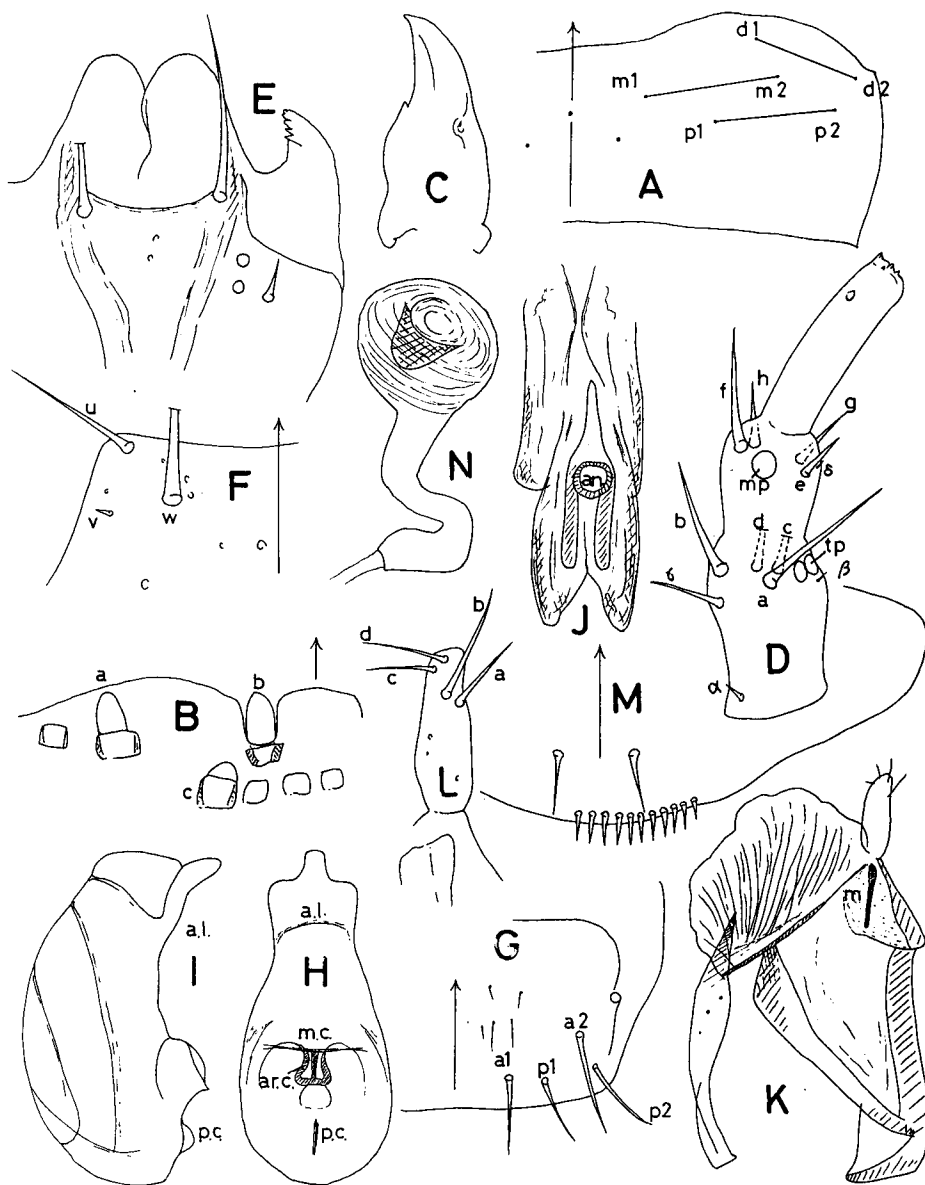


Fig. 12. *Aloconota bulbosa* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Labial palpus; E. Glossa & prementum; F. Mentum; G. ♂ terg. VIII; H, I. Median lobe of aedeagus; J. Copulatory piece & suspensoria; K, L. Lateral lobe & its distal segment; M. ♀ stern. VIII; N. Spermatheca.

are considerably longer than pronotum, not emarginate postero-externally and a little more roughly and much more densely punctured than in the pronotum. Flabellum with ca. 6 long setae. Macrochaetotaxy as 01-12 (11)-12-12-12-34. Abdomen is fusiform in outline and very finely punctured all over. Tergite VIII (Fig. G) is not modified; peculiarly *a1* is posteriorly removed and close with the level of *p1*. All tibiae have short macrosetae. Segments I to IV of metatarsus are gradually decreasing in length.

Median lobe of aedeagus (Fig. H, I) is 0.34 mm long; in ventral view apical lobe is broad, gently narrowed basally, suddenly constricted before apex forming a projecting, upward apex; laterally apical lobe is long and decurved in full length. Costae *ar. c.* are close to each other in the middle; *m. c.* is entire; *p. c.* is present. Copulatory piece (Fig. J) is narrowly elongate and acuminate at apex; annellus as usual; suspensoria are normally developed. Lateral lobe (Fig. K) is fairly broad; middle apodeme is angustate, whereas the outer margin is broadly chitinized to the basis; velum well-developed. Distal segment (Fig. L) is nearly rectangular; *a, b* as usual and standing close together, while *c, d* are exceptionally long.

Length. ca. 2.2 mm (head 0.33 mm long  $\times$  0.42 mm wide; pronotum 0.32 mm  $\times$  0.46 mm; elytra 0.46 mm  $\times$  0.64 mm).

Female. Sternite VIII (Fig. M) is strongly transverse and in the middle of the posterior margin there is a row of similarly short marginal setae. Spermatheca (Fig. N) is peculiar in having a large, subglobose bursa with large umbilicus; duct is short and twisted distally.

Material examined. Holo-(♂), allo- and 2 paratypes, Mt. Fuji nr. Lake Kawaguchi, (ca. 100 m. alt.), Yamanashi Pref., 5 VIII, 1982, K. Sawada leg.

As the strongly reduced *a*-sensilla of labral margin, and as the lobate glossa it is to be included in *Aloconota* Thoms., 1861. In the present species the mesosternal process is obtusely ending, but never truncate as in *Pelioptera* Kr., 1857.

Very broadly lobate glossa (Fig. E), strongly reduced *v*-setula of mentum (Fig. F) and modified spermatheca are characteristic. Besides, the fore-parts are strongly polished.

### ***Pelioptera babai* n. sp.**

Fig. 13

Ground colour is reddish brown and subopaque; head is intensively pigmented; pronotum, elytra are similarly coloured; abdomen is becoming brighter in the basal segments; antenna is uniformly dark brown; legs paler. Body is robust and more or less depressed above. Head is slightly depressed above, very finely punctured and completely sculptured throughout. Eyes large, fairly convex beyond the head contour. Antenna is stout, long; segments I to III subequally elongate; IV longer than wide; V about as long as wide; VI very long, fully as long as three preceding together. Labrum (Fig. A) is emarginate in front; distal row of setae about as long as medial row

and apparently longer than proximal one; *m1* is distinctly posterior to the level of *m2*; 2 + 2 secondary setae are present. *a*-sensilla of labral margin (Fig. B) is strongly

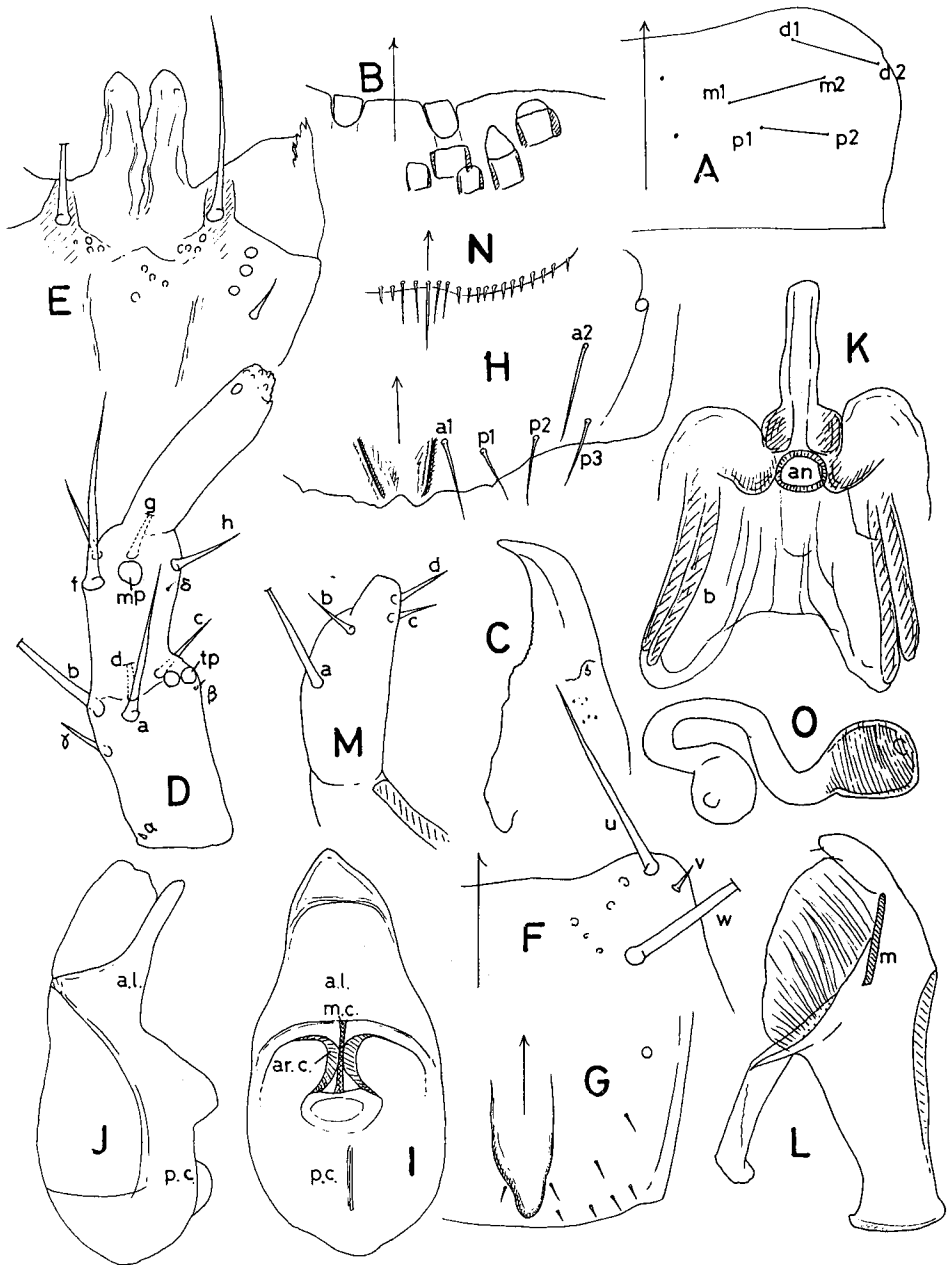


Fig. 13. *Pelioptera babai* n. sp. A. Labral chaetotaxy; B. Labral margin; C. Right mandible; D. Labial palpus; E. Glossa & prementum; F. Mentum; G, H. ♂ terg. VII & VIII; I, J. Median lobe of aedeagus; K. Copulatory piece & suspensoria; L, M. Lateral lobe & its distal segment; O. Spermatheca.

reduced to campanulate form; *b* is completely truncate; *c* is obturbinate. Mandibles are narrowly elongate; the right one is edentate leaving a fine crenulation (Fig. C). Maxillary palpus is fairly slender as a whole; segment II narrowly elongate; III gently dilated in the inner margin; VI relatively long. Galea is as usual; distal lobe furnished with moderately long, dense cilia all over. The inner margin of lacinia is arcuate and densely spinulate-ciliate for the most part. In labial palpus (Fig. D) segment III apparently longer than I;  $\gamma$  is posterior to *b*; *a* is between *tp* and *b*; *f* is no the level of *mp*. Glossa (Fig. E) is narrowly elongate, deeply divided to the base. Distal setae of prementum are standing far remote from each other. Accordingly median area is very broad and with some 10 small pseudopores; in lateral area there are 3 real and 1 setal pores. Mentum (Fig. F) is nearly straight in front; *v* is strongly reduced to a setula and located just posterior to *u*; *w* is clearly separating from *u*. Pronotum is distinctly granulate and strongly coriaceous throughout; the lateral margins weakly narrowed behind and with short, rigid erect setae; the posterior corner is entirely rounded. The secondary setae are very short and rosulate on each side of the disc, and those along the midline are directed posteriorly. Mesosternal process is short and broadly truncate at apex. Elytra are nearly as long as pronotum, not emarginate postero-externally and similarly roughened to the pronotum. Flabellum with ca. 8 long setae. Macrochaetotaxy as 01-12-12-13-13-34. Abdomen is broad, nearly glabrous with strong luster. In tergites III to VI there is a carinula in the middle near the base. In tergite VII (Fig. G) an elongate, depressed median costa is present. And in tergite VIII (Fig. H) the posterior margin is roughly crenated and with a pair of posteriorly converged carinae; there are 5 + 5 (2, 3) major setae; *a2* is as usual, but *a1* is posteriorly removed by the carina. Tibiae have short macrosetae. Metatarsus with segments I to IV which are fairly elongate and gradually decreasing in length; no empodium is present.

Median lobe of aedeagus (Fig. I, J) is 0.60 mm long: ventrally apical lobe is ovate and with an obtusely pointed apex and gently constricted basally; costae *ar. c.* are broad and approximate in the middle; *m. c.* is entire. In lateral view apical lobe is gently decurved apically; *p. c.* is highly costate. Copulatory piece (Fig. K) is modified, i. e. the apical process is prolonged as a fairly elongate, subparallel lobe and with the dilation at base; posterior to annellus no distinct sclerites are present. Laterally there are two paired, fairly long sclerites (*b* in Fig. K) which may designate as suspensoria. Lateral lobe (Fig. L) as usual; middle apodeme (*m*) is angustate; velum well-developed. Distal segment (Fig. M) is nearly oblong and narrowed at apex; *a* is long and situated medially, whereas *b* is much shorter than *a* and is near the level of *c*.

Length. ca. 5.0 mm (head 0.58 mm long  $\times$  0.70 mm wide; pronotum 0.70 mm  $\times$  0.90 mm; elytra 0.83 mm  $\times$  1.28 mm).

Female. Sternite VIII is gently emarginate in the middle of the posterior margin, where there is a row of long and short marginal setae (Fig. N). Spermatheca (Fig. O) is twisted, recurved distally and ending in a dilation; bursa is merely rounded and with

a flat umbilicus.

Material examined. Holo-( ♂ ) and allotypes, Mt. Tateyama, Midagahara (1800 m alt.), Toyama Pref., 21 VIII, 1969, K. Baba leg.

Judging from the form of the male tergites VII, VIII the present species is very close to *P. exasperate* (Kr., 1859) but differs in the lateral area of prementum with three real pores instead of two in the cited species, and in the different aedeagus.

Besides, the pronotum has the rosetted pattern of secondary setae in the present species.

The species is dedicated to Dr. K. Baba.

### ***Plesiochara* n. gen.**

In the gross feature of the labium and in the concentrated labral sensillae the new genus is near *Aleochara* Gravenhorst, 1802, but easily distinguishable by the much longer segment II of labial palpus and by the location of setae *e, f* which are far remote from *mp*. The pronotum is finely margined bilaterally as well as the pronotal epipleura entirely visible from the sides.

Besides, the pro- and mesotibiae have no spinulae at all.

Type species: *Plesiochara fusca* n. sp.

### ***Plesiochara fusca* n. sp.**

Fig. 14

Male. Dark brown in ground colour and shining; head and pronotum are blackish; elytra reddish brown, with the scutellar and postero-external portions more or less infusate; abdomen is entirely dark brown and with an iridescent reflection; antennae dark brown with slightly bright basal segments; legs paler. Body narrowly elongate and gently convex above. Head is small, orbicular in outline and very finely punctured throughout. Eyes moderately large and as much as the post-genae from above. Antenna is relatively stout and not very much dilated towards the extremity; segments I to III similarly elongate; IV is the smallest, about as long as wide; V apparently broader than long; X fairly transverse; XI short. Labrum (Fig. A) is gently produced in front; from 6 major setae *m2* is located at distal row of setae; medial row of setae is much longer than others and subparallel to proximal row; there are up to 7 + 7 secondary setae mingled with the major setae. *a*-sensilla of labral margin (Fig. B) is fairly long and ending in slightly curved apex; *b* is ovate, very large in relation to *c*. Mandibles are narrowly elongate and hooked as usual; the right one distinctly serrulate in the middle of the masticatory margin. Maxillary palpus is 5-segmented; segment III is markedly dilated distally; IV subulate but stout at base and is subsegmented at apex showing a minute segment V. Galea is as usual; distal lobe is subtriangular in outline and covered with long conspicuous cilia throughout. Lacinia is gradually dilated behind in the inner margin; distal comb consisting of six loosely arranged teeth plus a little longer two isolated teeth. Labial palpus (Fig. C) is 4-seg-



mented, fairly elongate, tapering and spiniform; segmet II much longer than I, whereas III is very short; IV as much as the half of III. In chaetal arrangement  $\alpha$ -

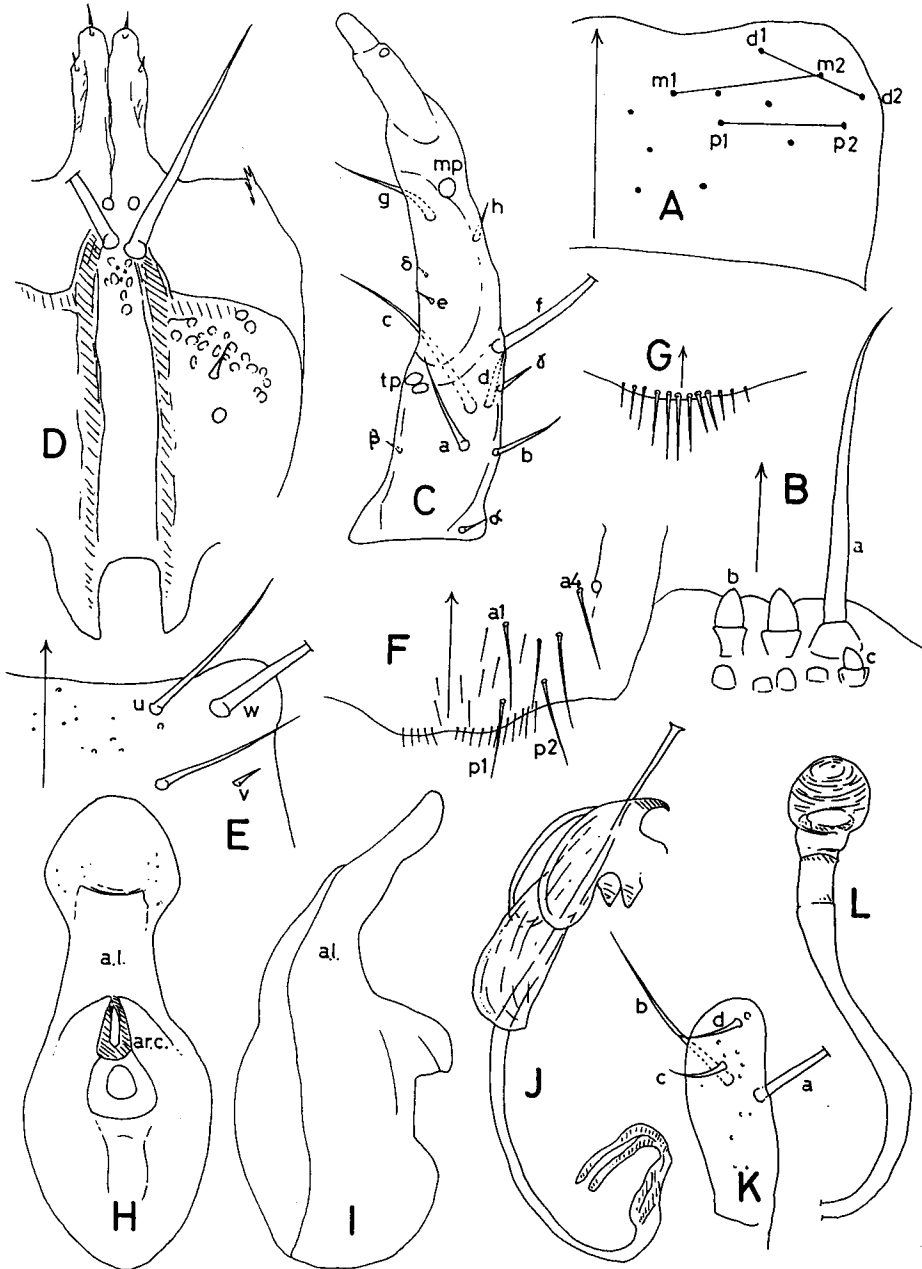


Fig. 14. *Plesiochara fusca* n. g., n. sp. A. Labral chaetotaxy; B. Labral margin; C. Labial palpus; D. Glossa & prementum; E. Mentum; F. ♂ terg. VIII; G. ♂ stern. VIII; H, I. Median lobe of aedeagus; J. Copulatory piece & suspensoria; K. Distal segment of lateral lobe; L. Spermatheca.

setula is as usual, but  $\beta$  is broadly separating from  $tp$ ;  $\gamma$  is on the level of  $tp$ ;  $\delta$  is located at the midway between  $mp$  and  $tp$ ;  $a$  is situated in the middle of segment I;  $b$  is close to  $a$  in position and shorter than it;  $c$ ,  $d$  are standing close together, the former is much longer than the latter;  $e$  is strongly reduced to a setula and far remote from  $mp$ ;  $f$  is near the level of  $tp$ ;  $g$  is long as usual, but  $h$  is very short compared to  $g$ . Glossa (Fig. D) is elongate, dividing to the base into two, not diverging arms, each with two long and short setulae apically, and with basal pores not broadly separating to each other. Median area of prementum (Fig. D) is subparallel and tapering apically, so that distal setae are standing close together, where there are a few pseudopores; in lateral area are three real and one setal pores accompanied with numerous pseudopores. Peculiarly the base of prementum is deeply furcate, each lobe is separating with a broad interspace. Mentum (Fig. E) is truncate in front;  $u$  is unusually inside the lateral margin;  $w$  is on the same level with  $u$ ;  $v$  is minute and separating from  $w$ . Pronotum is moderately convex above, obsoletely flattened towards the base and gently narrowed behind; the lateral margins are finely marginated for the most part; the secondary setae along the midline are directed anteriorly in the anterior one-third and posteriorly in the posterior two-thirds; lateral erect setae are long and conspicuous. Pronotal epipleura are visible from the sides. Mesosternum is not carinate in the middle and sharply pointed behind. Elytra are fairly longer than the pronotum, emarginate postero-externally and more rugosely punctured than in the pronotum. Flabellum with numerous long setae. Macrochaetotaxy as 01 - 33 - 33 - 33 - 33. Abdomen is nearly glabrous and gradually narrowed from the base to the apex; lateral erect setae are numerous and conspicuous. Tergite VIII (Fig. F) is sinuately produced in the posterior margin, where it is weakly emarginated in the middle; uniquely there is a row of some 10 short and long marginal setae; among 6 + 6 major setae  $a4$  is near by stigma; the microsculpture is to be represented an extremely fine, transverse pattern. Sternite VIII (Fig. G) is obtuse behind and with a brief row of marginal setae which are variable in length. Meso- and metabittiae are not spinulose, but densely pubescent and with five similarly long macrosetae. Tarsal formula as 5, 5, 5 in which the metatarsus has segment I about as long as two preceding together. All claws have long, conspicuous empodia.

Median lobe (Fig. H, I) is 0.66 mm long; in ventral view apical lobe is strongly constricted at anterior one-third and then, dilated at apex giving it a spatulate appearance; laterally apical lobe is bent down totally. Copulatory piece (Fig. J) is enormously long filiform and divided at base into two recurved slender lobes; preputial apophyses are composed of two pairs of flat lobes. Lateral lobe is broad and rounded at base of medial segment ( $h$ ); middle apodeme ( $m$ ) is very thin; velum is broad. Distal segment (Fig. K) is oblong;  $a$  is fairly long and close to  $b$  in position;  $c$ ,  $d$  are relatively long.

Length. up to 6.0 mm (head 0.52 mm long  $\times$  0.68 mm wide; pronotum 0.80 mm  $\times$  0.89 mm; elytra 0.88 mm  $\times$  1.22 mm).

Female. Tergite VIII is same as in the male. The posterior margin of sternite VIII is furnished with a row of several, long marginal setae in the middle. Spermatheca (Fig. L) is tubulous and long; bursa is bulbous and no umbilicus within.

Material examined. Minoo, Osaka Pref., 8 XII, 1988, K. Sawada leg. Holo-(♂), allo- and 4 paratypes (in fungus).

The presence of the strongly reduced *e* and *h* setae of labial palpus and the elongate glossa with closely located distal setae of prementum are the features peculiar to the present new species. Besides, the median lobe of aedeagus is spatulate specifically.

(To be continued)

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