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Classification of the Callistini of Japan (Coleoptera, Carabidae)

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With a view to elucidate the taxonomic category of the genera of the Callistini of Japan and that of the subgenera of the genus *Chlaenius*, I studied the male and female genitalia together with some other characteristics. The female genitalia seem to more disclose a natural system than the male genitalia. It is POMEROY who first, in 1932, recognized that the styluses of the female genitalia are evidently variable in *Chlaenius*, and that they are of avail in grouping *Chlaenius* species from Africa. In 1960, BELL also laid a stress upon the styluses in his revision of *Chlaenius* from North America without knowing POMEROY's observations.

I arranged the genera of our fauna for three genera, *Callistomimus*, *Chlaenius* and *Eochlaenius*, and classified *Chlaenius* into eighteen groups in this paper, though I did not treat them as subgenera. With regard to the female genitalia of *Chlaenius*, the ninth *variicornis*-group seems to retain the original form. Some groups have developed spines on the apical segment of the styluses: the development is only qualitative in the *virgulifer*- (Figs. 43–45), *micans*- (Figs. 40–42) and *chuji*-group (Fig. 35), but both qualitative and quantitative in most of the species of the *bimaculatus*-group (Figs. 31–33); it is not so qualitative, but extremely quantitative in the *inops*- (Figs. 23–25), *ceylanicus*- (Fig. 19), *stschukini*- (Fig. 20) and *gebleri*-group (Fig. 17) in which the apical segment is mostly covered with rather short but stout spines. On the other hand, these spines are more or less reduced in the other groups: at first

1) Retired in June, 1981.

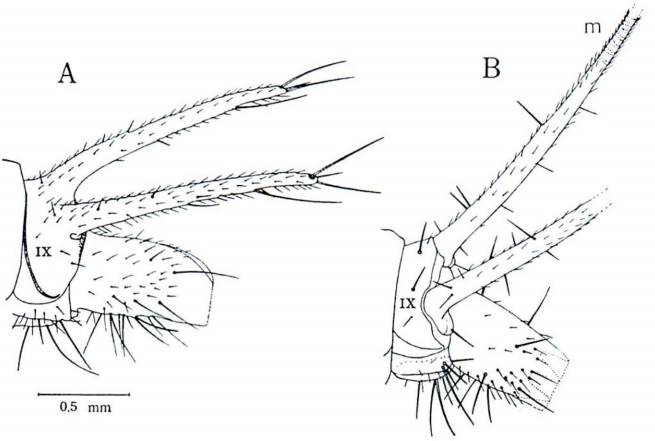
the two usual spines on the outer margin are diminished into a single spine as in the *callichloris*- (Fig. 55) and *circumdatus*-group (Fig. 56), then the spine on the outer margin is obliterated as in the *spoliatus*- (Fig. 57), *pericallus*-group (Figs. 61–63) etc., and at last even the spine on the inner margin is evanescent in the *nigricans*- (Fig. 76) and *costiger*-group (Fig. 75).

I arranged the groups of *Chlaenius* principally in order of the development of these spines in this paper. So far as I am aware, there is the correlation between the spines and the larval cerci: the larva of the species with at least two spines on the outer margin of the apical segment of the styluses in the female adult has the cerci of a fixed and rigid type, concerning which see the following explanatory notes, while the larva of which the female adult has at most one spine there has generally the cerci of a movable and flexible type, sometimes only movable (*C. pericallus*) or only flexible (*C. costiger*, instar 1).

Before going further I wish to acknowledge my indebtedness to many entomologists for their presenting specimens.

Explanatory notes. An arrow in the figures of the aedeagus indicates the dorsobasal termination of the basal orifice, and therefore the more dorsad an arrow points, the more bilobed the basal bulb is (Fig. 79).

The larval cerci of "a fixed and rigid type" are not so slender, not separated from the ninth tergite and therefore not movable at the base, and not flexible because of the lack of a multiannulate part (Fig. A); those of "a movable and flexible type" are fully slender and flagellate, separated from the ninth tergite at the base and movable, and flexible on account of a multiannulate part (Fig. B).



Figs. A, B. Abdominal segments 9 and 10 of larvae (instar 3) of *Chlaenius* spp. IX: tergite 9.
A. *C. variicornis* MORAWITZ, with cerci of fixed and rigid type.
B. *C. circumdatus* BRULLÉ, with cerci (basal third) of movable and flexible type. m: multiannulate and flexible part.

Key to genera of Japan

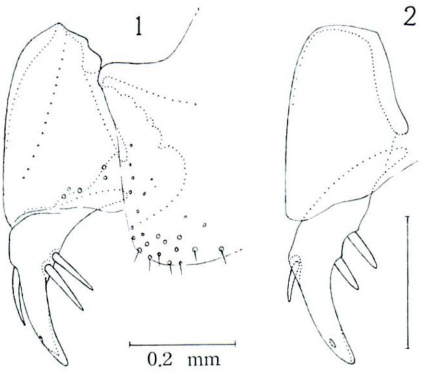
1. Palpi distinctly pubescent, apical segment fusiform, somewhat pointed at apex, penultimate segment of labial palpi with some distinct setae on inner side (Fig. 3); mentum without tooth; head with large pubescent punctures; eyes glabrous; pronotum cordate, with large compact pubescent punctures throughout, lateral margins finely explanate-reflexed, more or less sinuate before basal angles, basal angles well angulate, lateral setae absent; elytra more or less maculate, densely pubescent, basal border effaced inward; tarsi slender, more or less distinctly pubescent on dorsal side, segment 5 pubescent ventrally; ventral side pubescent-punctate; basal segment of styluses glabrous, apical segment long and narrow, outer margin with two long, stout spines, inner margin with one distinct spine, subapical foramen at subapical area, setae not visible (in *okutanii*) (Fig. 2) ..... *Callistomimus*
— Palpi glabrous to pubescent, apical segment subcylindrical, sometimes dilated, well truncate at apex (Figs. 4–13); mentum with distinct tooth, tooth generally bifid, sometimes truncate at apex 2
2. Eyes glabrous; pronotum with marginal setae in or before basal angles; apical segment of styluses not digitate at inner margin..... *Chlaenius*
— Eyes with very short sparse pubescence; pronotum somewhat cordate, not fully wider than long, lateral margins finely bordered, black, sinuate before basal angles, basal angles almost rectangular though somewhat dull at apex, marginal setae absent; apical segment of styluses unusually digitate on inner margin, digitate part with one distinct spine at apex, outer margin with one or two very short fine setae behind base, base well protrudent outward, subapical foramen at subapical area, with short seta (or setae), basal segment wide, with two short fine setae at outer apical area, hemisternites with short, rather sparse setae at apical area (Fig. 78); head, pronotum and elytra densely pubescent-punctate, punctures large; antennal segment 3 distinctly longer than segment 4, rather densely pubescent; palpi distinctly pubescent, apical segment subcylindrical or somewhat dilated at middle, penultimate segment of labial palpi with some setae on inner side (Fig. 4); elytra with shoulder somewhat protrudent forward, basal border forming obtuse angle or narrowly rounding at shoulder, becoming indistinct inwards; tarsi densely pubescent dorsally, segment 5 spinose ventrally; ventral side densely pubescent-punctate throughout, prosternal process unbordered; aedeagus narrow, well bent at basal third, basal third well perpendicular, basal bulb fully bilobed, apical lamella simple, symmetric (Fig. 79)..... *Eochlaenius*

Genus *Callistomimus* CHAUDOIR

Remarks. The female genitalia resemble those of *Callistus* BONELLI (Fig. 1). The apical segment of *Callistomimus* (*Callistomimus*) *okutanii* HABU (Fig. 2) is somewhat translucent on the inner margin around the base of the spine, but I do not know whether this characteristic is specific or generic.

Only *C.* (*Callistomimus*) *modestus* (SCHAUM) is (or was) distributed in Japan though very rare (HABU, 1981). The subgenus *Pristomachaerus* BATES is distinguishable from the nominate subgenus in having the pronotum with the basal angles acutely

protrudent in a lateroposterior direction, though, according to ANDREWES, 1921, there are some intermediate forms.



Figs. 1, 2. Female genitalia of Callistini.
1. *Callistus lunatus* (FABRICIUS) from Czechoslovakia. 2. *Callistomimus* (*Callistomimus*) *okutanii* HABU from N. China (T. OKUTANI leg.).

Genus *Chlaenius* BONELLI

Key to groups of Japanese *Chlaenius*

1. Palpi with dilated apical segment (Figs. 6, 12)..... 2
— Palpi with apical segment subcylindrical or a little dilated..... 3
2. Palpi glabrous (Fig. 6); pronotum almost as long as wide, lateral margins not sinuate posteriorly; mandibles longer than usual..... 6. *chuji*-group
— Palpi distinctly setose (Fig. 12); pronotum distinctly wider than long, lateral margins shallowly sinuate before basal angles; mandibles normal, short ..... 17. *nigricans*-group
3. Entirely black; elytral intervals in even number with yellowish pubescence, intervals in odd number with dark pubescence..... 2. *gebleri*-group
— Metallic green or blue or purplish or aeneous wholly or partially, legs not black; elytral intervals in even number and odd number with pubescence same in colour 4
4. Elytra with yellowish lateral fascia..... 5
— Elytra without lateral fascia 9
5. Elytra wholly, densely pubescent 6
— Elytra densely pubescent on lateral to apical yellowish fascia 8
6. Antennae with segment 3 distinctly longer than segment 4; tarsi densely pubescent dorsally ..... 10. *callichloris*-group
— Antennae with segment 3 a little longer than to as long as segment 4 7
7. Penultimate segment of labial palpi glabrous on inner side; pronotum with marginal setae in basal angles; apical segment of styluses multispinose on

ventral side (Figs. 23–25) ..... 4. *inops*-group

— Penultimate segment of labial palpi with some distinct setae on inner side (cf. Fig. 13); pronotum with marginal setae before basal angles; apical segment of styluses with one seta or spine only on inner margin (Figs. 61, 63) ..... 12. *pericallus*-group (partim)

8. Labial palpi with penultimate segment with some distinct setae on inner side (Fig. 10); apical segment of styluses with one spine on both inner and outer margins (Fig. 56) ..... 11. *circumdatus*-group

— Labial palpi with penultimate segment almost glabrous on inner side; apical segment of styluses with one spine only on inner margin (Fig. 57) ..... 16. *spoliatus*-group

9. Fore femora of ♂ with one small acute tooth near base (Fig. 26); elytra with yellowish subapical patch; apical segment of styluses multispinose on outer margin (Figs. 31–33) except in *bimaculatus* (Fig. 39) ..... 5. *bimaculatus*-group

— Fore femora of ♂ and ♀ without tooth near base 10

10. Elytra sparsely punctate and glabrous on inner intervals except apical area, punctures becoming dense and pubescent on outer and apical areas; pronotum sparsely punctate, with yellowish lateral margins; palpi completely glabrous (Fig. 5) ..... 1. *ceylanicus*-group

— Elytra punctate otherwise 11

11. Elytra wholly densely pubescent-punctate or pubescent-granulate, mat 12

— Elytra with inner intervals convex, with row of pubescent punctures along striae on either side, smooth and glabrous in middle between striae except apical area 17

12. Prosternal process not bordered 13

— Prosternal process bordered 16

13. Penultimate segment of labial palpi almost glabrous on inner side; antennal segment 3 as long as segment 4; elytra without macula, with basal border forming wide obtuse angle at shoulder; apical segment of styluses with many dense spines on ventral side (Fig. 20) ..... 3. *stschukini*-group

— Penultimate segment of labial palpi with either two distinct setae near apex on inner side or some distinct setae on inner side; antennal segment 3 generally more or less longer than segment 4; apical segment of styluses not multispinose 14

14. Pronotum with marginal setae a little before basal angles; penultimate segment of labial palpi with only two distinct setae near apex on inner side (Fig. 8); apical segment of styluses with two spines on outer margin (Figs. 52–54) ..... 9. *variicornis*-group

— Pronotum with marginal setae more before basal angles; penultimate segment of labial palpi with some distinct setae on inner side; apical segment of styluses without any spine on outer margin (Figs. 61, 62, 71) 15

15. Pronotum not distinctly transverse; aedeagus slender, with basal bulb hardly bilobed, inner stripe simple (Fig. 64) ..... 13. *pallipes*-group

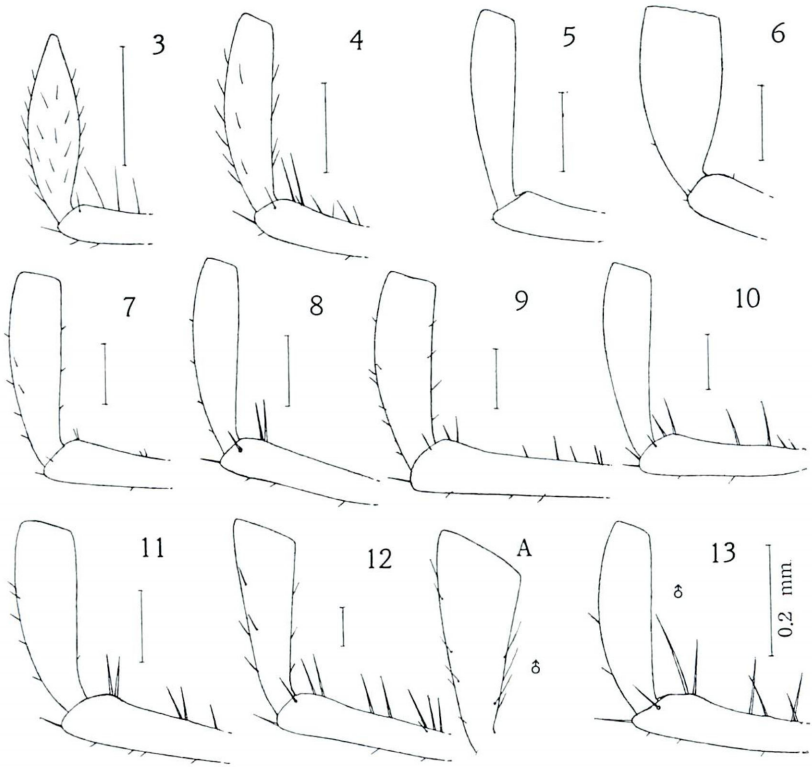
— Pronotum rather transverse, somewhat discoid; aedeagus less slender, with basal bulb fairly bilobed, inner stripe more or less coiled (Figs. 58, 59) ..... 12. *pericallus*-group (partim)

16. Aedeagus somewhat twisted to left side at subapical area, dorsal membranous part with pubescent area near middle of aedeagus, inner sack well chitinized at apical half, without usual slender stripe (Figs. 46–48) ..... 8. *virgulifer*-group
— Aedeagus not twisted, without pubescent area on dorsal membranous part, inner sack not well chitinized, with slender coiled stripe (Figs. 36–38) ..... 7. *micans*-group
17. Elytral intervals somewhat costate; aedeagus stout, fully deeply split at basal part, apex reflexed, without apical lamella, inner sack without slender stripe (Fig. 67); apical segment of styluses unarmed on inner and outer margins (Fig. 75) ..... 18. *costiger*-group
— Elytral intervals convex, but not costate; aedeagus less stout, not deeply split at basal part, apical lamella asymmetric, inner sack with slender stripe (Figs. 69, 70); apical segment of styluses with one spine on inner margin (Figs. 72, 74) 18
18. Pronotum somewhat cordate, lateral margins distinctly sinuate before well angulate basal angles; head glabrous, without or with several punctures; prosternal process not or faintly bordered ..... 15. *noguchii*-group
— Pronotum not cordate, lateral margins shallowly sinuate before basal angles, basal angles not well angulate; head with large dense pubescent punctures; prosternal process bordered at least at apex ..... 14. *praefectus*-group

1. *ceylanicus*-group (*Hololeius* LAFERTÉ)

Characteristics. Head glabrous though densely, finely punctate; antennal segment 3 as long as segment 4, glabrous except for apical setae; apical segment of palpi narrow, almost cylindrical, maxillary and labial palpi (Fig. 5) completely glabrous. Pronotum transverse, with somewhat large, scattered punctures and fine dense punctures, not pubescent; lateral margins narrowly bordered, yellowish, not or hardly sinuate posteriorly; marginal setae in basal angles. Elytra rather shiny, not fasciate nor maculate, with somewhat large, scattered punctures, punctures becoming a little denser laterally and apically, rather densely pubescent only on lateral to apical areas; intervals flat; striae shallower than usual; basal border complete, angulate at shoulder. Fore femora of ♂ without tooth near base; tarsi glabrous dorsally. Ventral side of thorax sparsely pubescent, densely punctate laterally, sternites densely pubescent-punctate, punctures fine; prosternal process not bordered. Aedeagus (Fig. 15) well curved, ventral side somewhat undulate, basal perpendicular part distinct; basal bulb not bilobed; apical lamella simple, almost symmetric; inner sack with slender curved stripe, stripe branched and somewhat coiled at basal part. Basal segment of styluses (Fig. 19) very wide, fully dilated apically, with some thirteen rather long, distinct setae at apical area, row of setae longer than in two following groups, reaching inner apical area; apical segment short, fully shorter than

apical segment, as long as wide to a little longer than wide, fully wide at basal half, base hardly protrudent outward, basal part unusually



Figs. 3–13. Right labial palpi of Callistini in ventral view, ♀ (except Figs. 12, A and 13).

3. *Callistomimus* (*Callistomimus*) *okutanii* HABU from N. China (T. OKUTANI). 4. *Eochlaenius suvorovi* SEMENOW from Tsuchiai, Urawa, Saitama Pref. (A. HABU). 5. *Chlaenius ceylanicus* NIETNER from Takara Is., Tokaras, Satsunans (S.-I. UÉNO). 6. *C. chuji* JEDLIČKA from Okinawa Is., Ryukyus (T. KITANO, through Mr. Y. MIYAKE). 7. *C. bimaculatus lynx* CHAUDOIR from Mt. Bannadake, Ishigaki Is., Ryukyus (S. KASAHARA). 8. *C. variicornis* MORAWITZ from Yagyû, Kitakawabe, Saitama Pref. (A. HABU). 9. *C. micans* (FABRICIUS) from Warabi, Saitama Pref. (A. HABU). 10. *C. circumdatus* BRULLÉ from Warabi, Saitama Pref. (A. HABU). 11. *C. hamifer* CHAUDOIR from Mt. Bannadake, Ishigaki Is., Ryukyus (S. KASAHARA). 12. *C. nigricans* WIEDEMANN from Yusawa, Niigata Pref. (K. BABA). A. apical segment in ♂ from Fukue Is., Gotòs, Nagasaki Pref. (K. SHIRAHATA). 13. *C. guttula* CHAUDOIR (♂) from Mt. Bannadake, Ishigaki Is., Ryukyus (S. KASAHARA).

dilated inward, inner margin with two or three distinct, more or less curved spines, ventral side with numerous spines (about thirty spines including spines on outer margin in *ceylanicus*), subapical foramen normal or a little proximal, with two rather short but distinct setae ; hemisternites with several somewhat long stout setae at apical membranous part.

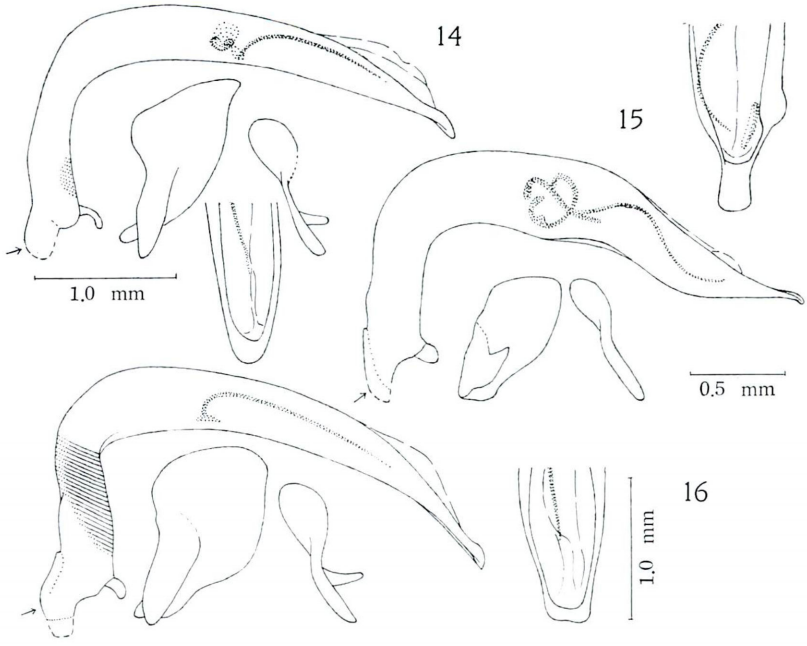
Remarks. Only *C. ceylanicus* NIETNER (= *nitidulus* DEJEAN, nec *nitidulus* SCHRANK) (Figs. 5, 15, 19) is distributed in southern islands of Japan. The genus *Hololeius* was established because of the mentum tooth being simple, but the tooth is either dully bifid or almost truncate at its apex in *C. ceylanicus* and of no generic value[2] ; *C. posticalis* MOTSCHULSKY, *C. micans* (FABRICIUS), *C. abstersus* BATES etc. have also the mentum tooth almost truncate at the apex. *C. ceylanicus* is, however, characteristic in having the elytra punctate ununiformly and pubescent partly, and the styluses with the apical segment unusual in its form.

This and the four following species of our fauna have the styluses densely spinous, and this characteristic seems to be unique only in the Callistini, but occurs almost world-widely :— for example, *C. nigricornis* (FABRICIUS) (Fig. 18) and *C. vestitus* (PAYKULL) (Fig. 24) in Europe, *C. simulatus* BOHEMAN and *C. ammon* (FABRICIUS) in Africa (after POMEROY, 1932), *C. alternatus* HORN, *C. purpuricollis* RANDALL etc. in North America (after BELL, 1960). BELL puts twenty-five North American species with the styluses densely spinose in the subgenus *Agostenus*.

2. *gebleri*-group (*Agostenus* MOTSCHULSKY)

Characteristics. Wholly black in colour. Head not punctate nor pubescent ; antennal segment 3 almost as long as segment 4, glabrous except for apical setae ; apical segment of palpi narrow, almost cylindrical, penultimate segment of labial palpi with two very short setae near apex on inner side. Pronotum distinctly transverse, base fully wider than apex ; surface irregularly pubescent-punctate, punctures large ; lateral margins thickly bordered, black, not sinuate posteriorly ; marginal setae in basal angles. Elytra mat (less mat on intervals in odd numbers), not fasciate nor maculate, densely pubescent-punctate, intervals somewhat convex, intervals 2, 4, 6 and 8 a little narrower than intervals 3, 5 and 7, with punctures a little denser than on other intervals, with pubescence yellowish, other intervals with pubescence dark ; basal border complete, rounding at shoulder. Fore femora of ♂ without tooth near base ; tarsi glabrous on dorsal side. Ventral side of thorax and abdomen densely pubescent-punctate ; prosternal process not bordered. Aedeagus (Fig. 16) slender, well bent at about basal third, basal perpendicular part distinct, densely, strongly rugose, rugose area wide ; basal bulb not well

[2] POMEROY, 1932, treats *Hololius* (= *Hololeius*) as a subgenus in the text though as a distinct genus in Fig. 37.



Figs. 14–16. Male genitalia of *Chlaenius* spp.
14. *C. stschukini* MÉNÉTRIÈS from Asahikawa, Hokkaido (H. INOUYE).
15. *C. ceylanicus* NIETNER from Takara Is., Tokaras, Satsunans (S.-I. UÉNO).
16. *C. gebleri* GANGLBAUER from Sechiriputo, Kushiro, Hokkaido (S. AOYAMA, through Mr. H. INOUYE).

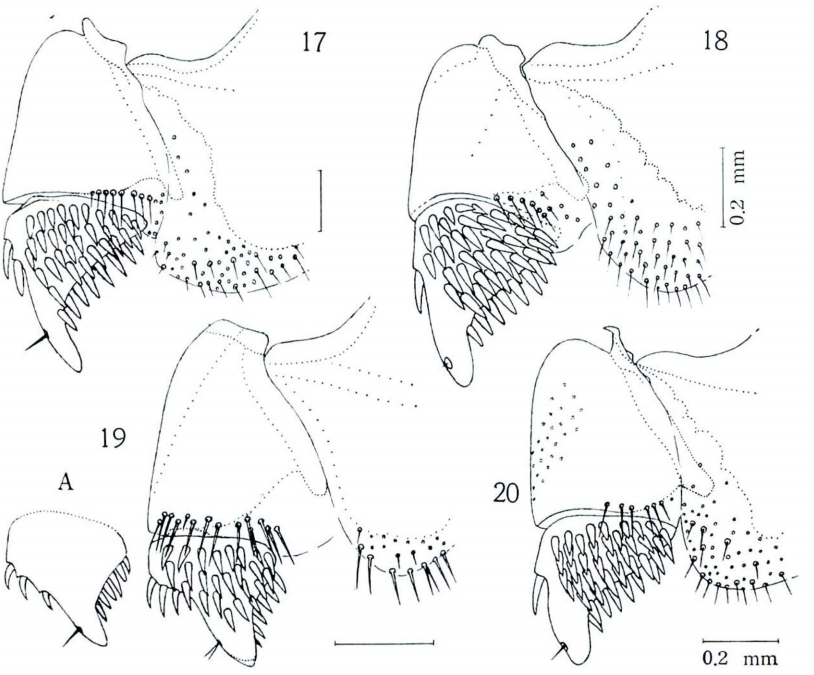
bilobed; apical lamella hardly asymmetric; inner sack with slender, not coiled stripe. In styluses (Fig. 17) basal segment fully wide, well dilated posteriorly, with transverse row of about eight somewhat long, fine setae at outer half of apical area; apical segment fully wide at basal half, fairly narrow at apical third, outer basal angle dully protrudent, but not prolonged outward, inner margin with two rather long, stout spines at basal third, with numerous (some thirty including spines on outer margin in *gebleri*) somewhat long, stout spines, subapical foramen transferred more proximally than usual, at apical fourth, with two somewhat long setae; hemisternites with well sclerotized part, with several rather short to somewhat long, fine setae and rather many small non-setiferous pores on apical membranous part.

Remarks. C. gebleri GANGLBAUER (Figs. 16, 17) distributed in Hokkaido and Honshu (Kantô District) though rare, is fairly characteristic in its black colouration including appendages, and the state of the pubescence of the elytra.

The larva of the North American *C. niger* RANDALL belonging to the *niger*-group, which is probably identical with my *gebleri*-group, has "comparatively short, nodose cerci" (after LINDROTH, 1969), which must be of a fixed and rigid type.

3. *stschukini*-group (*Naelichus* LUTSHNIK)

Characteristics. Head sparsely pubescent-punctate; antennal segment 3 as long as segment 4, with some setae besides apical setae; apical segment of palpi almost cylindrical or slightly tumid apically, maxillary palpi glabrous, penultimate segment of labial palpi with one very short seta near apex on inner side. Pronotum transverse, with large dense pubescent punctures throughout; lateral margins finely bordered and black, not sinuate posteriorly; marginal setae in basal angles. Elytra



Figs. 17–20. Female genitalia of *Chlaenius* spp.
17. *C. gebleri* GANGLBAUER from Ishikari, Hokkaido (M. MORI). 18. *C. nigricornis* (FABRICIUS) from Germany. 19. *C. ceylanicus* NIETNER from Ishigaki Is., Ryukyus (S. AZUMA). A. apical segment of styluses (ventral spines omitted) in other specimen from Takara Is., Tokaras, Satsunans (T. NAKANE). 20. *C. stschukini* MÉNÉTRIÈS from Asahikawa, Hokkaido (H. INOUYE).

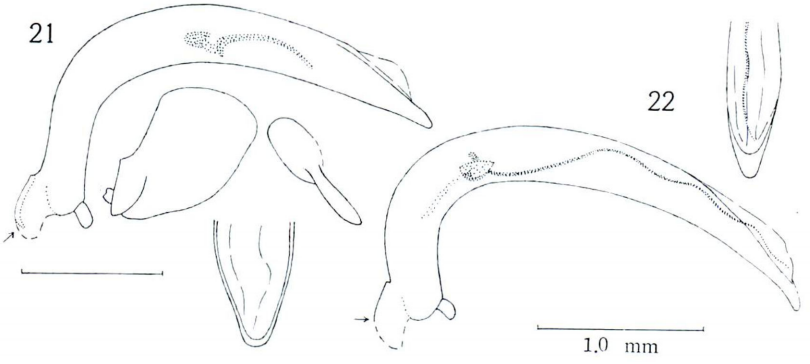
mat, not fasciate nor maculate, uniformly, densely pubescent-punctate and rugose throughout; intervals flat; basal border complete, forming wide obtuse angle at shoulder. Fore femora of ♂ without tooth near base; tarsi almost glabrous on dorsal side. Ventral side of thorax and abdomen densely pubescent-punctate; prosternal process unbordered. Aedeagus (Fig. 14) slender, fairly curved, basal perpendicular part rather distinct; basal bulb not well bilobed; apical lamella simple, symmetric; inner sack with simple slender stripe. Basal segment of styluses (Fig. 20) fully wide, well dilated apically, widely, well rounded at base, with transverse row of six long, not stout setae at outer half of apical area; apical segment gently reflexed dorsally at apical half, short, shorter than basal segment, a little longer than wide at base, fully wide at basal half, somewhat narrow at apical third, outer basal angle not prolonged outward, inner margin with one long stout spine before middle, ventral side with dense stout spines (nearly forty spines including spines on outer margin in *stschukini*), subapical foramen normal in position, with two setae rather short; hemisternites with sclerotized part not reaching apex, with rather short, fine, somewhat dense setae and numerous smaller non-setiferous pores on apical membranous part.

Remarks. Only *C. stschukini* MÉNÉTRIÈS (Figs. 14, 20) distributed in Hokkaido and rare, is comprised in this group.

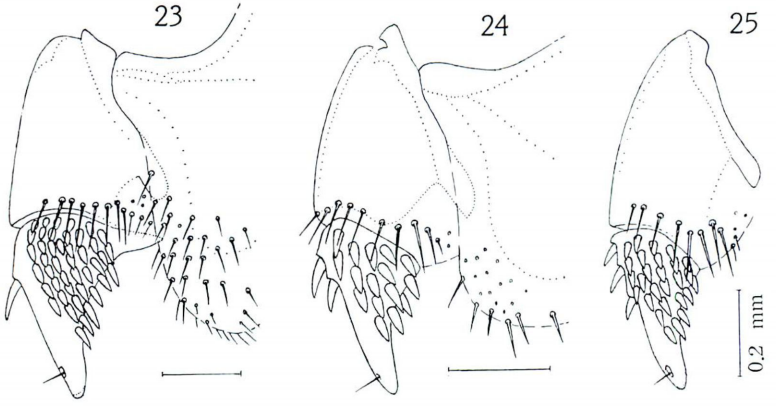
4. *inops*-group (*Chlaeniellus* REITTER)

Characteristics. Head more or less densely, finely punctate, not pubescent at central area, sparsely pubescent near eyes; antennal segment 3 as long as or a little longer than segment 4, sparsely to somewhat densely pubescent; apical segment of palpi almost cylindrical or subcylindrical, maxillary palpi completely glabrous, penultimate segment of labial palpi glabrous on inner side. Pronotum transverse (*circumductus*) or not so transverse; surface with large, dense (*circumductus*) or a little less dense (*inops* and *vestitus*), pubescent punctures; lateral margins a little widely explanate-reflexed and yellowish, not sinuate or sinuate (*vestitus*) before basal angles; marginal setae in basal angles. Elytra mat, with yellowish lateral fascia from shoulder to apex, fascia dilated at apical area; surface densely pubescent-punctate (punctures smaller in *inops* than in *vestitus*) or densely, finely, pubescent-granulate (*circumductus*); intervals somewhat convex; basal border complete, forming wide obtuse angle or almost rounding at shoulder. Fore femora of ♂ without tooth near base; tarsi glabrous on dorsal side. Ventral side of thorax and abdomen densely pubescent-punctate throughout; prosternal process

not bordered. Aedeagus[3] (Figs. 21, 22) slender, fairly curved, basal vertical part rather distinct (less distinct in *circumductus*), basal bulb hardly (*circumductus*) or somewhat distinctly (*inops*) bilobed; apical lamella simple, not asymmetric; inner sack with slender, not coiled stripe (stripe relatively short in *circumductus*, long in *inops*). Basal segment of styluses (Figs. 23–25) wide, dilated apically, with seven to nine fairly



Figs. 21, 22. Male genitalia of *Chlaenius* spp.
21. *C. circumductus* MORAWITZ from Urawa, Saitama Pref. (H. KAJIMURA).
22. *C. inops* CHAUDOIR from Kurokawa, Niigata Pref. (K. BABA).



Figs. 23–25. Female genitalia of *Chlaenius* spp.
23. *C. circumductus* MORAWITZ from Warabi, Saitama Pref. (A. HABU).
24. *C. vestitus* (PAYKULL) from Germany. 25. *C. inops* CHAUDOIR from Maebaru, Fukuoka Pref. (A. HABU).

3) The male specimens of *C. vestitus* I have examined are all teneral in the genitalia.

long, distinct setae, row of setae reaching (*vestitus*) or not reaching inner margin; apical segment wide at basal two-thirds, with base prolonged outward (*circumductus*), or relatively narrow, with base not prolonged outward though a little protrudent (*inops* and *vestitus*), narrowed apically, inner margin with one to three (one in *circumductus*, two or three in *vestitus*, three in *inops*) somewhat long, more or less stout spines, ventral side with many stout spines (sixteen to twenty-one in *vestitus*, less than to more than thirty in *inops*, more than forty in *circumductus* including some spines on outer margin), subapical foramen normal in position, with rather short or somewhat long, distinct setae; hemisternites sparsely setose at apical area (*inops* and *vestitus*), or rather densely setose at apical to subapical area (*circumductus*), setae moderately long.

Remarks. *C. inops* CHAUDOIR (Figs. 22, 25) and *C. circumductus* MORAWITZ (Figs. 21, 23) are included in this group, but the latter species is somewhat different from *C. inops* as well as *C. vestitus* (PAYKULL) in some characteristics. *C. prostenus* BATES (Fig. 77) seems to belong to this group, but the female being unknown to me, I placed it in the final undecided group.

The larvae of *C. inops* and *C. circumductus* have the cerci of a fixed and rigid type (after TANAKA, 1956; KUROSA, 1959; HABU and SADANAGA, 1961 and 1965).

5. *bimaculatus*-group (*Ocybatoides* JEANNEL)

Characteristics. Head densely, more or less distinctly punctate, glabrous, or with some very short, indistinct pubescence; antennal segment 3 almost as long as segment 4, with a few short setae; apical segment of palpi (Fig. 7) a little dilated (more dilated in ♂ of *bioculatus*), both palpi with fairly short, fine, scattered setae, penultimate segment of labial palpi with a few fairly short setae on inner side. Pronotum not distinctly transverse; surface densely, distinctly punctate (punctures less dense and less distinct in *bimaculatus*), glabrous or densely pubescent (*naeviger*); lateral margins finely bordered or reflexed, generally black,

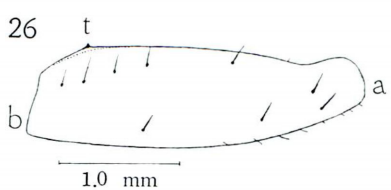
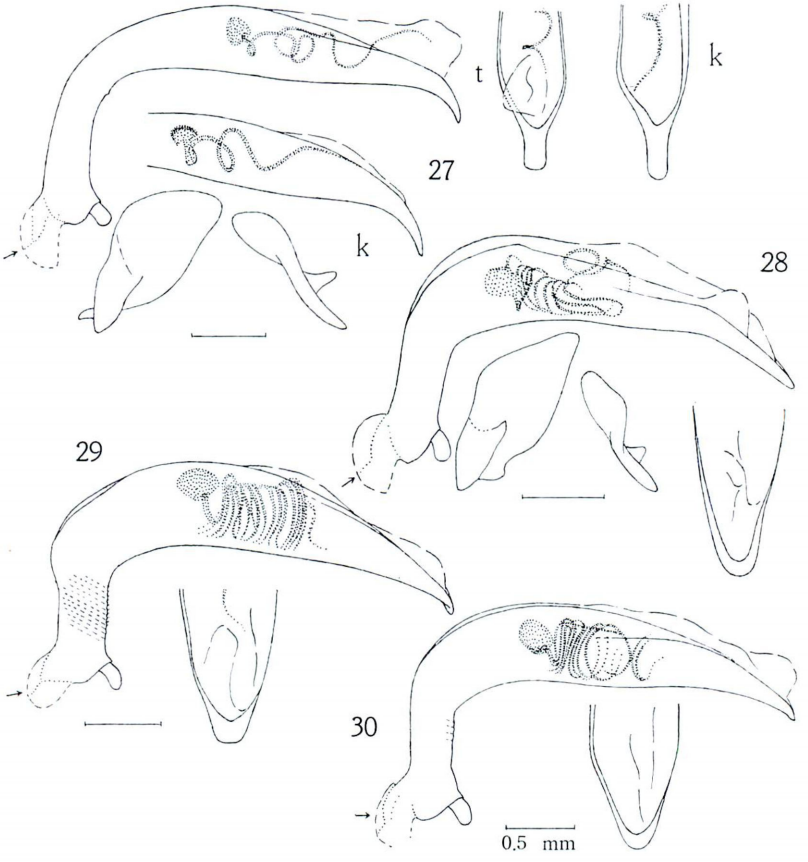


Fig. 26. Left fore femur (ventral view) of *Chlaenius bimaculatus lynx* CHAUDOIR from Okinawa Is., Ryukyus (T. KITANO, through Mr. Y. MIYAKE).
a: apex. b: base. t: tooth.

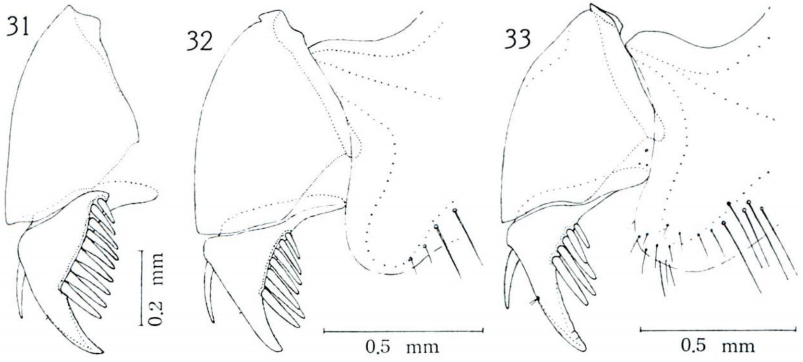
sometimes faintly reddish or yellowish, distinctly contracted and not or shallowly sinuate posteriorly; marginal setae before basal angles. Elytra mat, with dentate yellowish patch at subapical area, lateral margin black; surface densely pubescent-punctate, punctures small; intervals almost flat or somewhat convex; basal border complete, rounding or forming wide angle at shoulder. Fore femora of ♂ (Fig. 26) with small acute tooth near base; tarsi with very short, fine, sparse hairs (hairs a little



Figs. 27–30. Male genitalia of *Chlaenius* spp.
27. *C. naeviger* MORAWITZ. t. from Mt. Takao, Tokyo M. D. (J. MINAMIKAWA). k. Mt. Kongô, Nara Pref. (I. HIURA). 28. *C. bioculatus* CHAUDOIR from Mt. Bannadake, Ishigaki Is., Ryukyus (M. CHÛJÔ). 29. *C. bimaculatus lynx* CHAUDOIR from Tachen, Formosa (Y. MIYAKE). 30. *C. posticalis* MOTSCHULSKY from Angyô, Kawaguchi, Saitama Pref. (A. HABU).

longer in *naeviger*) on dorsal side, spines on ventral side of segment 5 a little longer and narrower than usual in *bimaculatus*. Ventral side sparsely pubescent (more pubescent in *naeviger*), thorax distinctly punctate at least on lateral areas; prosternal process bordered apically and laterally. Aedeagus (Figs. 27-30) narrow to a little stout, well curved, basal vertical part more or less distinct (vertical part hardly rugose and glabrous in one ex. from Ishigaki Is., distinctly rugose and with very short, fine, sparse pubescence in one ex. from Formosa (Fig. 29) in *bimaculatus lynx*), dorsal side without pubescent area, basal bulb somewhat bilobed; apical lamella short to rather long, simple, symmetric; inner sack with long, slender, more or less coiled stripe. Basal segment of styluses (Figs. 31-33, 39) wide, without setae; apical segment wide at basal half or more than half, becoming narrow apically, fully prolonged outward at base, inner margin with one fully long, stout spine behind base, outer margin well sinuate, with two fully long, stout spines (*bimaculatus*) or some long, closely inserted spines (four or five in *naeviger*, seven in *posticalis*, eight or nine in *bioculatus*), subapical foramen very small, opened behind middle instead of subapical area, without setae or with one or two very short, fine setae; hemisternites with some fine setae at apical membranous part.

Remarks. *C. bimaculatus lynx* CHAUDOIR (Figs. 26, 29, 39), *C. posticalis* MOTSCHULSKY (Figs. 30, 32), *C. bioculatus* CHAUDOIR (Figs. 28, 31) and *C. naeviger* MORAWITZ (Figs. 27, 33) compose this group in our fauna. The latter three species is characteristic in having the styluses with the apical segment multispinose on the outer margin, but I consider this characteristic of no value to define a group. The North American



Figs. 31-33. Female genitalia of *Chlaenius* spp.
31. *C. bioculatus* CHAUDOIR from Mt. Bannadake, Ishigaki Is., Ryukyus (M. CHÛJÔ). 32. *C. posticalis* MOTSCHULSKY from Chiba, Chiba Pref. (A. HABU). 33. *C. naeviger* MORAWITZ from Mt. Raizan, Maebaru, Fukuoka Pref. (A. HABU).

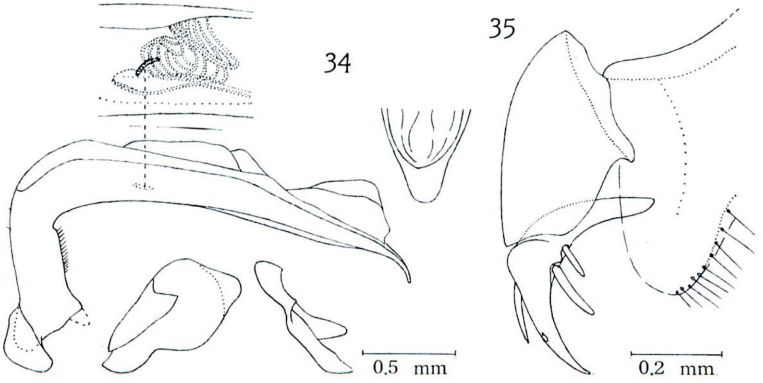
C. maxillosus HORN, to which BELL (1960) proposed the subgenus *Pseudanomoglossus*, has also the styluses with three or four spines on the outer margin of the apical segment, but the subapical foramen, according to BELL's figure, is normally opened at the subapical area, and therefore the *bimaculatus*-group and *Pseudanomoglossus* BELL must respectively be derived from diverse ancestors.

This group and the following *chuji*-, *micans*- and *virgulifer*-group are probably descended from a common ancestor, and all the species of these groups have the prosternal process completely bordered and the styluses similar in the structure, but there is some possibility that the last *virgulifer*-group has the other ancestor inasmuch as the aedeagus is far dissimilar.

The larvae of *C. posticalis* (after HABU and SADANAGA, 1965) and *C. naeviger* (after KUROSA, 1959) have the cerci of a fixed and rigid type.

6. *chuji*-group

Characteristics. Head densely, distinctly punctate, glabrous; antennal segment 3 distinctly shorter than segment 4, with a few very short setae; mandibles longer and less curved than usual; maxillary palpi glabrous, apical segment subcylindrical (♀) or a little dilated (♂) in maxillary palpi, well dilated in ♂ and ♀ in labial palpi (Fig. 6), penultimate segment of labial palpi with a few vestigial hairs at or near apex. Pronotum almost as wide as long, glabrous, irregularly punctate, punctures fully large; lateral margins finely explanate-reflexed, almost black or faintly brownish, distinctly contracted but not sinuate posteriorly; marginal setae far before basal angles. Elytra rather shiny, with yellowish subapical patch, lateral margin black; intervals convex, with



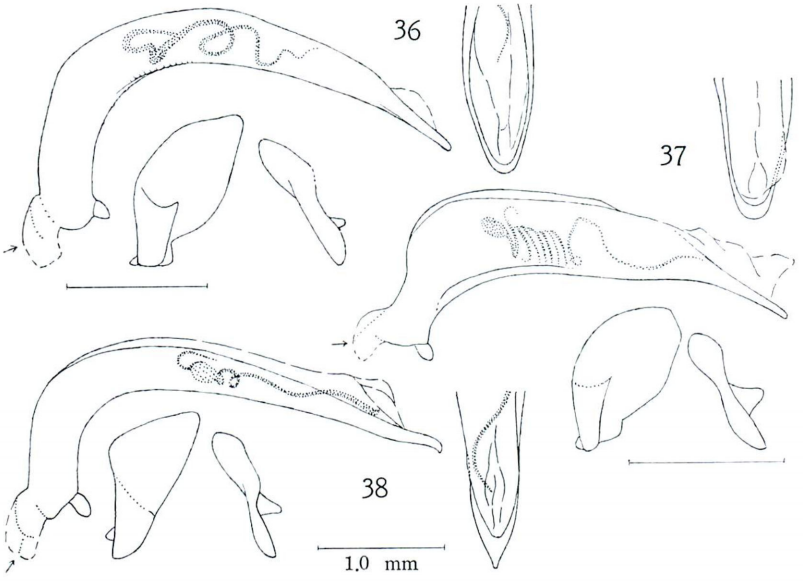
Figs. 34, 35. *Chlaenius chuji* JEDLIČKA from Satsunans (♂) and Ryukyus (♀) (vid. HABU, 1981).
34. Male genitalia. 35. Female genitalia.

rather large, dense, pubescent punctures along striae, with sparse similar pubescent punctures in middle between striae; basal border complete, almost rounding at shoulder. Fore femora of ♂ with small sharp tooth near base; tarsi with very short, fine, sparse setae dorsally, segment 5 with some long setae ventrally instead of spines. Ventral side of thorax with fully large, dense punctures, glabrous, sternites with smaller punctures, punctures with short pubescence; prosternal process bordered apically and laterally. Aedeagus (Fig. 34) narrow, well bent at basal third, basal perpendicular part distinct, with short dense pubescence on ventral side, with a few very short, fine, sparse setae on dorsal side, dorsal membranous part without pubescent area; basal bulb not bilobed; apical lamella simple, symmetric; inner sack with well coiled slender stripe. Styluses (Fig. 35) similar in structure to those of *bimaculatus*-, *micans*- and *virgulifer*-group, but narrower (probably corresponding with narrow body), outer margin without additional spines, subapical foramen without setae.

Remarks. *C. chuji* JEDLIČKA (Figs. 6, 34, 35) is the only representative in our fauna. This group is allied to the preceding one, but distinguishable from it by the longer mandibles, the labial palpi with a well dilated apical segment, and with an almost glabrous penultimate segment, and the irregular punctuation on the pronotum and the elytra.

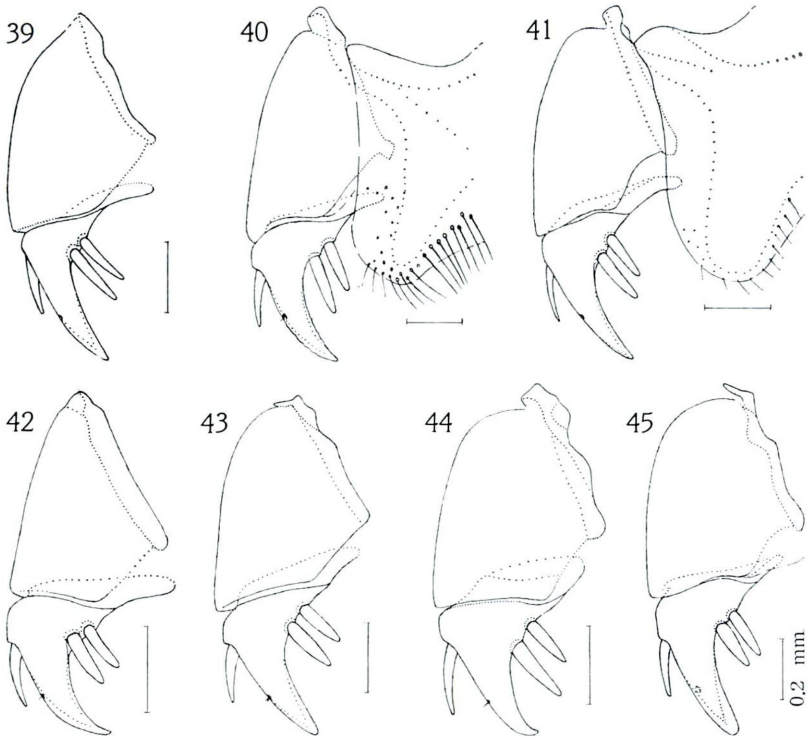
7. *micans*-group

Characteristics. Head densely (less densely in *leucops*), distinctly punctate and with some short (distincter than in *bimaculatus*-group) setae; antennal segment 3 longer than segment 4 (*micans*), or almost as long as segment 4 (*tetragonoderus* and *leucops*), with a few (*leucops*) or several short setae (*micans* and *tetragonoderus*) besides apical setae; palpi with very short, sparse setae, penultimate segment of labial palpi with some short but a little stout setae on inner side in *micans* (Fig. 9) and *leucops*, setae fewer, shorter and finer like in *bimaculatus lynx* (cf. Fig. 7) in *tetragonoderus*, apical segment somewhat dilated. Pronotum somewhat transverse; surface more or less densely, distinctly pubescent-punctate; lateral margins finely bordered, black or somewhat reddish, not sinuate posteriorly; marginal setae a little before basal angles (*leucops* and *tetragonoderus*) or fairly before basal angles (*micans*). Elytra mat, with yellowish subapical patch (absent in *leucops*), lateral margin black; surface with small dense pubescent punctures (punctures much smaller in *leucops*), or densely pubescent, but without punctures though surface rough owing to fine, close rugae; intervals flat or somewhat convex; basal border complete, rounding at shoulder or forming wide obtuse



Figs. 36–38. Male genitalia of *Chlaenius* spp.
36. *C. micans* (FABRICIUS) from Fukuoka, Fukuoka Pref. (S. MIYAMOTO). 37. *C. tetragonoderus* CHAUDOIR from Hainuzuka, Chikugo, Fukuoka Pref. (A. HABU). 38. *C. leucops* WIEDEMANN from Yoshii, Fukuoka Pref. (N. GYÔTOKU).

angle (*leucops*). Fore femora of ♂ without tooth near base; tarsi glabrous (*leucops*) or with sparse but rather distinct pubescence (*micans* and *tetragonoderus*) on dorsal side. Ventral side of thorax more or less pubescent-punctate, punctures fully dense, but not so large in *micans*, less dense, but larger in *tetragonoderus* and *leucops*, metepisterna not punctate in *leucops*; sternites with small dense pubescent punctures in *micans*, with finer, less dense, pubescent punctures in *tetragonoderus*, without punctures nor pubescence on apical three sternites in *leucops*; prosternal process bordered apically and laterally. Aedeagus (Figs. 36–38) slender, fairly curved, with basal vertical part rather distinct in *micans* and *leucops*, less slender, less curved, with basal vertical part fully shorter and not distinct in *tetragonoderus*, dorsal side without pubescent area; basal bulb somewhat bilobed in *micans* and *tetragonoderus*, hardly bilobed in *leucops*; apical lamella symmetric, apex deflexed in *leucops*; left paramere unusually truncate at apex in *tetragonoderus*; inner sack with long, slender, somewhat coiled (well coiled in *tetragonoderus*) stripe. Styluses (Figs. 40–42) similar to those of *bimaculatus*-group,



Figs. 39–45. Female genitalia of *Chlaenius* spp.

39. *C. bimaculatus lynx* CHAUDOIR from China. 40. *C. micans* (FABRICIUS) from Akigase, Urawa, Saitama Pref. (H. KAJIMURA). 41. *C. leucops* WIEDEMANN from Hiroshima, Hiroshima Pref. (K. TERADA). 42. *C. tetragonoderus* CHAUDOIR from Nomo, Nagasaki, Nagasaki Pref. (M. NODA). 43. *C. virgulifer* CHAUDOIR from Tsuchiai, Urawa, Saitama Pref. (A. HABU). 44. *C. hamifer* CHAUDOIR from Jihyue-tan, Formosa (K. MIYAKE). 45. *C. abstersus* BATES from Mt. Osore, Aomori Pref. (A. HABU).

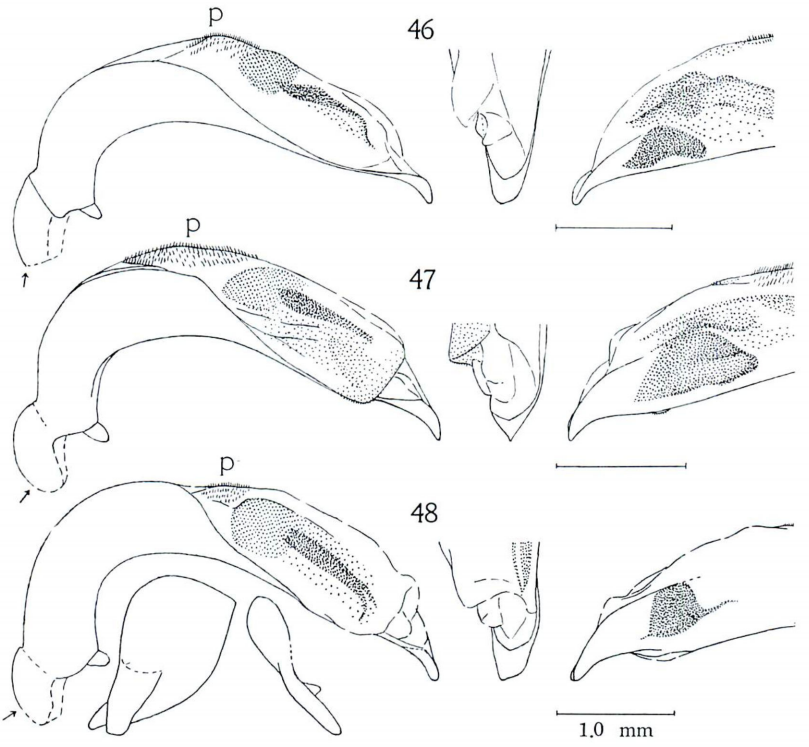
but apical segment with always two long stout spines on outer margin; hemisternites more or less setose at apical membranous part, setae fine.

Remarks. *C. micans* (FABRICIUS) (Figs. 9, 36, 40), *C. leucops* WIEDEMANN (Figs. 38, 41) and *C. tetragonoderus* CHAUDOIR (Figs. 37, 42) are included in this group, but they are somewhat different from one another. JEANNEL (1949) puts *C. leucops* in the following group, but I place it here owing to the structure of the aedeagus.

The larva of *C. micans* has the cerci of a fixed and rigid type (after HABU and SADANAGA, 1965).

8. *virgulifer*-group (*Pachydinodes* BURGEON, after JEANNEL, 1949)

Characteristics. Head densely punctate, glabrous; antennal segment 3 more or less shorter than segment 4, with a few setae besides apical setae; apical segment of palpi stout or a little dilated, maxillary palpi completely glabrous, penultimate segment of labial palpi (Fig. 11) with about five somewhat long, spinous setae on inner side. Pronotum more or less transverse, punctate, pubescent near base, punctures large, not dense; lateral margins finely bordered, more or less reddish, not sinuate before basal angles; marginal setae a little before basal angles. Elytra mat, concolorous and with lateral margin black in *abstersus*, with yellowish subapical patch, patch extending posteriorly along lateral margin and reaching apex (apicolateral to lateral margin yellowish) in



Figs. 46–48. Male genitalia of *Chlaenius* spp. p: pubescent area.
46. *C. virgulifer* CHAUDOIR from Yoshii, Fukuoka Pref. (N. GYÔTOKU).
47. *C. hamifer* CHAUDOIR from Yoshii, Fukuoka Pref. (N. GYÔTOKU).
48. *C. abstersus* BATES from Tsuchiai, Urawa, Saitama Pref. (A. HABU).

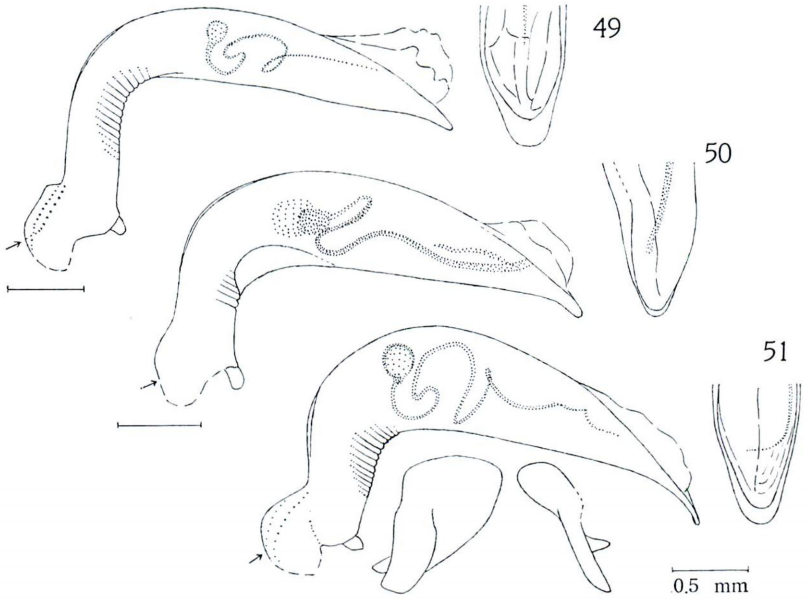
virgulifer and *hamifer*; surface with minute, fully dense, pubescent punctures in *abstersus*, fine, fully dense, pubescent granules in *virgulifer* and *hamifer*; intervals flat; basal border complete, rounding at shoulder. Fore femora of ♂ without tooth near base; tarsi glabrous on dorsal side. Ventral side of thorax with large, somewhat dense, pubescent punctures, sternites 4 to 6 smooth and glabrous; prosternal process completely bordered. Aedeagus (Figs. 46–48) characteristic, somewhat stout, well curved, gently twisted to left side at subapical area, basal vertical part not distinct, left lateral side very thin at apical half, dorsal membranous part with pubescent area near middle of aedeagus; basal bulb not or slightly bilobed; apical lamella simple, not or slightly asymmetric; inner sack with file-like part before pubescent area near dorsal side (dorsal membranous part also file-like at apex in *hamifer*), with somewhat long chitinized part just before file-like part, with one chitinized part at subapical area near right side, usual slender stripe absent. Styluses (Figs. 43–45) and hemisternites similar to those of preceding group.

Remarks. *C. virgulifer* CHAUDOIR (Figs. 43, 46), *C. hamifer* CHAUDOIR (Figs. 11, 44, 47) and *C. abstersus* BATES (Figs. 45, 48) are quite unusual in the structure of the aedeagus.

The larva of *C. virgulifer* is with the cerci of a fixed and rigid type (after HABU and SADANAGA, 1965).

9. *variicornis*-group

Characteristics. Head densely punctate, not pubescent; antennal segment 3 more or less longer than segment 4, with several setae besides apical setae; apical segment of palpi almost cylindrical, maxillary palpi glabrous, penultimate segment of labial palpi (Fig. 8) with two distinct setae at subapical area on inner side. Pronotum somewhat or rather transverse; surface with large dense pubescent punctures; lateral margins finely bordered, black, contracted and sinuate (*variicornis* and *ocreatus*) or not sinuate (*sericimicans*) posteriorly, marginal setae a little before basal angles. Elytra mat, not fasciate nor maculate, fully densely pubescent-punctate; intervals flat; basal border complete, rounding at shoulder. Fore femora of ♂ without tooth near base; tarsi with very short, sparse setae on dorsal side. Ventral side of thorax and abdomen densely, distinctly pubescent-punctate; prosternal process unbordered. Aedeagus (Figs. 49–51) somewhat stout (stouter in *variicornis*), basal perpendicular part short (*variicornis* and *sericimicans*) or moderately long (*ocreatus*), distinctly, more or less rugose in part; basal bulb not well bilobed; apical lamella more or less short, simple, symmetric; inner sack with long slender stripe, stripe somewhat coiled or well curved at

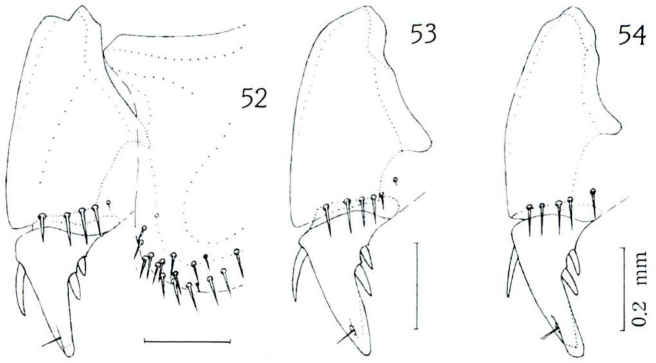


Figs. 49–51. Male genitalia of *Chlaenius* spp.
49. *C. ocreatus* BATES from Kurokawa, Niigata Pref. (K. BABA). 50. *C. sericimicans* CHAUDOIR from Takada, Niigata Pref. (K. BABA). 51. *C. variicornis* MORAWITZ from Yagyû, Kitakawabe, Saitama Pref. (A. HABU).

basal part. In styluses (Figs. 52–54) basal segment not or a little wide, with transverse row of four to six rather long stout setae at apical area, innermost seta distant from inner margin; apical segment somewhat (not fully) prolonged outward at base, a little wide at basal half, narrow at apical half, not or weakly curved, inner margin with one fairly long spine behind base (near base in *variicornis*), outer margin with two more or less stout spines before middle, spines a little shorter than inner spine (fairly shorter than in preceding group), subapical foramen at subapical area, with a little long, distinct setae; hemisternites with a little long, somewhat stout, spinous, rather dense setae at apical membranous part.

Remarks. *C. variicornis* MORAWITZ (Figs. 8, 51, 53), *C. ocreatus* BATES (Figs. 49, 54) and *C. sericimicans* CHAUDOIR (Figs. 50, 52) belong to this group, in which the styluses seem to retain standard characteristics.

The larvae of *C. variicornis* (after KUROSA, 1959; HABU and SADANAGA, 1961) and *C. sericimicans* (after TANAKA, 1956; HABU and SADANAGA, 1969) have the cerci of a fixed and rigid type.



Figs. 52–54. Female genitalia of *Chlaenius* spp.
52. *C. sericimicans* CHAUDOIR from Fujioka, Tochigi Pref. (A. HABU).
53. *C. variicornis* MORAWITZ from Kurashiki, Okayama Pref. (T. AONO).
54. *C. ocreatus* BATES from Sandankyô, Hiroshima Pref. (K. BABA).

10. *callichloris*-group (? *Pseudochlaeniellus* JEANNEL)

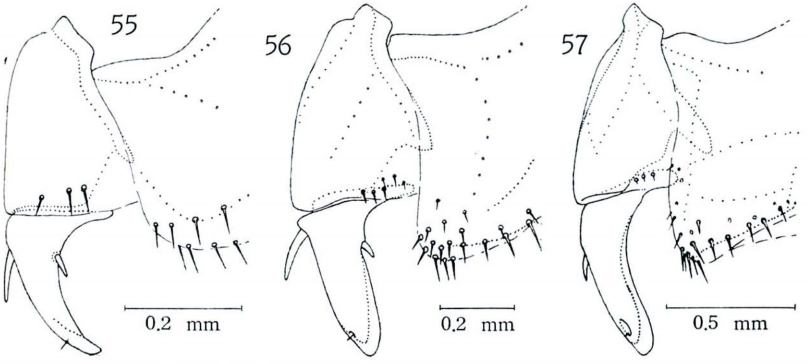
Characteristics. Head with large dense pubescent punctures, punctures almost absent at central area between eyes; antennal segment 3 distinctly longer than segment 4, rather densely (but less densely than segment 4) pubescent; apical segment of palpi narrow, subcylindrical, penultimate segment with some setae (apical two setae rather long) in maxillary palpi, with a few somewhat long setae on inner side in labial palpi; mentum tooth wider than usual, widely rounded at apex (aberration?). Pronotum transverse, with large dense pubescent punctures; lateral margins narrowly reflexed, yellowish, distinctly sinuate before basal angles which are very distinct, a little less than 90°; marginal setae in basal angles. Elytra mat, with yellowish marginal fascia, with fine dense pubescent granules; intervals a little convex; basal border complete, obtusely angulate at shoulder. Fore femora of ♂ not examined; tarsi densely pubescent dorsally, segment 5 pubescent ventrally instead of being spinose. Ventral side densely pubescent-punctate, punctures on sternites small; prosternal process bordered apically and laterally. Male genitalia not known. In styluses (Fig. 55) basal segment fairly dilated posteriorly, with three somewhat long setae at subapical area of sclerotized part; apical segment well curved, narrow at apical two-thirds, base fairly protrudent outward, inner margin with long rather stout spine at basal fourth, outer margin deeply sinuate, with single, rather short, a little stout spine at basal third, subapical foramen with one (?) fully short seta; hemisternites with several somewhat long, a little stout setae

on apical membranous part.

Remarks. I have examined only one female specimen of *C. callichloris* BATES (Fig. 55) from Formosa thanks to Dr. S.-I. UÉNO. It seemingly resembles *C. inops* CHAUDOIR or *C. vestitus* (PAYKULL) of the *inops*-group, but is far distant from them.

11. *circumdatus*-group (*Chlaeniostenus* LUTSHNIK)

Characteristics. Head with large sparse pubescent punctures, almost impunctate and glabrous at central area; antennal segment 3 distinctly longer than segment 4, somewhat densely setose besides apical setae; apical segment of palpi narrow, almost cylindrical, maxillary palpi glabrous, penultimate segment of labial palpi (Fig. 10) with some distinct setae on inner side. Pronotum not distinctly transverse, somewhat cordate; surface with large irregular scattered punctures, not pubescent; lateral margins finely bordered, black, sinuate posteriorly; marginal setae far before basal angles. Elytra mat though with somewhat metallic tinge, with yellowish fascia on lateral area; intervals convex, without punctures, with rather sparse pubescence on lateral to apical yellowish area, with one row of sparse hairs near striae on either side on black area (intervals 1 to 7); basal border complete, forming distinct obtuse angle at shoulder. Fore femora of ♂ without tooth near base; tarsi almost glabrous or with very short, fine scattered pubescence on dorsal side. Ventral side of thorax with large, rather dense, pubescent punctures, punctures sparse or almost absent medially, sternites densely,



Figs. 55–57. Female genitalia of *Chlaenius* spp.
55. *C. callichloris* BATES from Wankyo, near Kagi, Formosa (Y. YANO, through Dr. S.-I. UÉNO). 56. *C. circumdatus* BRULLÉ from Sakazu, Kurashiki, OKAYAMA Pref. (T. AONO). 57. *C. spoliatus motchulskyi* ANDREWES from Higashine, Yamagata Pref. (K. SHIRAHATA).

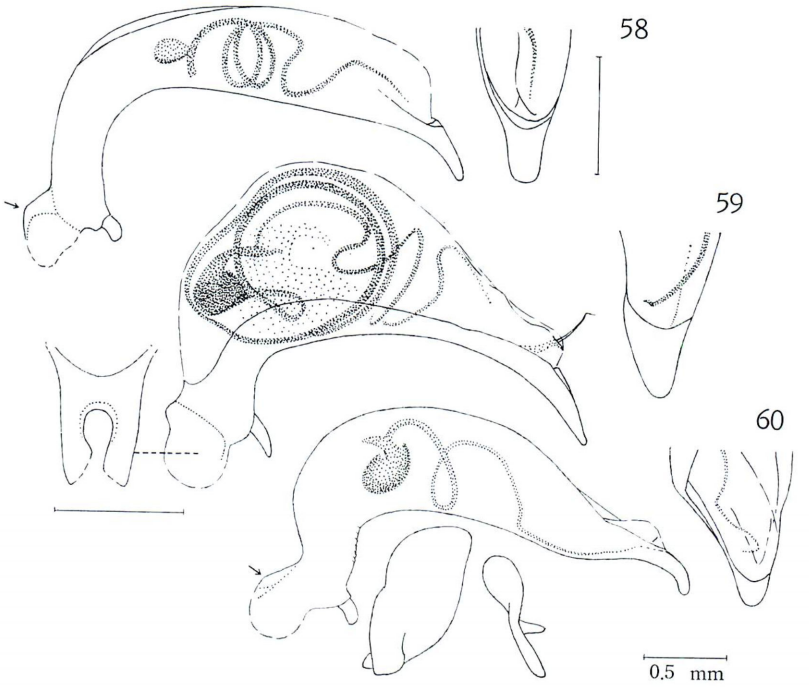
finely pubescent-punctate; prosternal process bordered at least at apical area. Aedeagus (Fig. 65) somewhat slender, less curved than usual, without basal perpendicular part; basal bulb fairly bilobed; apical lamella long, symmetric, thickly bordered at apex on dorsal side; inner sack with simple slender stripe; left paramere truncate at apex. In styluses (Fig. 56) basal segment wide, with four to six short setae at outer apical area; apical segment somewhat long, hardly narrowed apically, hardly or a little curved, base well prolonged outward, dully but distinctly protrudent inward, inner margin with fully long, fairly stout spine behind base, outer margin with one rather short, hardly stout spine at about basal third, subapical foramen with one (?) fully short seta; hemisternites with sclerotized part almost reaching apex, with several short to somewhat long distinct setae at apical area.

Remarks. This group contains *C. circumdatus* BRULLÉ (Figs. 10, 56, 65) and is easily distinguishable from the foregoing groups by the elytra not punctate.

The larva of this species has the cerci of a movable and flexible type (after TANAKA, 1956; KUROSA, 1959; HABU and SADANAGA, 1961).

12. *pericallus*-group (*Callistoides* MOTSCHULSKY, after JEANNEL, 1949)

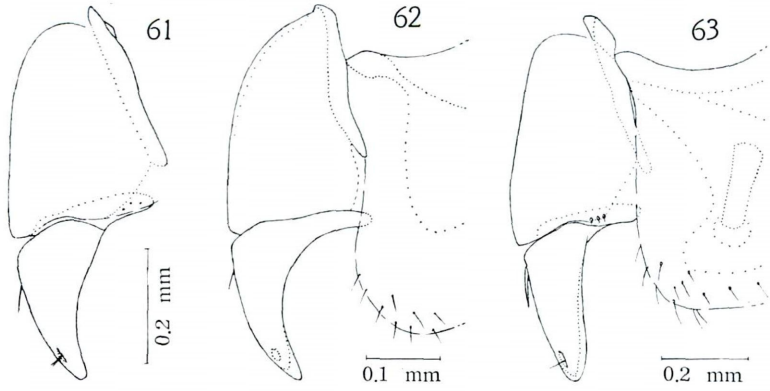
Characteristics. Head densely, distinctly pubescent-punctate; antennal segment 3 fully longer (a little longer or as long as in *guttula*) than segment 4, rather densely (but not so densely as segment 4) pubescent; palpi with very short, very sparse pubescence, apical segment subcylindrical, penultimate segment with a few distinct setae at apical area in maxillary palpi, with some relatively long spinous setae (a little longer in *guttula*, Fig. 13) on inner side in labial palpi. Pronotum rather transverse, somewhat discoid; surface very densely rugose-punctate (not punctate but granulate in *deliciolus*), densely pubescent; lateral margins more or less well contracted posteriorly, not or shallowly (*guttula*) sinuate before basal angles, basal angles more or less rounded in *pericallus* and *deliciolus*, well angulate in *guttula*; marginal setae before basal angles. Elytra fully mat, with or without lateral yellowish fascia, with or without yellowish subapical macula, finely, densely pubescent-punctate or -granulate throughout; intervals flat; basal border becoming indistinct inward in *pericallus* and *deliciolus*, complete in *guttula*, forming distinct angle at shoulder in *pericallus*, forming wide obtuse angle or narrowly rounding in *guttula*, rounding in *deliciolus*. Fore femora of ♂ without tooth near base; tarsi somewhat densely (more densely in *guttula*) pubescent dorsally. Ventral side of thorax and abdomen densely pubescent-punctate, punctures on sternites small; prosternal process not bordered. Aedeagus (Figs. 58–60) fairly curved, basal vertical part not so distinct; basal



Figs. 58–60. Male genitalia of *Chlaenius* spp.
58. *C. deliciolus* BATES from Urawa, Saitama Pref. (H. KAJIMURA). 59. *C. guttula* CHAUDOIR from Mt. Bannadake, Ishigaki Is., Ryukyus (S. KASAHARA). 60. *C. pericallus* REDTENBACHER from Tajimagahara, Urawa, Saitama Pref. (H. KAJIMURA).

bulb fairly bilobed; apical lamella simple, almost symmetric; inner sack with long, slender, more or less coiled stripe, stripe of *guttula* well developed, unusually coiled and apical part protrudent outward from membranous part as in Fig. 59. In styluses (Figs. 61–63) basal segment fairly wide, glabrous or with about three setae at outer apical area (*pericallus*, setae fully short and fine as in Fig. 63 in one of spec. examined); apical segment well dilated outward at base, moderately curved or almost straight (*pericallus*), inner margin with slender spine behind base in *pericallus*, spine turned into seta in *deliciolus* and *guttula*, outer margin unarmed, subapical foramen with two short setae (setae invisible in *guttula*); hemisternites with short, fine, sparse or rather sparse setae at apical membranous part.

Remarks. *C. pericallus* REDTENBACHER (Figs. 60, 63), *C. deliciolus* BATES (Figs. 58, 61) and *C. guttula* CHAUDOIR (Figs. 13, 59, 62) are included into this group in our fauna. JEANNEL (1949) regards the incomplete basal border of the elytra as one of



Figs. 61–63. Female genitalia of *Chlaenius* spp.
61. *C. deliciolus* BATES from Maebaru, Fukuoka Pref. (A. HABU). 62. *C. guttula* CHAUDOIR from Chihpen, Formosa (K. TERADA). 63. *C. pericallus* REDTENBACHER from Tsuchiai, Urawa, Saitama Pref. (A. HABU).

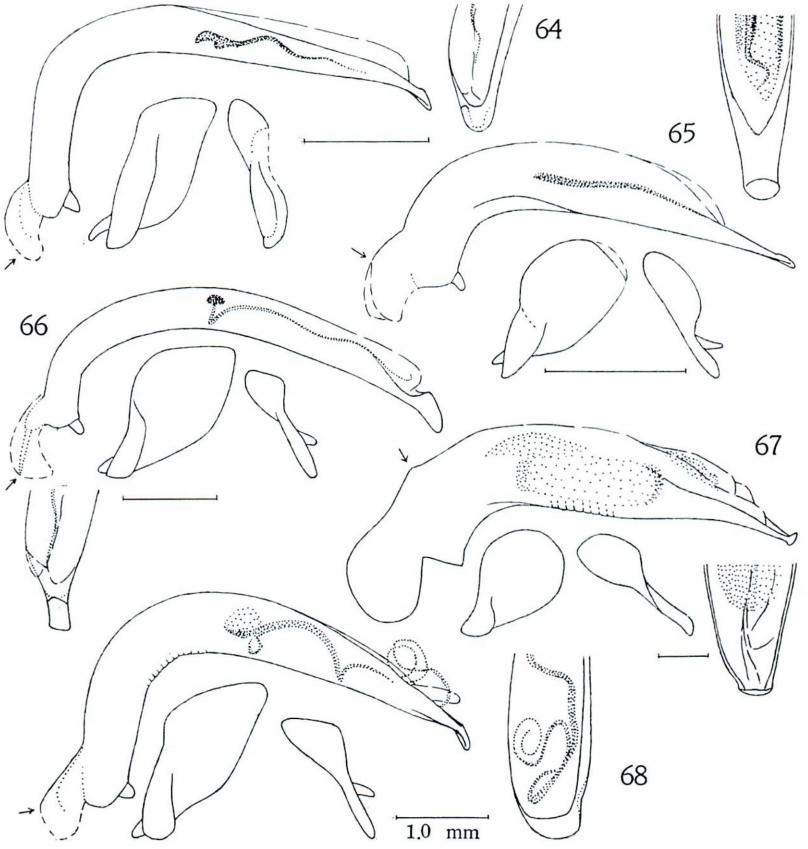
the characteristics of his tribe Eccoptomenini, and comprises the genus *Callistoides* in this tribe. This characteristic is, however, of no even generic value, and *C. guttula*, which JEANNEL himself puts in *Callistoides*, has a complete basal border. In addition to *C. pericallus* and *C. deliciolus*, *C. pallipes* GEBLER and *C. costiger* CHAUDOIR are with the elytral basal border incomplete, and *C. noguchii* BATES is without a distinct basal border, in our species of *Chlaenius*.

The larva of *C. pericallus*, according to TANAKA, 1956, has the cerci unusual:—they are fully longer than in *C. inops*, *C. posticalis*, *C. variicornis* etc., but not so long as in *C. circumdatus*, *C. pallipes* etc., and are not fixed at the base but movable as in the latter two species, while they are not flexible because of the lack of a multiannulate part as in the former three species. Concerning the larval cerci, *C. pericallus* is an intermediate between the groups with the cerci of a fixed and rigid type and those of a movable and flexible type.

13. *pallipes*-group

Characteristics. Head densely, distinctly pubescent-punctate; antennal segment 3 fully longer than segment 4, somewhat densely pubescent besides apical setae; palpi with very short, fine, sparse pubescence, apical segment subcylindrical, penultimate segment of maxillary palpi with some distinct setae at apical area, penultimate segment of labial palpi with some distinct setae like in *circumdatus* (cf. Fig. 65) on inner side. Pronotum not well transverse, with dense distinct pubescent punctures; lateral margins finely bordered, black, shallowly sinuate before basal angles; marginal setae before basal angles. Elytra mat,

not fasciate nor maculate, densely, minutely pubescent-punctate throughout; intervals flat; basal border becoming indistinct inward, forming distinct angle at shoulder. Fore femora of ♂ without tooth near base; tarsi sparsely setose dorsally. Ventral side of thorax and abdomen uniformly, densely, distinctly pubescent-punctate, punctures on sternites small; prosternal process not bordered. Aedeagus (Fig. 64) fully slender, well curved, basal perpendicular part rather distinct; basal bulb hardly



Figs. 64–68. Male genitalia of *Chlaenius* spp.

64. *C. pallipes* GEBLER from Maebaru, Fukuoka Pref. (A. HABU). 65. *C. circumdatus* BRULLÉ from Sakazu, Kurashiki, Okayama Pref. (T. AONO). 66. *C. spoliatus motchulskyi* ANDREWES from Urawa, Saitama Pref. (H. KAJIMURA). 67. *C. costiger* CHAUDOIR from Tajimagahara, Urawa, Saitama Pref. (A. HABU). 68. *C. nigricans* WIEDEMANN from Odajima, Yamagata Pref. (K. SHIRAHATA).

bilobed; apical lamella symmetric, faintly bordered on dorsal side from base to apex on either side; inner sack with curved but not coiled slender stripe. Styluses (Fig. 71) almost similar in form and structure to those of *pericallus*-group, basal segment wide, with about three fully short setae at outer apical area; apical segment weakly curved, base well prolonged outward, inner margin with short spine behind base, outer margin unarmed, subapical foramen with one (?) fully short seta; hemisternites with short, somewhat dense setae on apex of sclerotized part.

Remarks. This group is represented by *C. pallipes* GEBLER (Figs. 64, 71), allied to the preceding *pericallus*-group, and distinguishable only by the characteristics mentioned in the key, but the larva of *C. pallipes* is with the cerci of a movable and flexible type (after TANAKA, 1956; KUROSA, 1959; HABU and SADANAGA, 1961 and 1965).

14. *praefectus*-group

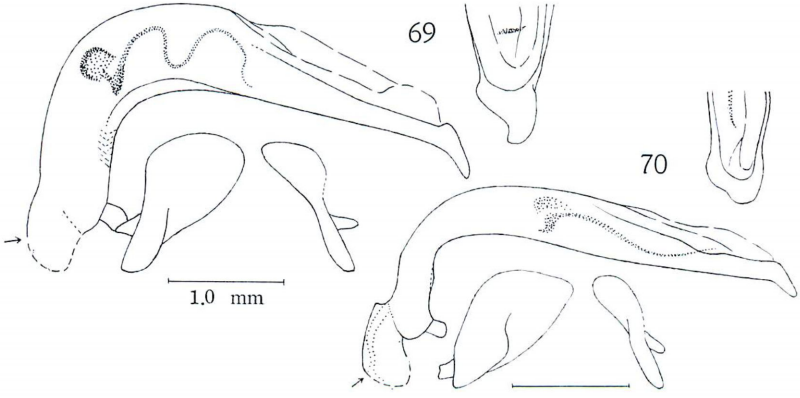
Characteristics. Head with large dense pubescent punctures; antennal segment 3 fully longer than segment 4, somewhat densely pubescent; palpi with very short, fine, rather sparse setae, apical segment subcylindrical, penultimate segment of labial palpi with some distinct setae like in *circumdatus* (cf. Fig. 65) on inner side. Pronotum not distinctly transverse, with large, ununiform, scattered, pubescent punctures; lateral margins finely bordered, black, shallowly sinuate before basal angles; marginal setae before basal angles. Elytra somewhat or rather mat, not fasciate nor maculate; intervals convex, intervals 1 to 7 except apical area with one row of small pubescent punctures along striae on either side, without punctures nor pubescence in middle between rows of punctures, apical area and intervals 8 and 9 with rather dense, pubescent punctures, punctures a little larger than those on intervals 1 to 7; basal border complete, distinctly angulate at shoulder. Fore femora of ♂ without tooth near base; tarsi with very short, fine, sparse pubescence dorsally. Ventral side of thorax and abdomen densely, distinctly pubescent-punctate; prosternal process bordered at least at apical area. Aedeagus (Fig. 69) well curved, a little stout, basal vertical part somewhat distinct; basal bulb rather bilobed; apical lamella distinctly asymmetric, not bordered; inner sack with undulate but not coiled, slender stripe behind middle. Styluses (Fig. 72) similar to those of *pallipes*-group, basal segment wide, with about three vestigial setae at outer apical area; apical segment moderately to fairly curved, depressed at subapical area, base fully prolonged outward, inner margin with short, not stout spine at about basal fourth, outer margin well sinuate, unarmed, subapical foramen with one (?) vestigial seta; hemisternites with sclerotized part

reaching apex, with short, somewhat dense setae on apical to inner area.

Remarks. This group comprises *C. praefectus* BATES (Figs. 69, 72), and is distinguishable from the preceding *pallipes*-group by the state of the punctures on the pronotum and the elytra, the prosternal process bordered, and the aedeagus with the apical lamella distinctly asymmetric.

15. *noguchii*-group

Characteristics. Head without punctures (*agilis*) or with several punctures (*noguchii*), glabrous; antennal segment 3 fully longer than segment 4, sparsely pubescent besides apical setae; apical segment of palpi subcylindrical, maxillary palpi almost glabrous, penultimate segment of labial palpi with a few (three or four) short setae on inner side. Pronotum somewhat cordate, not punctate (*agilis*) or with fine dense punctures and transverse rugae (*noguchii*), glabrous (fully dense, whitish setae on hypomera well visible beneath lateral margins in dorsal view); lateral margins narrowly bordered, black, distinctly sinuate posteriorly; marginal setae before well angulate basal angles. Elytra half-shiny, without fascia nor macula; intervals well convex, with dense pubescent punctures along striae and smooth and glabrous in middle between striae on intervals 1 to 5 or 6, densely pubescent at apical area and intervals 6 or 7 to 9; basal border rounding at shoulder, thence becoming indistinct sulcus inward (*noguchii*), or well angulate at shoulder, extending inward up to interval 5, thence becoming sulcus (*agilis*). Fore femora



Figs. 69, 70. Male genitalia of *Chlaenius* spp.
69. *C. praefectus* BATES from Urawa, Saitama Pref. (H. KAJIMURA). 70. *C. noguchii noguchii* BATES from Kawaji spa, Tochigi Pref. (K. BABA).

of ♂ without tooth near base; tarsi with fully short, rather sparse to somewhat dense setae (*noguchii*) or almost glabrous (*agilis*). Ventral side of thorax and abdomen fully densely pubescent-punctate, punctures small and not distinct; prosternal process not or faintly bordered. Aedeagus (in *noguchii*, Fig. 70) slender, fairly bent at basal fifth, basal perpendicular part distinct though shorter than usual; basal bulb not distinctly bilobed; apical lamella asymmetric, not bordered; inner sack with slender simple stripe. Basal segment of styluses (Figs. 73, 74) not fully wide, with two or three relatively long setae at outer apical area (in one older ♀ of *agilis* setae fallen off); apical segment rather long, almost straight or weakly curved, base shortly protrudent (but not well prolonged) outward, so base narrower than usual, inner margin with somewhat long, slender spine, outer margin unarmed (with two or three very short spines at basal third in one of spec. examined, Fig. 74, A), subapical foramen with one (?) short seta; hemisternites with long, somewhat stout, fully dense (less dense in *agilis*) setae at apical membranous part.

Remarks. Besides the Japanese *C. noguchii noguchii* BATES (Figs. 70, 74) and the Formosan *C. noguchii formosanus* HABU which I have not examined during the course of the present study, *C. agilis* CHAUDOIR from India and Nepal belongs to this group. The punctuation of the elytra and the aedeagus with an asymmetric apical lamella remind of the *praefectus*-group, but the female genitalia are fairly different between them:— the apical segment is almost straight, with the base fully narrower, the basal segment is with distincter setae, and the hemisternites are well setose in the *noguchii*-group.

The larva of *C. noguchii noguchii* has the cerci of a movable and flexible type (after KUROSA, 1959).

16. *spoliatus*-group (*Chlaenites* MOTSCHULSKY)

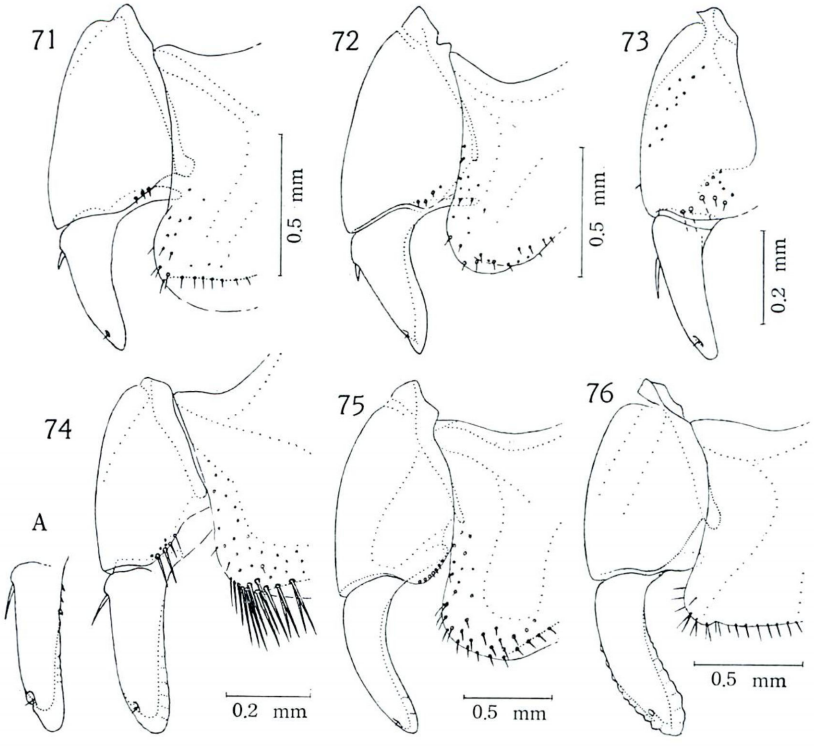
Characteristics. Head with very fine, very dense punctures, not pubescent; antennal segment 3 longer than segment 4, sparsely setose besides apical setae; apical segment of palpi a little dilated at subapical area, completely glabrous, penultimate segment glabrous in maxillary palpi, with two short setae at outer apical area, with two or three vestigial hairs (sometimes invisible) on inner side in labial palpi. Pronotum rather cordate, distinctly rugose, very densely, very finely punctate, glabrous; lateral margins finely explanate-reflexed, black, sinuate before distinct basal angles; marginal setae fully before basal angles. Elytra half-shiny, with yellowish lateral fascia; surface not punctate, sparsely pubescent on yellowish fascia from behind shoulder to apical area; intervals convex, with one row of sparse hairs along

striae on either side on dark greenish part (intervals 1 to 7); basal border complete, obtusely but distinctly angulate. Fore femora of ♂ without tooth near base; tarsi with very short, fine, sparse hairs dorsally. Ventral side of thorax with distinct, rather sparse, pubescent punctures on lateral areas, sternites with fine, indistinct, sparse, pubescent punctures; prosternal process almost completely, distinctly bordered. Aedeagus (Fig. 66) fully slender, well curved, basal vertical part not distinct; basal bulb hardly bilobed; apical lamella almost symmetric, raised at base; inner sack with slender, not coiled stripe. Basal segment of styluses (Fig. 57) fairly dilated apically, with three rudimentary setae at outer apical area; apical segment elongate, fairly curved, base well protrudent outward, inner margin with moderately long, hardly or a little stout spine at basal fifth or fourth, outer margin distinctly sinuate, unarmed, subapical foramen with one rudimentary seta; hemisternites with sclerotized part almost reaching apex, with rather short or a little long, more or less stout, somewhat dense setae at apical area.

Remarks. This group comprises only *C. spoliatus motchulskyi* ANDREWES (Figs. 57, 66) in our fauna.

17. *nigricans*-group (*Epomis* BONELLI)

Characteristics. Body relatively large. Head with large dense pubescent-punctures; antennal segment 3 fully longer than segment 4, somewhat densely setose; palpi distinctly setose, apical segment of maxillary palpi and labial palpi (Fig. 12) well dilated in ♂, less dilated in ♀, penultimate segment of labial palpi with about eight spinous setae on inner side. Pronotum not fully transverse, with large, somewhat sparse, pubescent punctures; lateral margins finely bordered, black, shallowly sinuate posteriorly; marginal setae before basal angles. Elytra half-shiny or somewhat mat, with yellowish lateral fascia from behind shoulder to apex; intervals convex, intervals 1 to 7 with one row of pubescent punctures along striae on either side except apical area (row of punctures a little remote from striae), densely pubescent-punctate on interval 8, densely pubescent on yellowish part; basal border almost complete or a little indistinct inward, forming distinct angle at shoulder. Fore femora of ♂ without tooth near base; tarsi rather sparsely or somewhat densely pubescent dorsally. Ventral side of thorax and abdomen densely, distinctly pubescent-punctate, punctures on sternites small at median area; prosternal process not or faintly bordered. Aedeagus (Fig. 68) slender, well curved, basal vertical part not distinct; basal bulb fairly bilobed; apical lamella a little asymmetric, not bordered; inner sack with elongate, slender, coiled stripe. In styluses (Fig. 76) basal



Figs. 71–76. Female genitalia of *Chlaenius* spp.
71. *C. pallipes* GEBLER from Tsuchiai, Urawa, Saitama Pref. (A. HABU). 72. *C. praefectus* BATES from Minamiôita, Ôita, Ôita Pref. (A. HABU). 73. *C. agilis* CHAUDOIR from Rupakot Tal, Nepal (T. KUMATA). 74. *C. noguchii noguchii* BATES from Mt. Hakusan, Ishikawa Pref. (S. TAKABA). A. apical segment of spec. from Iijima, Nagano Pref. (A. HABU). 75. *C. costiger* CHAUDOIR from Kurokawa, Niigata Pref. (K. BABA). 76. *C. nigricans* WIEDEMANN from Urawa, Saitama Pref. (H. KAJIMURA).

segment wide, glabrous; apical segment long, well curved, well protrudent outward at base, almost same in width from behind base to before apex, inner and outer margins without any spine, subapical foramen without setae; hemisternites with sclerotized part reaching apex, with short, rather dense setae on apical margin.

Remarks. This group contains only *C. nigricans* WIEDEMANN (Figs. 12, 68, 76) in our fauna, and it is characteristic in having the palpi with a fairly dilated apical segment and the styluses with the apical segment unarmed on both the inner and outer margins. The *chuji*-group has also the palpi with a dilated (more dilated

than in *C. nigricans*) apical segment, but it is far distant from the *nigricans*-group.

The larva of *C. nigricans* is with the cerci of a movable and flexible type, and the colour of the body is unusually reddish yellow, with black patches (after KUROSA, 1959).

18. *costiger*-group (*Haplochlaenius* LUTSHNIK)

Characteristics. Body fully large. Head somewhat densely rugose-punctate, almost glabrous; antennal segment 3 exceedingly longer than segment 4, rather sparsely or somewhat densely setose besides apical setae; apical segment of palpi a little dilated, maxillary palpi almost glabrous, penultimate segment of labial palpi with some (six in *costiger*) short stout spines on inner side; mentum tooth shorter and wider than usual. Pronotum not fully transverse, rather sparsely to somewhat densely rugose-punctate, glabrous; lateral margins finely bordered, black, hardly sinuate posteriorly; marginal setae before basal angles. Elytra mat, not fasciate nor maculate; intervals somewhat costate in middle, with one row (partly doubled) of pubescence on either side, outer part of interval 8 and apical area densely pubescent; basal border almost absent. Fore femora of ♂ without tooth near base; tarsi with very short, fine, sparse pubescence. Ventral side of thorax and abdomen densely pubescent-punctate almost throughout, pubescence short; prosternal process not bordered. Aedeagus (Fig. 67) stout, gently curved, basal part never perpendicular; basal part exceedingly bilobed and split fully dorsal; apex both reflexed and deflexed, without apical lamella or with apical lamella very short; inner sack partly chitinized, without any stripe; left paramere relatively small, widely rounded at apex. Basal segment of styluses (Fig. 75) reaching apical outer margin, a few rudimentary hairs visible near apical outer margin; apical segment well curved, long, rather narrow, base well prolonged outward, inner and outer margins without spine, subapical foramen a little more distal than usual, with vestigial seta; hemisternites with short dense setae at apical area.

Remarks. *C. costiger* CHAUDOIR (Figs. 67, 75) and *C. insularis* (UÉNO) are distributed in our fauna, but I have not studied the latter species. The large size, the elytra costate between the striae and without a distinct basal border, and the characteristic male and female genitalia make it easy to distinguish this group from the others.

The third instar larva of *C. costiger* has the cerci of a movable and flexible type (after KUROSA, 1959), but the cerci of the first instar larva are immovable at the base though seemingly separated from the ninth tergite on the dorsal side, but well flexible owing to a longer multiannulate part (after HABU and SADANAGA, 1965).

Undecided group

Chlaenius prostenus BATES (Fig. 77): This species well resembles *C. inops* CHAUDOIR of the *inops*-group, but the aedeagus (Fig. 77) is less curved and not perpendicular at the basal part, containing a stripe fully shorter and stouter. The four specimens I have examined are all male, and therefore I leave this species here until the female characteristics are known.

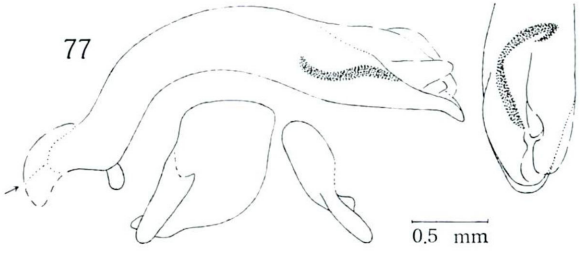
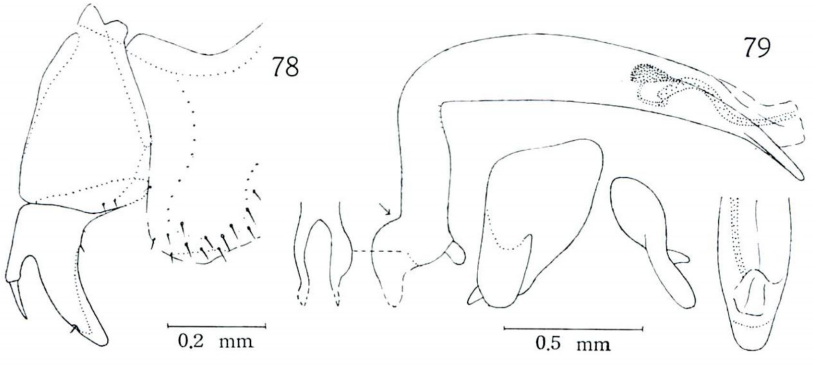


Fig. 77. Male genitalia of *Chlaenius prostenus* BATES from Toda, Saitama Pref. (H. KAJIMURA).

Genus *Eochlaenius* SEMENOW

Remarks. This genus is characteristic in having the eyes with very short, sparse pubescence, the pronotum without marginal setae and the styluses (Fig. 78) with the apical segment digitate on the inner margin. The pronotum without marginal setae and the elytra with an incomplete basal border seemingly suggest a near relationship to *Callistus* and *Callistomimus*, but *Eochlaenius* is, judging from the structure of the styluses, far distant from these genera.



Figs. 78, 79. *Eochlaenius suvorovi* SEMENOW from Akigase, Urawa, Saitama Pref. (T. YAMAGUCHI).
78. Female genitalia. 79. Male genitalia.

Only *E. suvorovi* SEMENOW (Figs. 78, 79) represents this genus.

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Chrysomelidae Collected by the Japan-India Cooperative Survey in India, 1978. Part IV[1)]

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Beetles of the subfamily Galerucinae of Chrysomelidae collected by the Japan-India Cooperative Survey in India, 1978 were examined. A list of 50 species is given, of which 5 are recorded from India for the first time: *Atysa montivaga* Maulik, *Sphenoraia nebulosa* (Gyllenhal), *Monolepta gestroi* Jacoby, *Monolepta picturata* Jacoby, and *Phyllioclepis hirtipennis* (Jacoby). The last species is redescribed on the basis of Indian specimens.

Half of the material examined will be deposited in the collection of the Entomological Institute, Hokkaido University (EHU), Sapporo and the other half in the collections of the Zoological Survey of India (ZSI) and of the Department of Zoology, University of Calcutta, both in Calcutta.

Enumeration

1. *Periclitena vigorsi* (Hope, 1831)

   9 exs., Bot. Gard., Calcutta, West Bengal, 18. X., 21. XII. 1978.
   Hosts. *Cordia* sp. (Boraginaceae: adults and larvae at Calcutta).

2. *Hymenesia tranquebarica* (Fabricius, 1798)

   1 ex., Madras, Tamil Nadu, 16–19. XII. 1978
   Distribution. India, Sri Lanka.

3. *Atysa montivaga* Maulik, 1936

   4 exs., FRI, Dehra Dun, Utter Pradesh, 10–13. XI. 1978.
   Distribution. India*, Assam, Burma.

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1) Part I, Ent. Rev. Japan 39, 9–25, 1984; Part II, ditto, 40, 1–8, 1985: Part III, ditto, 41, 93–105, 1986.

Research Trips for Forest and Agricultural Insects in the Subcontinent of India (Hokkaido University, University of Calcutta, and Zoological Survey of India Joint Project) [Grants-in-Aids for Overseas Scientific Survey, Ministry of Education, Japanese Government, 1978, No. 304108: 1979, No. 404307], Scientific Report No. 25.

* An asterisk indicates new record from India. Altitude of collecting sites were given in Part I.

[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 37–42, June, 1987]

4. *Galerotella indicola* TAKIZAWA, 1986

Distribution. S. India.

5. *Galerotella virida* (JACOBY, 1887)

7 exs., Kallar, Nilgiri, Tamil Nadu, 9–12. XII. 1978; 2 exs., Mettupalayam View, Nilgiri, 10. XII. 1978.

6. *Galeruca indica* BALY, 1878

3 exs., Solan, Himachal Pradesh, 24–27. X. 1978.

7. *Apophylia assamensis* (JACOBY, 1891)

17 exs., Bot. Gard., Calcutta, 18. X. 1978.
Hosts. *Cordia* sp. (Boraginaceae: adults at Calcutta).

8. *Apophylia sericea* (FABRICIUS, 1798)

4 exs., Top Slip, Anaimalai Hills, Tamil Nadu, 2–5. XII. 1978; 1 ex., Kallar, Nilgiri, 9. XII. 1978.

9. *Dercetina brettinghami* (BALY, 1879)

3 exs., Mettupalayam View, Nilgiri, 10. XII. 1978; 1 ex., Kallar, Nilgiri, 9. XII. 1978; 15 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978; 2 exs., Madumalai, Tamil Nadu, 27–28. XI. 1978; 2 exs., Yercaud nr. Salem, Tamil Nadu, 1. XII. 1978; 2 exs., Dhony Hills, Kerala, 7. XII. 1978; 2 exs., Dehra Dun, 2–6. XI. 1978; 2 exs., Mohand Forest nr. Dehra Dun, 7–9. XI. 1978.

10. *Dercetina collina* (WEISE, 1924)

5 exs., Kallar, Nilgiri, 9. XII. 1978; 1 ex., Top Slip, Anaimalai Hills, 2–5. XII. 1978; 1 ex., Dhony Hills, 7. XII. 1978.

11. *Dercetisoma concolor* (JACOBY, 1889)

2 exs., Solan, 28–30. X. 1978: 2 exs., Sadhupul nr. Simla, Utter Pradesh, 27. X. 1978.

12. *Sphenoraia nebulosa* (GYLLENHAL, 1808)

1 ex., Jawad Hills, Tamil Nadu, 14. XII. 1978.
Distribution. India*, Thailand, Vietnam, Hainan Is., China.

13. *Sphenoraia rutilans* (HOPE, 1831)

3 exs., Kemptee Fall, Mussoorie, Utter Pradesh, 4. XI. 1978.
Distribution. Himalayas.

14. *Meristata quadrifasciata* (HOPE, 1831)

1 ex., Chail nr. Simla, 27. X. 1978.

15. *Meristata sexmaculata* (KOLLAR & REDTENBACHER, 1848)

1 ex., Darjeeling, West Bengal, 5. II. 1978, S. F. SAKAGAMI & T. KUMATA leg.

16. *Aulacophora cruenta* (FABRICIUS, 1781)

1 ex., Palghat Forest, Kerala, 6. XII. 1978; 3 exs., Dhony Hills, 7. XII. 1978.
Distribution. India, Sri Lanka, Vietnam, Hainan Is.

17. *Aulacophora indica* (GMELIN, 1790)

6 exs., Calcutta, 14–19. X., 15–18. XI. 1978 (some on light); 1 ex., Bot. Gard.,

Calcutta, 18. X. 1978; 3 exs., Solan-Simla, 26. X. 1978; 2 exs., Yadavindra Gr. Pinjore nr. Kalka, Haryana, 29. X. 1978; 2 exs., New Delhi, Delhi, 20-23. X. 1978; 2 exs., Agric. Coll., Coimbatore, Tamil Nadu, 1, 8. XII. 1978; 46 exs., Madras, 16-19. XII. 1978.

18. *Aulacophora lewisii* BALY, 1886

3 exs., Calcutta, 2. II. 1978, S. F. SAKAGAMI & T. KUMATA leg.; 1 ex., Madras, 16-19. XII. 1978; 1 ex., Palghat Forest, 8. XII. 1978.

19. *Aulacophora nilgiriensis* JACOBY, 1903

1 ex., Palghat Forest, 6. XII. 1978.
Distribution. India.

20. *Pseudocophora bicolor* JACOBY, 1887

1 ex., Calcutta, 14-19. X. 1978; 4 exs., Palghat Forest, 6. XII. 1978; 1 ex., Kallar, Nilgiri, 12. XII. 1978.
Distribution. India, Sri Lanka, China.

21. *Paridea octomaculata* (BALY, 1886)

5 exs., Solan, 24-27. X. 1978; 1 ex., Sahastradhara nr. Dehra Dun, 6. XI. 1978.

22. *Medythia suturalis* (MOTSCHULSKY, 1858)

3 exs., Calcutta, 15-18. XI. 1978 (on light); 1 ex., Suburbs of Calcutta, 20. XI. 1978.

23. *Madurasia obscurella* JACOBY, 1896

3 exs., Calcutta, 15-18. XI. 1978; 3 exs., Suburbs of Calcutta, 20. XI. 1978; 1 ex., Madras, 16-19. XII. 1978; 1 ex., Kallar, Nilgiri, 12. XII. 1978; 2 exs., Mettupalayam View, Nilgiri, 30. XI. 1978; 1 ex., Coonoor, Nilgiri, 23-26. XI. 1978.
Distribution. India.

24. *Anastena variomaculata* TAKIZAWA, 1986

Distribution. S. India.

25. *Taphinellina sensarmai* TAKIZAWA, 1986

Distribution. N. India.

26. *Hoplasoma unicolor* (ILLIGER, 1800)

3 exs., Suburbs of Calcutta, 20. XI. 1978; 92 exs., Dehra Dun, 2-6 XI. 1978; 18 exs., FRI, Dehra Dun, 10-13. XI. 1978; 15 exs., Mohand Forest nr. Dehra Dun, 7-9. XI. 1978; 2 exs., Lachiwala nr. Dehra Dun, 8. XI. 1978; 2 exs., Solan, 24-27. XI. 1978.
Hosts. *Clerodendron* sp. (Vervenaceae: adults at Dehra Dun).

27. *Trichomimastra itoi* TAKIZAWA, 1986

2 exs., Palghat Forest, 6. XII. 1978.
This species was originally described

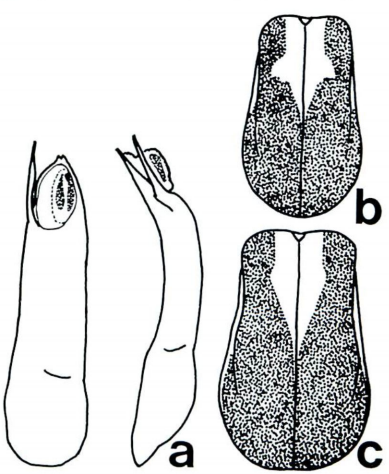

Fig. 1, *Trichomimastra itoi* TAKIZAWA a, aedeagus (left: dorsal view, right: lateral view); b, male elytra; c, female elytra.

on female specimens. The two male specimens from Palghat Forest are slightly smaller and have the light yellowish brown patch on elytra differently shaped as shown in Fig. 1. This may not be a secondary sexual character. Aedeagus is very peculiarly shaped, having a slender acute process laterally to the median orifice.

28. *Haplosomoides indica* TAKIZAWA, 1985

2 exs., Thekkady, Kerala, 19–21. XII. 1978; 2 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978.

29. *Monolepta anaimalaiensis* TAKIZAWA, 1986

Distribution. S. India.

30. *Monolepta bengalensis* (WEISE, 1921)

19 exs., Mettupalayam View, Nilgiri, 10. XII. 1978; 1 ex., Top Slip, Anaimalai Hills, 2–5. XII. 1978.

I referred these specimens to this species with some doubts. Among the light brownish Indian *Monolepta* spp., *bengalensis* is characterized by the pronotum which is subquadrate and has a transverse depression on the disc, and by the long slender antennae, extending nearly to the apical area of elytra. Female specimens agree well with the description given by MAULIK, however, the males have the antenna somewhat stouter than in the female and about 1⅗ as long as the body. Further study on the type specimen is needed for exact identification.

Distribution. India, Sri Lanka.

31. *Monolepta bifasciata* (HORNSTEDT, 1788)

4 exs., Kallar, Nilgiri, 9. XII. 1978: 1 ex., Mettupalayam View, Nilgiri, 10. XII. 1978; 2 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978; 1 ex., Palghat Forest, 8. XII. 1978.

32. *Monolepta binotata* TAKIZAWA, 1986

Distribution. S. India.

33. *Monolepta dehradunensis* TAKIZAWA, 1986

Distribution. N. India.

34. *Monolepta flaviventris* JACOBY, 1903

1 ex., Kotagiri, Nilgiri, 29. XI. 1978.
Distribution. S. India.

35. *Monolepta gestroi* JACOBY, 1892

1 ex., Kallar, Nilgiri, 9. XII. 1978; 1 ex., Lachiwala nr. Dehra Dun, 8. XI. 1978.
Distribution. India*, Burma.

36. *Monolepta indicola* TAKIZAWA, 1986

Distribution. N. India.

37. *Monolepta kandasamyi* TAKIZAWA, 1986

Distribution. S. India.

38. *Monolepta labiata* (JACOBY, 1900)

39 exs., FRI, Dehra Dun, 10–13. XI. 1978; 26 exs., Solan, 24–27. X. 1978.
Distribution. India.

39. *Monolepta limbata* (OLIVIER, 1808)

2 exs., Top Slip, Anaimalai Hills. 2–5. XII. 1978; 3 exs., Kallar, Nilgiri, 12. XII. 1978; 3 exs., Jawad Hills, 14. XII. 1978.

40. *Monolepta madurensis* WILCOX, 1973

3 exs., Bot. Gard., Calcutta, 18. X., 21. XII. 1978; 1 ex., Calcutta, 15–18. XI. 1978; 1 ex., Suburbs of Calcutta, 20. XI. 1978; 1 ex., Bot. Gard., Ootacamund, Nilgiri, 24. XI. 1978.

41. *Monolepta nigriceps* (OLIVIER, 1808)

33 exs., Bot. Gard., Calcutta, 18. X. 1978.
Distribution. India, Sri Lanka, Assam, Thailand, Philippines, Celebes, Borneo.

42. *Monolepta nilgiriensis* JACOBY, 1904

21 exs., Mettupalayam View, Nilgiri, 10. XII. 1978; 1 ex., Kallar, Nilgiri, 12. XII. 1978.
Distribution. S. China.

43. *Monolepta picturata* JACOBY, 1896

4 exs., Lachiwala nr. Dehra Dun, 8. XI. 1978
Distribution. India*, Burma.

44. *Monolepta raychaudhurii* TAKIZAWA, 1986

Distribution. S. India.

45. *Monolepta gotoi* TAKIZAWA, 1986

Distribution. S. India.

46. *Monolepta rufominuta* TAKIZAWA, 1986

Distribution. S. India.

47. *Monolepta severini* (JACOBY, 1896)

Despite WILCOX's treatise who transferred this species to the genus *Calomicrus*, I followed MAULIK to place it in the present genus, because of its having long tarsi which are rather unusual in *Calomicrus*. This species is characterized by the light brownish, rather narrow and smaller body; elytra densely punctate; pronotum subquadrate and punctate, having a pair of shallow depressions.

13 exs., Jawad Hills, Tamil Nadu, 14. XII. 1978.
Distribution. India, Burma.

48 *Monolepta signata* (OLIVIER, 1808)

1 ex., Calcutta, 1. II. 1978, S. F. SAKAGAMI & T. KUMATA leg.; 1 ex., Bot. Gard., Calcutta, 21. XII. 1978; 10 exs., Suburbs of Calcutta, 20. XI. 1978; 4 exs., New Delhi, 20–23. X. 1978; 11 exs., FRI, Dehra Dun, 10–13. XI. 1978; 1 ex., Dehra Dun, 2–6. XI. 1978; 3 exs., Lachiwala nr. Dehra Dun, 8. XI. 1978; 1 ex., Sahastradhara nr. Dehra Dun, 6. XI. 1978; 1 ex., Bhata Reserve nr. Dehra Dun, 3. XI. 1978; 3 exs., Solan, 24–27. X. 1978; 39 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978; 58 exs., Coonoor, Nilgiri, 23–26. XI. 1978; 2 exs., Mudumalai, 27–28. XI. 1978; 1 ex., Coimbatore, 1. XII. 1978; 1 ex., Agric. Coll., Coimbatore, 1. XII. 1978; 1 ex., Dhony Hills, 7. XII. 1978; 1 ex., Palghat Forest, 8. XII. 1978.

49. *Phyllocleptis hirtipennis* (JACOBY, 1887)

Phyllobrotica hirtipennis JACOBY, 1887, Proc. Zool. Soc. Lond., 1887: 103; MAULIK, 1936, Fauna Brit. India, Col. Chrysom., Galerucinae: 493.

Phyllocleptis hirtipennis: WILCOX, 1973, Col. Cat., Suppl. Chrysom., Galerucinae 78 (3): 604.

A short redescription is given for this variable species on S. Indian specimens.

Head and pronotum reddish brown; elytra yellowish brown, with suture narrowly margined with piceous; antenna, metathorax and abdomen dark brown; legs yellowish brown; sometimes elytra with a broad obscure piceous stripes along suture and lateral margin; in darkest specimens, body entirely dark brown except for brownish legs.

Body small, subparallel-sided; elytra densely covered with short hairs; head large, distinctly wider than pronotum; eyes strongly convex. Pronotum transverse, twice as wide as long, weakly divergent anteriorly on lateral margins, gently emarginate on anterior margin, and gently produced on posterior margin; with a row of long hairs on lateral margin; disc impunctate and shining, with a deep and broad transverse depression medially. Elytron 3 times as long as wide, densely covered with distinct punctures, obscurely wrinkled throughout; epipleuron very narrow, reaching to apical 1/5, channeled for full length. Antenna in male longer than body and thickened; 2nd segment about 1/3 as wide as long, and 1/3 as long as 3rd; in female, antenna slender, not extending to the apices of elytra; 2nd antennal segment about 1/2 as long as 3rd.

Size. 2.5–3.0 mm in length, 1.0–1.4 mm in width in both sexes.

3 exs., Madumalai, 27, 28. XI. 1978; 1 ex., Mettupalayam View, Nilgiri, 10. XII. 1978; 5 exs., Kotagiri, Nilgiri, 29. XI. 1978; 3 exs., Kallar, Nilgiri, 9. XII. 1978; 3 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978; 1 ex., Palghat Forest, 6. XII. 1978.

Distribution. S. India*, Sri Lanka.

50. *Strobiderus nigripennis* (JACOBY, 1900)

2 exs., Jawad Hills, 14. XII. 1978; 2 exs., Top Slip, Anaimalai Hills, 2–5. XII. 1978.

Distribution. India.

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—— 1985; ditto, Part II, Ent. Rev. Japan, 40: 95–114.

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A New Apterous *Pterostichus* (Coleoptera, Carabidae) from the Kii Peninsula, Central Japan

By Seiji Morita

Abstract A new pterostichine carabid beetle belonging to the subgenus *Daisenialoe* is described from the Kii Peninsula, Central Japan, under the name of *Pterostichus shotaroi*. It is readily distinguished from *P. fujimurai* Habu in the body size and in the structure of male genital organ.

I had an opportunity to examine an interesting species of pterostichine carabid beetle collected by Mr. Shotaro Tanaka, a friend of mine, at two different localities in Wakayama Prefecture. It looks like a member of the subgenus *Daisenialoe* in having the third antennal segment densely pubescent except for the basal part and in bearing a median sulcus on the upper surface of tarsi, but clearly differs from *P. fujimurai*, the only described species of *Daisenialoe*, mainly in the larger and wider body, in the shape of pronotum and in the structure of male genital organ, especially the apical part of aedeagus. It must be a new species, and will be described in the present paper.

The abbreviations used herein are the same as those explained in my previous paper (1986, p. 143).

Before going further, I wish to express my deep gratitude to Dr. Shun-Ichi Uéno of the National Science Museum (Nat. Hist.), Tokyo, for giving me advice and for reading the manuscript of this paper. Thanks are also due to Mr. Shotaro Tanaka, and his family for their kind help, to Messrs. Sumao Kasahara, Tsutomu Matsuda and Masafumi Ohkura for kindly supplying me with important materials, and to Mr. Akinori Yoshitani for his assistance in preparing drawing.

Pterostichus (*Daisenialoe*) *shotaroi* Morita, sp. nov.

[Japanese name : Nanki-naga-gomimushi]

(Figs. 1–8)

Length : 12.94–14.94 mm (from apical margin of clypeus to apices of elytra)

Colour blackish brown ; mandibles, labrum, antennae, femora, most part of tibiae and ventral surface of hind body more or less lighter than dorsum ; palpi, tibial apices and tarsi dark reddish brown.

[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 43–48, June, 1987]

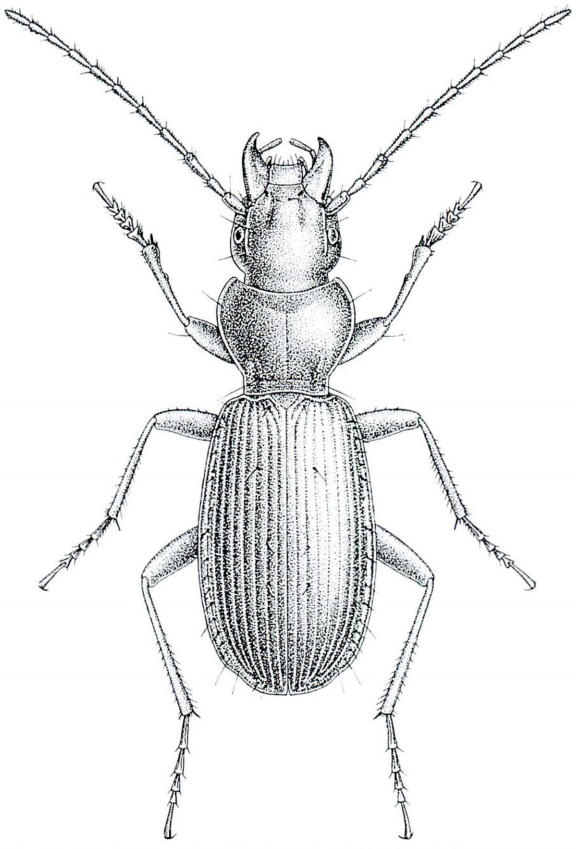


Fig. 1. *Pterostichus* (*Daisenialoe*) *shotaroi* MORITA, sp. nov., ♂, from Kawaradani in Hikigawa-chô, Wakayama Prefecture.

Head large and wide, surface smooth though the area between frontal furrows bears microscopic punctures; frontal furrows short and somewhat shallow, parallel or a little divergent posteriad, and reaching the mid-eye level; clypeus frequently longitudinal wrinkles though vaguely; clypeal suture fine; eyes small and flattened; genae strongly tumid, about 1.4 times as long as eyes and smooth beneath them; lateral grooves deep, straight, often arcuate inwards at the posterior parts, and extending to posterior supraorbital pores which are situated behind the post-eye level; supraorbital area somewhat convex; mandibles short and stout, usually hooked at apices, though often obtuse; terminal segment of maxillary palpus as long as the penultimate, cylindrical, truncate at apex; apical margin of labrum rather straight or somewhat emarginate; mentum tooth bifid; antennae subfiliform and long, reaching the middle of elytra; relative lengths of antennal segment as follows: — 1 : 2 : 3 : 4 : 5 : 6=1 : 0.66 : 1.03 : 1.11 : 1.01 : 1.00.

Pronotum transverse subcordate, rather flat, widest at about apical fourth; PW/HW 1.23–1.33 (M 1.28) in 21 ♂♂, 1.21–1.35 (M 1.27) in 12♀♀, PW/PL 1.32–1.43 (M 1.37) in 21 ♂♂, 1.37–1.43 (M 1.40) in 12♀♀, PW/PA 1.23–1.32 (M 1.28) in 21 ♂♂, 1.28–1.35 (M 1.30) in 12♀♀, PW/PB 1.49–1.60 (M 1.54) in 21 ♂♂, 1.46–1.64 (M 1.54) in 12♀♀, sides rather strongly arcuate in front, deeply sinuate and then usually parallel towards hind

angles, which are nearly rectanglar and bear no carina; apex widely emarginate, not bordered, wider than base, PA/PB 1.14–1.24 (M 1.20) in 21 ♂♂, 1.11–1.28 (M 1.18) in 12♀♀, with front angles produced and widely rounded; base widely emarginate at the median part; anterior marginal setae inserted a little before widest part, posterior ones a little before and inside hind angles; median line somewhat distinct, with irregularly transverse wrinkles on each side of the base; basal foveae linear, diverging anteriorly; spaces outside of the foveae densely punctate, basal part between the foveae sparsely punctate.

Apterous.

Elytra elongated subovoid, widest at a level a little behind middle; EW/PW 1.22–1.33 (M 1.28) in 19♂♂, 1.21–1.31 (M 1.27) in 12♀♀, EL/EW 1.49–1.57 (M 1.53) in 19♂♂, 1.46–1.55 (M 1.52) in 12♀♀; basal border gently arcuate and joining scutellar striole which is rather short and lies on interval 1; shoulders rounded, not angulate; sides gently dilated to behind middle; epipleuron gradually narrowed towards apex; inner plica slightly visible in lateral view; apices variable in form, somewhat truncate, usually separated from each other and somewhat asymmetrical; sutural angle usually sharp, though often obtuse or dentate; stria smooth throughout; intervals somewhat convex without punctures, V and VI variable in width near base; basal pore situated at the base of stria 1; three dorsal pores on interval 3, anterior one adjoining stria 3 and others adjoining stria 2; preapical and apical pores lying on stria 7 before apex and close to each other as in *P. fujimurai*; marginal series composed of sixteen to seventeen pores.

Prepisternum with fine punctures along the middle of inner margin; mesosternum, apical third of mesepisternum, sides of metasternum and inner side of metepisternum with coarse punctures; prosternal process subtruncate at apex; basal two sternites with fine punctures and irregular wrinkles; in ♂, apical sternite somewhat deeply and widely excavated at the middle along apical margin which has a short projection at the middle; the projection stouter than in *P. fujimurai*, rather symmetrical; both sides of projection shallowly emarginate; in ♀, apical sternite widely depressed along apical margin, with two pairs of setae.

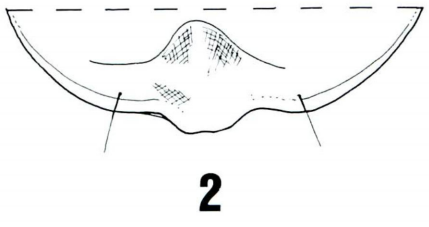
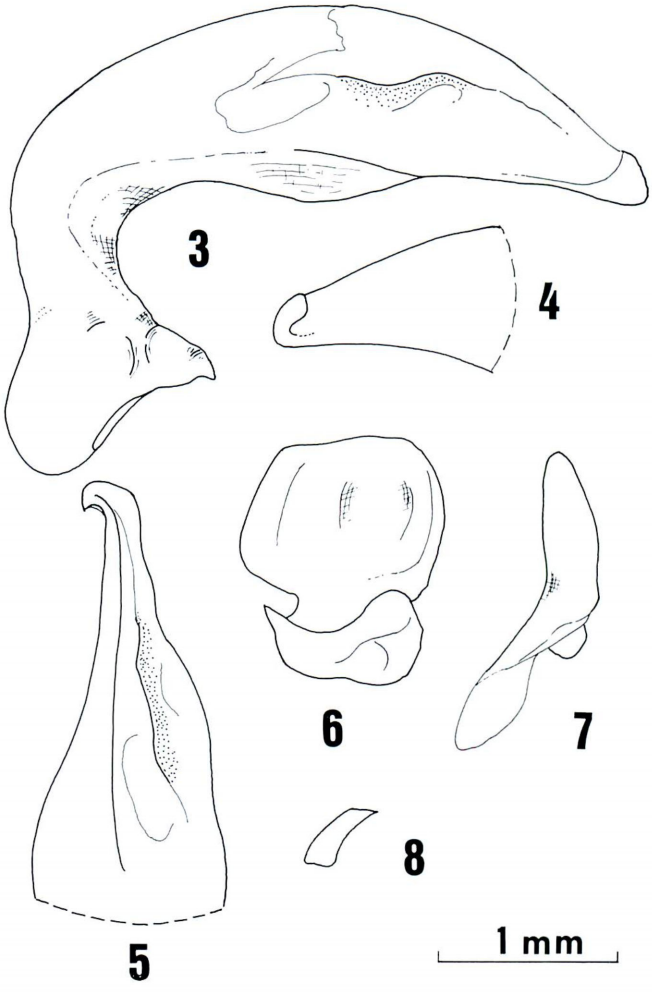


Fig. 2. *Pterostichus* (*Daisenialoe*) *shotaroi* MORITA, sp. nov.; apical sternite in ♂.

Microsculpture more distinct in ♀ than in ♂, forming isodiametric meshes on vertex and more or less transverse meshes on neck; micro-

sculpture of elytra forming transverse meshes, though coarser than that of pronotum, especially in ♀.

Legs rather slender; external margin of each protibia almost straight



Figs. 3–8. Male genitalia of *Pterostichus* (*Daisenialoe*) *shotaroi* MORITA, sp. nov., from Kawaradani in Hikigawa-chô, Wakayama Prefecture.

3. Aedeagus, left lateral view. 4. Apical part of aedeagus, right lateral view. 5. Apical part of aedeagus, dorso-apical view. 6. Separated left paramere, left lateral view. 7. Separated right paramere, right lateral view. 8. Separated copulatory piece, oblique lateral view.

though rarely slightly arcuate, while in *P. fujimurai* usually arcuate; protarsus with three sulci on basal three segments, which are deeper in ♂ than in ♀, segments 4 and 5 with only median sulcus and lacking in inner and outer ones, even the median one being rudimentary or disappearing; basal three segments of meso- and metatarsi each with three sulci, segment 4 with vague median sulcus and without inner and outer ones, and segment 5 with only median sulcus which is rudimentary or disappearing.

Aedeagus relatively stout and strongly bent at basal third; ventral side of apical two-thirds with a longitudinal ridge with rather strong wrinkles on both sides; apical membranous portion situated on the left dorso-lateral part; right side with a concavity at apical fourth and a small tumor at apical third; viewed dorsally, apical lobe rolled and forming a recurrent hook at apex; inner sac armed with a copulatory piece similar in conformation to that of *P. fujimurai* though somewhat wider and more elongate; copulatory piece rolled from the ventro-proximal part along the left side of inner sac to the dorso-apical part; left paramere wide and square; right one narrow, gently curved at about middle, with the apical part narrow and simply rounded.

Type series. Holotype: ♂, Kawaradani, 17. IX. 1980, S. TANAKA leg. (found in baited traps set by S. TANAKA on 14. IX. 1980). Allotype: ♀, same locality as the holotype, 19. VIII. 1982, S. TANAKA leg. (found in baited traps set by S. TANAKA on 17. VIII. 1982). Paratypes: 4♂♂, 1♀, same locality as the holotype, 17. IX. 1980, S. TANAKA leg. (found in baited traps set by S. TANAKA on 14. IX. 1980); 2♂♂, same locality, 19. IX. 1980, S. TANAKA leg. (found in baited traps set by S. TANAKA on 17. IX. 1980); 7♂♂, 3♀♀, same locality, 21. IX. 1980, S. TANAKA leg. (found in baited traps set by S. TANAKA on 17. IX. 1980); 2♂♂, same locality, 16. VIII. 1981, S. TANAKA leg. (found in baited traps set by S. TANAKA on 13. VIII. 1981); 1♂, 1♀, same locality, 19. IX. 1982, S. TANAKA leg. (found in baited traps set by S. TANAKA on 17. IX. 1982); 4♂♂, 2♀♀, same locality, 16. VIII, 1983, S. TANAKA leg. (found in baited traps set by S. TANAKA on 13. VIII. 1983); 3♀♀, same locality, 17. IX. 1983, S. TANAKA leg. (found in baited traps set by S. TANAKA on 14. IX. 1983); 2♂♂, Mt. Gyotokusan, 23. IX. 1981, S. TANAKA leg.; 1♂, same locality, 3. X. 1981, S. TANAKA leg.; 1♀, same locality, 11. X. 1981, S. TANAKA leg.; 1♂, 3♀♀, same locality, 16. X. 1981, S. MORITA & S. TANAKA leg.; 1♀, same locality, 21. IX. 1982, S. TANAKA leg.; 1♂, same locality, 18. IX. 1983, S. TANAKA leg.; 1♀, same locality, 13. V. 1984, S. TANAKA leg.; 1♀, same locality, 16. IX. 1984, S. TANAKA leg.

The holo- and allotypes are preserved in the collection of the National Science Museum (Nat. Hist), Tokyo. The paratypes are distributed to the above collection and the private collections of Mr. SHOTARO TANAKA and mine.

Localities. Kawaradani, Hikigawa-chô (type locality!) and Mt. Gyotokusan, Shagawa, Shirahama-chô, Wakayama Prefecture, near the southern tip of the Kii Peninsula of Honshu, Central Japan. The type locality is about 255 km distant to the southeast from Mt. Daisen, Tottori Prefecture, western Honshu, the type locality

of *P. fujimurai*.

This new species is closely allied to *P. fujimurai*. It is, however, distinguished from it by the following points: 1) body larger and wider; 2) pronotum deeply sinuate before hind angles at the sides; 3) elytra less parallel-sided, elongated subovoid; 4) interval 3 with three dorsal pores; 5) elytra with oblique shoulders; 6) elytral apices somewhat truncate, with sutural angles usually sharp; 7) in ♂, projection of apical sternite short and stout; 8) apical part of aedeagus forming a recurrent hook; and, 9) apical part of right paramere simply rounded.

This species is named in honour of Mr. SHOTARO TANAKA of Shirahama-chô who is the discoverer of the pterostichine.

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Studies on Japanese Anthribidae, IX. (Coleoptera)

By Taichi Shibata

Choragus konishii sp. nov.

Body cylindrical, bent down a little; reddish brown, elytra darkened, venter somewhat brownish, antennae black to dark brown with basal two joints yellowish as well as legs (hind femora in ♂ more or less darkened); slightly shining through rather dense pubescence, upper surface with a changing silky tone due to the pubescence silver-grey, longish and fine.

Head compactly reticulate-punctate, apex of rostrum trisinuate, less than twice as wide as interocular space, which being a little shorter than vertical diameter of eye, eyes oblong, somewhat angulately convex; antennae fully beyond elytral humeri, basal two pale joints elongate and clavate as usual, the residual stalks flagellate and gradually shortened forth, club elongate, asymmetrical, 9th and 10th joints irregularly triangular and 11th narrowly oval. Under surface of head reticulate-punctate, the punctures a little coarser than on the upper surface, antennal scrobes deep, running obliquely downward and accentuate buccal parts, buccal plate flat, rather smooth and regularly arcuate laterally, last joint of maxillary palpi shorter than the others and pointed apically.

Pronotum at apex about half narrower than base and approximately equalling the median length, in a dorsal view sides slightly arcuate-angulate near or at middle, from which converging in front, shallowly sinuate behind and falling into right angle on base; disc sculptured similarly on head, but the punctures a little deeper and more clearly ocellate, dorsal carina with a trivial hind projection on extreme lateral sides, and very weakly emarginate at middle, inferior basal carinulae present. Scutellum minute, triangular and whitish.

Elytra at least half as long again as basal width, which being a little narrower than pronotal base, usually parallel-sided and dorsally convex, with a very steep apical slant; punctate-striae not shallow, a trifle deepened laterally and well marked along suture, the punctures large

[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 49–50, June, 1987]

and deep, intervals flat, more or less raised on lateral and depressed on sutural areas, irregularly and not very densely punctured, the punctures small, partly dispersed, subbasal swelling upon 2nd and 3rd intervals convex lengthwise.

Pygidium sculptured alike on head; in ♂ proclinate, elongate-oblong, more than one and a half times as long as wide at base (2.0 : 1.2), sides gently narrowed thence to slightly arcuate apex, surface very weakly and vertically raised medianly; in ♀ quite vertical, triangular, a little longer than wide (1.1 to 1.2 : 1.0), somewhat swollen on centre, with apex very peculiar, so distinctly and irregularly notched as to be bilobed, or hollowed at mid-extremity.

Under surface similar in sculpture to those on elytral intervals excepting that apical area of prosternum before the coxae reticulately punctate, the punctures a little coarser and larger than those on head; prosternum no glossy spaces below carinae, abdomen abbreviated and depressed medianly, but anal segment thickly swollen, somewhat inclined forward and a little longer than the previous two segments together. Legs in ♂ unusually robust, longer and much thicker than in ♀, especially hind femora very strongly and clavately turgid, tibiae slightly bent, in ♀ femora moderately tumid and tibiae straight.

Length (excl. head): 2.1 to 2.3 mm.

Holotype: ♂, Mt. Hiko, Fukuoka Pref., Kyushu, 10. VIII. 1961, H. KONISHI leg. (T. SHIBATA coll.); paratype: 4♂♂ 6♀♀, same data as holotype.

Further examined materials, 2♂♂, Mt. Ichifusa, Kumamoto Pref., Kyushu, 9. VII. 1969, Y. KIYOYAMA leg.

The present species has a close relation to *C. cryphaloides* SHARP, but possesses the following distinctions: The pygidium in ♂ elongate-oblong instead of being triangular (2.0 : 1.2, while in the latter species, 1.1 : 0.8) and in ♀ irregularly cleft or hollowed at the apex, in ♂ the hind femora markedly swollen and the anal sternite well dilated, in front of which the abdomen rather strongly contracted and grooved, the body less narrow but robuster and silvery pubescence on the whole appreciably longer and denser than in the latter species.

Correction

The following word should be amended.

Mesosternal process ..... the carinae (in the original description of *Deropygus maedai*, 1986, Ent. Rev. Japan, 41 (1) : 51) = the carina.

Study of Asian Cetoniinae (1)
A New Species of the Genus *Anomalocera* from Taiwan (Scarabaeidae, Coleoptera)

by KIMIO MASUMOTO[1] and KAORU SAKAI[2]

The genus *Anomalocera* WESTWOOD, 1842, comprises five species, all from the Oriental region. Only one species is hitherto known from Taiwan: *A. olivacea* (ssp. *insularis* (MOSER, 1910)).

Recently, one of the authors, SAKAI found a second species of *Anomalocera* among Taiwanese specimens in his collection. In March 1987, MASUMOTO has had the opportunity of examining the type specimens and other material of all *Anomalocera* species preserved in the British Museum (Nat. Hist.), London and the Muséum National d'Histoire Naturelle, Paris and confirmed SAKAI's suspicion that the second Taiwanese species is undescribed; it is described in this paper.

The present authors wish to express their sincere gratitude to Dr. YOSHIHIKO KUROSAWA, for his invaluable advice, to Mr. LES JESSOP, British Museum (Nat. Hist.), and also to Dr. ROGER-PAUL DECHAMBRE, Muséum National d'Histoire Naturelle, for their kindness in permitting one of the authors (K. M.) to examine specimens in the collections of their Museums. Thanks are due to Mr. YOSHIKAZU MIYAKE, Tama City, and also Mr. KAORU WADA, Hino City, for their contributions of the specimen materials for this study.

The holotype is deposited in the National Science Museum (Nat. Hist.), Tokyo, and some paratypes are preserved in the British Museum (Nat. Hist.), London and also in the Muséum National d'Histoire Naturelle, Paris.

Anomalocera paotao sp. nov.

Body metallic yellowish green, with orange reflexion; the dorsal surface metallic green and with a deep brownish reflexion under a certain light (the coloration varies, e. g. some individuals are reddish brown with the dorsal surface bearing a dark reflexion under a certain light); antennae, eyes, and tarsi black; yellowish hairs present on ventral surface of head, apical margin of prosternum, ventral surface and front and hind margins of each femur, inner margin of tibia, mesosternum,

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[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 51-54, June, 1987]

major portion of metasternum except in the middle, outer margins of abdominal sternites and apical margin of pygidium, etc.; dorsal surface strongly, metallically shining and more or less bearing vitrous reflexion. Oblong oval and fairly robust; male rather elongate and female comparatively short and broad.

Head rather long, nearly flat, rather closely granulate, the granules becoming larger and sparser apically, longitudinally ridged from vertex to posterior portion of frons, the ridge becoming more strongly pronounced posteriorly; frons with a weak ridge along lateral margins,

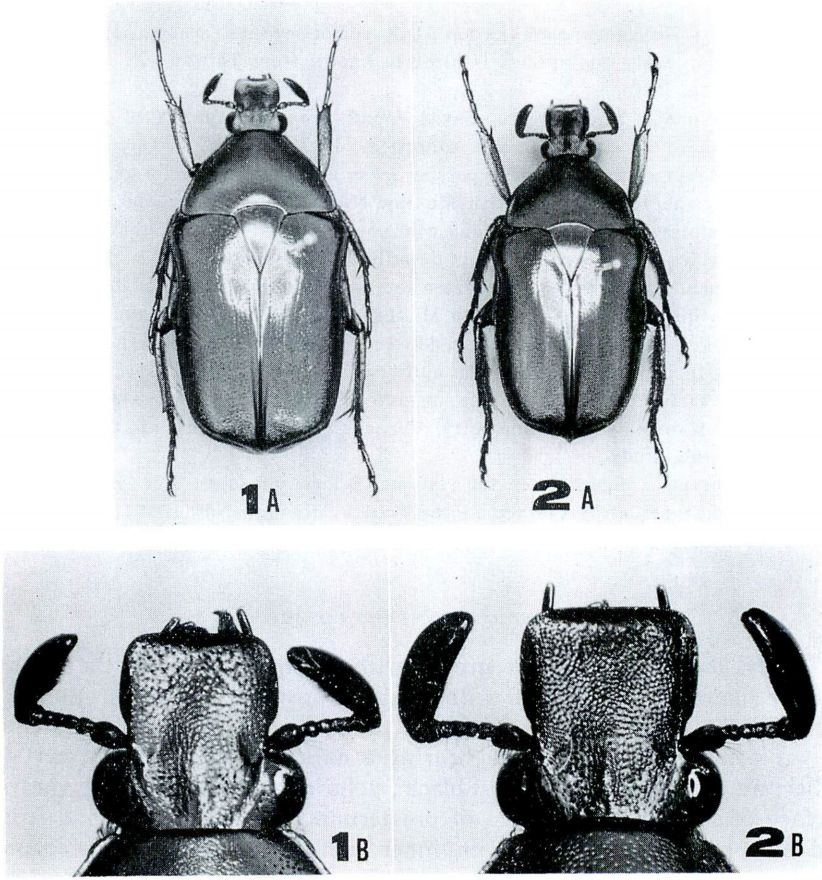

Fig. 1. 1, *Anomalocera paotao* sp. nov. (♂), holotype; 2, *Anomalocera olivacea insularis* (MOSER, 1910), (♂). A, dorsal view; B, head.

weakly produced downwards along the ridge; clypeus nearly straight and reflexed at apex; eyes moderately strongly convex laterad.

Pronotum trapezoidal, about 1.6 times as wide as long, widest at base, sides with a distinct angle, so they narrow more strongly in the apical half, ratio of width of base : apex almost 8 : 3; sides gently declined to clearly rimmed lateral margins; front angles obtuse; hind angles acute with apex rounded; disc scattered with fine punctures, which become smaller and sparser in the middle, comparatively larger and a little more closely spaced laterally. Scutellum elongate triangular with base rounded, almost impunctate.

Elytra about 1.3 times as long as wide, 2.5 times length and a little more than 1.1 times width of pronotum, gently convex, slightly flattened behind scutellum, fairly clearly ridged along suture in posterior half; disc with rows of punctures, which are fairly irregularly arranged, those in basal portion round and those in apical portion often fused with each other and

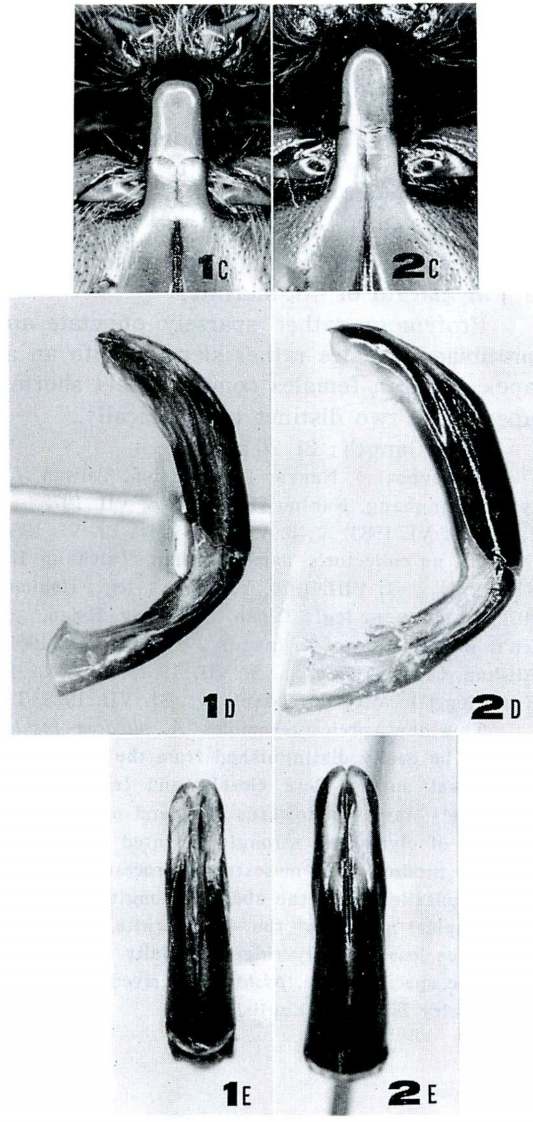

Fig. 2. 1. *Anomalocera paotao* sp. nov. (♂), holotype; 2. *Anomalocera olivacea insularis* (MOSER, 1910), (♂).
C, mesosternal process; D, male genitalia (lateral view); E, ditto (dorsal view).

becoming rather transverse and rugose; sides gradually declined to lateral margins, which are narrowly sulcate and rather finely rimmed, finely serrate apically; apices not strongly produced.

Pygidium rather transversely rugose.

Mesosternal process obliquely projected forwards and subparallel-sided, with apex subtruncate (see Fig. 2, 1C); metasternum not so closely, but clearly punctate and pilose in lateral portions, with a median groove, which is rather fine and evenly impressed along its length.

Abdomen not strongly impressed medially, the impression reaching apical margin of 4th sternite.

Profemora rather sparsely punctate and the punctures not rugose; protibiae in males rather slender, with an acute tooth at outer side of apex, those in females comparatively shorter and gently dilated towards apex, with two distinct teeth apically.

Body length: 21–26 mm.

Holotype: ♂, Nanya, Taipei Hsien, Taiwan, 7. VI. 1984, Lu Chinchi leg. Paratypes: Sungkang, Nantou Hsien, ♂, 5. VII. 1972, ♀, 8. VII. 1972, ♀, 19. VII. 1972, 2♂♂, 29. VI. 1983, ♀, 3. VIII. 1983, ♀, 29. VI. 1985, Lu Chinchi leg.; near Tattaka, ♀, 1959, no collector's name; Lishan, Taichung Hsien, 2♂♂, 29. VII. 1973, ♀, 28. VII. 1974, ♂, 1. VIII. 1974, Y. Miyake leg.; Hehuanshan, Nantou Hsien, ♀, 28. VII. 1972, Lu Chinchi leg.; Tapan, Taichung Hsien, ♂, 8. VII. 1979, T. Hattori leg.; Ich'ia-wan, North of Sikayau, 2♂♂, 20. VI. 1961, S. Uéno leg.; Chao-p'ing, Mt. Alishan, Chiayi Hsien, ♀, 5. VII. 1961, S. Uéno leg.; Pikanan, ♂, 11. VII. 1926, T. Kano leg.; locality unreadable, ♂, 31. VII. 1928, T. Kano leg.

This new species resembles *A. olivacea insularis* (Moser, 1910) from Taiwan, but can be easily distinguished from the latter by smaller and more slender body, the dorsal surface less closely and less rugosely punctate, the pronotum more moderately narrowed towards apex and not sinuous near the hind angles, the lateral margins of elytra less strongly indented near the base, the apices of the elytra less strongly produced, the mesosternal process not parabolically projected but subtruncate and subparallel-sided, the abdomen longitudinally impressed medially from the base to the apical margin of the 4th sternite, and the male genitalia is smaller with parameres less strongly ridged medially in dorsal view.

The specific name, *paotao*, is derived from the old name of Taiwan, which means the Jewelry Island in English.

A Contribution of the Knowledge of Females of Some Old World *Longitarsus* Species (Coleoptera, Chrysomelidae, Alticinae) on the Basis of their Spermathecae

By Blagoy Gruev

University of Plovdiv, Bulgaria

Spermatheca has been used a distinguishing character in the genus *Longitarsus* by Spett and Lewitt (1926), Kevan (1967) and Allen (1967).

The taxonomical value of this organ for *Longitarsus* has been afterwards estimated by Leonardi in his valuable paper on this subject (1972). Within a short time many other publications with drawings of the spermathecae of various species of *Longitarsus* followed this paper. In the final reckoning, over 120 taxa of *Longitarsus* have been investigated with respect to their spermathecae till 1985.

This paper contains figures of the spermathecae of other 55 *Longitarsus* taxa. Furthermore the specific status of *L. khnzoriani* Palij is resurrected (it has been considered synonym of *L. scrobipennis* Heikertinger; s. Gruev, 1982) on the basis of its spermatheca, and *L. succineus illicitus* Warchalowski is newly recorded to China.

Material examined[1)]

1. *Longitarsus albus* (Allard, 1866) (fig. 1)
   Israel: Holon dunes, South Coastal Plain, det. D. Furth.
2. *Longitarsus anchusae anatolicus* Weise, 1900 (fig. 2)
   Turkey: Anatolia, Konya, det. F. Heikertinger.
3. *Longitarsus aphthonoides* Weise, 1887 (fig. 3)
   China: Heilungkiang, Erlunghan, det. B. Gruev.
4. *Longitarsus apicalis* (Beck, 1817) (fig. 4)
   Bulgaria: Rhodope Mountains, Satovcha, det. B. Gruev.
5. *Longitarsus asperifoliarum* Weise, 1887 (fig. 5)
   U. S. S. R: Middle Asia, Zeravshan, det. V. Palij.
6. *Longitarsus birmanicus* Jacoby, 1892 (fig. 6)
   Vietnam: Buon-Loi, det. B. Gruev.

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1)All the specimens are preserved in the author's collection.

[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 55–61, June, 1987]

7. *Longitarsus bulgaricus* GRUEV, 1973 (figs. 7 a, b)

   Bulgaria : Rhodope Mountains, mountain hostel Zdravec, 20 km south from Plovdiv, paratype ; Bachkovo monastery, paratype ; Ivailovgrad, paratype.

8. *Longitarsus candidulus* (FOUDRAS, 1860) (fig. 8)

   Spain : Puerto Red, det. B. GRUEV.

9. *Longitarsus corpulentus* WEISE, 1887 (fig. 9)

   U. S. S. R. : Tajikistan, Karategin, det. I. LOPATIN.

10. *Longitarsus dorsopictus* CHEN, 1939 (fig. 10)

    China : Fukien, Kuatun, det. B. GRUEV.

11. *Longitarsus ellipticus* REITTER, 1909 (fig. 11)

    U. S. S. R. : Alma-Ata, det. I. LOPATIN.

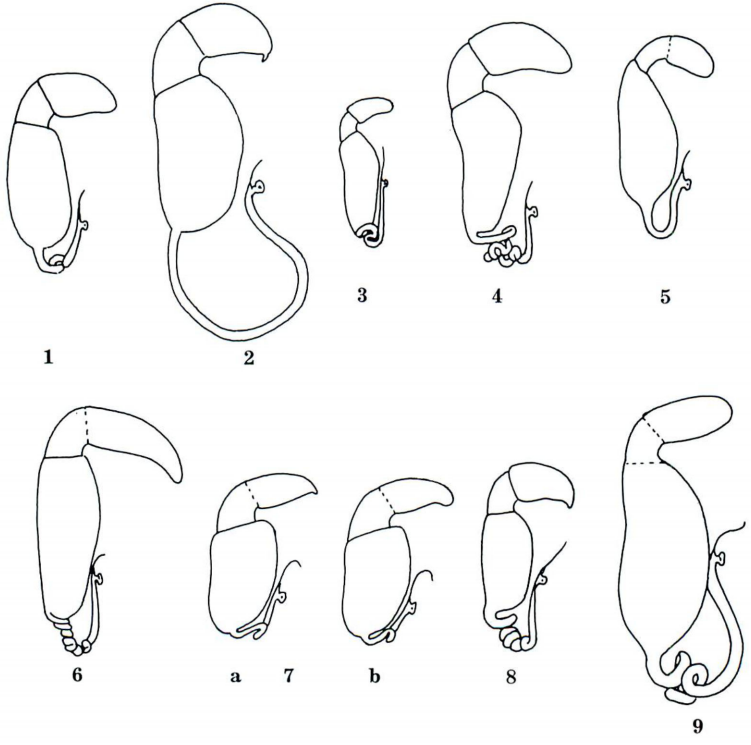
12. *Longitarsus emarginatus* WEISE, 1890 (fig. 12)

    Israel : Samaria, western Yarhiv, det. D. FURTH.

13. *Longitarsus fuscoaeneus* REDTENBACHER, 1849 (fig. 13)

    Turkey : Ankara, Karshiaka, det. B. GRUEV.

14. *Longitarsus fuscoaeneus persicus* WARCHALOWSKI, 1967 (fig. 14)



U. S. S. R.: Buhara, det. B. GRUEV.

15. *Longitarsus georgianus* (ALLARD, 1866) (fig. 15)

U. S. S. R.: SW Caucasus, Engelm. Poljana, det J. KRÁL.

16. *Longitarsus godmani* (BALY, 1876) (fig. 16)

Korea: Chagang Prov., Mts. Myohyang-san, Chongchon river, det. B. GRUEV.

17. *Longitarsus inconspicuus* WOLLASTON, 1860 (fig. 17)

Canary Islands: Gomera, Juan Tomé, det. B. GRUEV.

18. *Longitarsus jailensis* HEIKERTINGER, 1913 (fig. 18)

Turkey, det. B. GRUEV.

19. *Longitarsus hhnzoriani* PALIJ, 1970 Status resurrected (figs. 19 a, b)

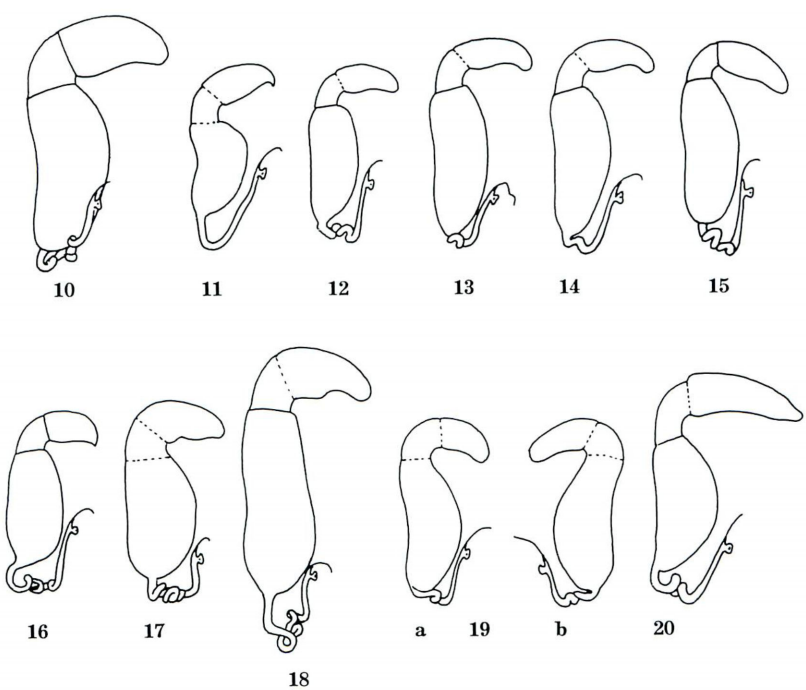
L. hhnzoriani PALIJ, 1970, Entom. issledovanija v Kirgizii, Frunze, pp. 3–15; LOPATIN, 1977, Leaf-beetles (Chrysomelidae) of Middle Asia and Kazakhstan, Leningrad. p. 215.

L. scrobipennis: GRUEV, 1982, Faun. Abh. Mus. Tierk. Dresden, 9 (8), p. 111.

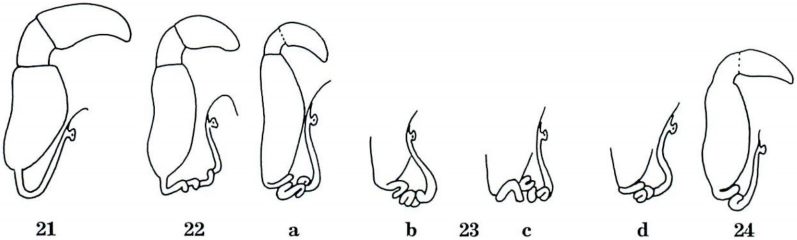
U. S. S. R.: Kirgizia, Issyk-Kul, paratype.

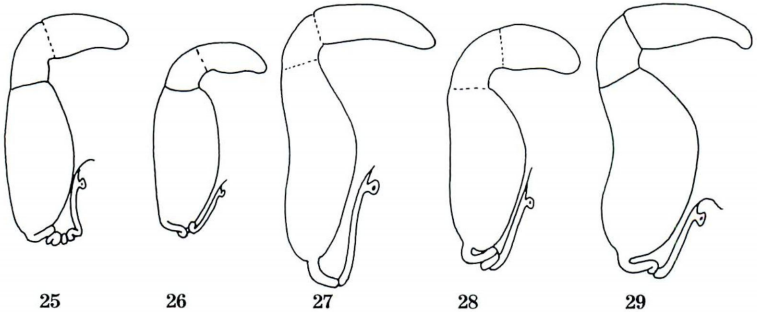
20. *Longitarsus kleiniiperda* WOLLASTON, 1860 (fig. 20)

Canary Islands: Tenerife, Bajamar, det. B. GRUEV.

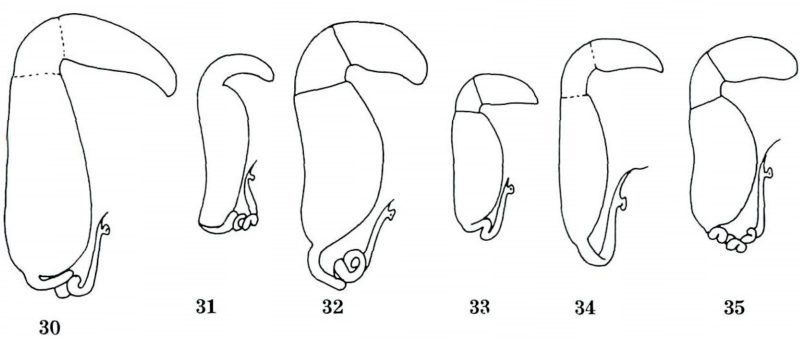


21. *Longitarsus lateripunctatus* (ROSENHAUER, 1856) (fig. 21)
Israel: Upper Galilee, Nachal Amod, det. D. FURTH.
22. *Longitarsus lederi* WEISE, 1889 (fig. 22)
U. S. S. R.: Caucasus, Abago, det. V. PALIJ.
23. *Longitarsus longipennis* KUTSCHERA, 1863 (figs. 23 a, b, c, d)
Bulgaria: Novi Pazar; Trojan; Burgas; Slavianka Mountain, det. B. GRUEV.
24. *Longitarsus longiseta* WEISE, 1889 (fig. 24)
U. S. S. R.: Ramon nr. Voronezh, det. B. GRUEV.
25. *Longitarsus medvedevi* SHAPIRO, 1956 (fig. 25)
U. S. S. R.: Voroshilovgrad, det. B. GRUEV.
26. *Longitarsus metzei* CHEN, 1934 (fig. 26)
Vietnam: Tanh liet, SE of Hanoi, det. B. GRUEV.
27. *Longitarsus nebulosus* (ALLARD, 1866) (fig. 27)
France: Corsica, det. F. HEIKERTINGER.
28. *Longitarsus niger* (KOCH, 1803) (fig. 28)
Bulgaria: Rhodope Mountains, Dospat, det. B. GRUEV.
29. *Longitarsus nigrofasciatus rudipennis* (ALLARD, 1866) (fig. 29)
France: Corsica, det. F. HEIKERTINGER.
30. *Longitarsus nitidiamiculus* KIMOTO, 1965 (fig. 30)
U. S. S. R.: Far East, Kraskino, det. B. GRUEV.

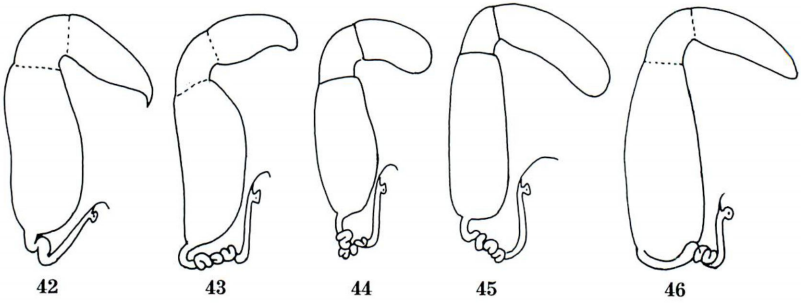


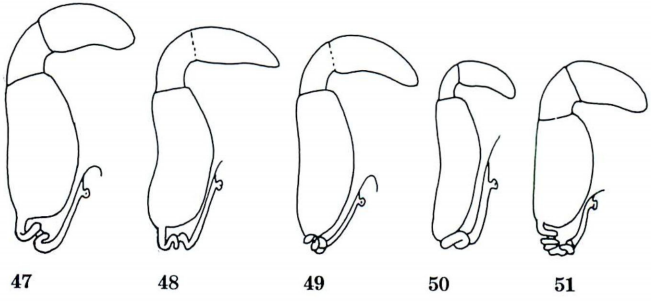


31. *Longitarsus nitidus* JACOBY, 1885 (fig. 31)
U. S. S. R.: Far East, Tarasovka, det. B. GRUEV.
32. *Longitarsus pallidicornis* KUTSCHERA, 1863 (fig. 32)
Czechoslovakia: Slovakia, det. J. KRÁL.
33. *Longitarsus piceorufus* CHEN, 1939 (fig. 33)
Korea: Kum-gang san, det. B. GRUEV.
34. *Longitarsus picicollis* WEISE, 1900 (fig. 34)
U. S. S. R.: Middle Asia, Zeravshan, det. V. PALIJ.
35. *Longitarsus primaeveris* LOPATIN, 1967 (fig. 35)
U. S. S. R.: Tajikistan, Terekli-tau, det. I. LOPATIN.
36. *Longitarsus pulexoides* CHEN, 1939 (fig. 36)
China: Fukien, Shaowu, Tachulan, det. L. GRESSITT & S. KIMOTO.
37. *Longitarsus punctiger* SAHLBERG, 1913 (fig. 37)
Israel: Wadi Kelf, det. D. FURTH.
38. *Longitarsus rangoonensis* JACOBY, 1892 (fig. 38)
Burma: Tenasserim, det. B. GRUEV.
39. *Longitarsus rectelineatus* (FOUDRAS, 1860) (fig. 39)
F. R. G.: Bavaria, det. C. LEONARDI.



40. *Longitarsus rufotestaceus* CHEN, 1933 (fig. 40)
Vietnam: Ha Son-Binh, Chua Huong, det. B. GRUEV.
41. *Longitarsus scrobipennis* HEIKERTINGER, 1913 (fig. 41)
Bulgaria, det. B. GRUEV.
42. *Longitarsus sencieri* (ALLARD, 1860) (fig. 42)
Morocco: Prov. Rharb, det. A. WARCHALOWSKI.
43. *Longitarsus sogdianus* LOPATIN, 1956 (fig. 43)
U. S. S. R.: S. Tadjikistan, det. I. LOPATIN.
44. *Longitarsus stragulatus* (FOUDRAS, 1860) (fig. 44)
France, det. B. GRUEV.
45. *Longitarsus stragulatus pallidicollis* WOLLASTON, 1865 (fig. 45)
Canary Islands: Fuerteventura, Cumbre Jandia, det. B. GRUEV.
46. *Longitarsus succineus illicitus* WARCHALOWSKI, 1970 (fig. 46)
China: Fukien, Kuatun, det. B. GRUEV. New to China.
47. *Longitarsus symphyti* HEIKERTINGER, 1912 (fig. 47)
U. S. S. R.: Ramon nr. Voronezh, det. B. GRUEV.
48. *Longitarsus tmetopterus* JACOBSON, 1893 (fig. 48)
U. S. S. R.: Tadjikistan, det. I. LOPATIN.





49. *Longitarsus tournefortiae* L. MEDVEDEV et N. VORONOVA, 1977 (fig. 49)
Mongolia: Ubsunur aimak, paratype.

50. *Longitarsus transbaicalicus* OGLOBLIN, 1921 (fig. 50)
U. S. S. R.: Buriatia, det. V. PALIJ.

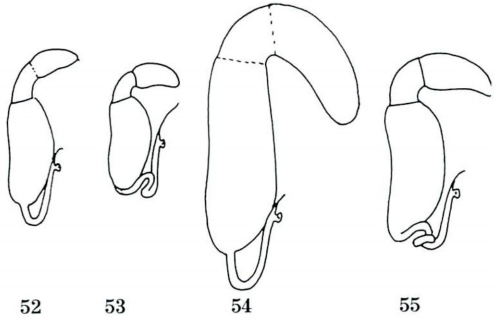
51. *Longitarsus trepidus* WARCHALOWSKI, 1973 (fig. 51)
Iran: Borujerd, paratype.

52. *Longitarsus tshikatunovi* LOPATIN, 1966 (fig. 52)
U. S. S. R.: Turkestan Ridge, det I. LOPATIN.

53. *Longitarsus violentus* WEISE, 1893 (fig. 53)
U. S. S. R.: Kazakhstan, Aksu, Dzhabagla, det. V. PALIJ.

54. *Longitarsus walterhorni* CSIKI, 1940 (fig. 54)
China: Fukien, Kuatun (hind wings developed), det. B. GRUEV.

55. *Longitarsus weisei* GUILLEBEAU, 1895 (fig. 55)
Iran: Bigan, det. A. WARCHALOWSKI.



Acknowledgements. I am greatly indebted to Prof. Dr. SHINSAKU KIMOTO, Kurume University (Japan) for his valuable assistance.

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SPETT, G. & LEWITT, M., 1926; Versuch einer Verwertung des Receptaculum seminis als systematisches Merkmal bei den Chrysomeliden. Archiv f. Naturg., Berlin, 92 A(6): 96–148.

New Name for Longicorn Beetle of Taiwan (Coleoptera, Cerambycidae)

By Hiroshi Makihara & Masao Hayashi

By the kind suggestion of Mr. T. Niisato of Tokyo University of Agriculture, we recognized that the name *Anaglyptus hirsutus* was previously used by Gressitt & Rondon for a species of Laos. New name is proposed here for the kindness of Mr. M. Higashiyama, who loaned the valuable specimens.

Anaglyptus higashiyamai nom. nov.

For *Anaglyptus hirsutus* Makihara & Hayashi, 1984, Elytra, 11 (1/2): 5 (Taiwan).
Not *Anaglyptus hirsutus* Gressitt & Rondon, 1970, Pac. Ins. Mon., 24: 279 (Laos).

ニセツマキミズギワゴミムシ 中華人民共和国に産する

李　景　科

Bembidion (*Peryphus*) *yanoi* Jedlička ニセツマキミズギワゴミムシの産地は現在まで日本のみであるが，このたび営口県東部山地の河原において発見した．手許の標本は森田誠司（1986，昆虫学評論，41 (1): 67-72）の記載に完全に一致するが，次のような若干の相違点がある．1）触角第2節と3節の長さの比は 1 : 1.8, 2）翅端溝は第5条に連なる，3）翅端の紋はやや大きい，4）腿節の端部は黄褐色，5）体長は 5.5 mm.

1 ♂ 1 ♀，26. v. 1986，遼寧省営口県大清河辺（山川）．

[Ent. Rev. Japan, Vol. XLII, No. 1, p. 62, Jane, 1987]

Three New Species and a New Record of Carabidae from Taiwan (Truncatipennes) (Coleoptera)

By Taichi Shibata

The following valuable examples, in the present paper, were obtained by members of the Osaka Coleopterological Society, to whom I would like to express my thanks with the best compliment.

Parena testacea Chaudoir

1892, Ann. Soc. ent. Belg., 15 : 178 (*Crossoglossa*).
1♂, Nanshanchi, Nantou Hsien, 2. VIII. 1969, Y. Maeda leg.
This is a new record for the species.

Parena monticola sp. nov.

Brown to reddish brown, head and pronotum almost black, antennae (except primary joint), apices of femora and sometimes under surface of body darkened, elytra metallic dark green with brownish narrow lateral margins, the green tinge clearer than in *P. latecincta* Bates, but giving a dull appearance.

Head a little wider than pronotum, rather evenly and slightly convex, with punctures of unequal sizes, minuter and sparser than those of *P. latecincta,* clypeal suture shallow, frontal foveae distinct, coarsely, rugosely and unevenly punctured, and bounded laterally by a longitudinal plica, frons between eyes with two or three faint transverse impressions, in front of which a central depression shallow, somewhat reddish and within a rather deep sulcus, neck-constriction also deep and relatively distinct, eyes usually convex, antennae hardly reaching base of pronotum, 2nd and 3rd naked joints reddish apically, mentum oblique on sides of sinus, hence epilobes triangularly widened.

Pronotum 1.36 times as wide at ante-median point as long, sides wherefrom sufficiently rounded in front, gently sinuate behind to obtusely

[Ent. Rev. Japan, Vol. XLII, No. 1, pp. 63-67, June, 1987]

angled base, very narrowly marginate and reflexed, their inner grooves shallow, gradually deepened back from near middle of sides and falling into rounded basal foveae, surface flattened, not so steeply declining down toward latero-apical corners as in *P. latecincta,* and less convex in hind half than in front half, uneven (especially on baso-apical median areas), with several transverse impressions and scattered fine punctures, the impressions ruga-like and obscure, but a little distincter than front ordinary impression, among them laterally with minute punctures, which are much finer and somewhat denser than the punctures on the disc or on head, middle line shallow and hind ordinary transverse impression quite obsolete. Scutellum reddish brown.

Elytra 1.6 times as long as wide, gently dilated from square humeri to apical third, outer-apical angles narrowly or slightly angulate-rounded, striae fine, their punctures minute, obscure and shallow, a little clearer laterally and evanescent apically, intervals slightly raised lengthwise, with extremely minute and scattered punctures, which are much minuter and sparser than those on the striae, three setiferous pores regularly situated individually on 3rd interval, marginal pores of uninterrupted series twenty-five to twenty-six in number, a median depression on each elytron, shallow but distinct, well observable in a post-oblique view, microsculpture very faint or obsolete, only slight meshes narrowly visible.

Pro-, mesosterna smooth, metasternum laterally with shallow and sparse punctures, which are larger than in *P. latecincta,* metepisterna obscurely rugulose, abdomen not densely pubescent, last segment bisetose apically on each side. Mesotibiae slender, not so enlarged distally.

Length : 9.6 mm.

Holotype : ♀, Tungpu Spa (a side of Mt. Yushan), Nantou Hsien, 11. VI. 1980, K. KUZUGAMI leg. (SHIBATA coll.)

The present species is very closely allied to *P. pendleburyi* ANDREWES from N. Borneo, but the body is larger, with the elytra are less in a metallic tinge, proportionally longer or slimmer in hind half, more shallowly, not clearly punctured on the striae, and the distinct depression is present on each elytron.

Parena circumdata sp. nov.

Of exactly similar to *P. latecincta* BATES, but elytra completely encircled by a serial metallic dark green fascia (except lateral and apical narrow margins), the metallic color much clearer, while in the latter species the fascia of less extent, leaving basal side, practically black and only tinged with a very faint metallic dark green (aeneous).

Head gently convex between eyes, obscurely and sparsely punctured

on shallow frontal foveae, with neck rather distinctly constricted. Pronotum sparely rounded in front from somewhat angulate ante-median point, whose hind sinus long and not so deep, therefore sides rather substraightly convergent behind, baso-lateral areas including basal foveae explanate and without appreciable punctures. Elytra with outer-apical angles and extreme truncature are both scant of roundness, punctures on striae very shallow and obscure, those on intervals reduced, scarcely observable, 6th interval a little raised lengthwise toward apex from behind or near humeral angle, and well defining lateral slope of each elytron. Apices of femora darkened as well as head above and pronotum on major area. Aedeagus close in shape to that of *P. latecincta,* but deeply sinuate subbasally on ventral side, and almost parallel-sided in hind half, so that its dorso-distal corner abruptly and angulately curved and steeply slanting down to apical lamella.

Length: 9.6 to 10.6 mm.

Holotype: ♂, Ssuleng (near Paleng), Taoyuan Hsien, 13. V. 1982, F. KIMURA leg. (SHIBATA coll.); paratype: 1♀, same data as holotype.

P. rubripicta ANDREWES and *bicolor* MOTSCHULSKY resemble closely to the present species, however, according to the descriptions by ANDREWES, the head and pronotum are smooth or devoid of distinct punctations, but on striae of the elytra they are very clear, in the present species the head and pronotum are more or less distinctly punctulate as in *P. latecincta,* still on the elytral striae the punctations are very shallow and obscure, rather finer or more obsolete than those of *P. latecincta.*

Dolichoctis kuzugamii sp. nov.

Oval, shining, brown, under surface on lateral sides and tibiae more or less darkened, elytra black, with marginal narrow borders yellowish brown and sutural intervals brownish, both inclining to yellow toward apex, each elytron with a humeral spot and subapical transverse fascia brownish yellow, the spot subsquare, extended to 4th stria from lateral margin and occupying about a quarter of elytral side-length, the subapical fascia narrow, reached to 1st stria from lateral margin, but hardly crossing at all on sutural interval, flexuous, rather sigmoid in profile, prolonged forward on 4th interval, deeply sinuate on 6th interval in front and between 4th and 5th behind.

Head evenly and weakly convex, only shallowly depressed near ends of clypeal suture, surface punctured nowhere, with a fine but evident isodiametric microsculpture, clypeus slightly convergent in front at sides, clypeal suture finely impressed, eyes suboval, a little longer than usual, supraorbital setiferous pores deepened into pits, neck without obvious constriction, antennae passing fully beyond base of pronotum,

4th joint pubescent, but less in density than the succeeding joints, ligula narrowly oblong, rounded apically and laterally with adnate paraglossae, distal joint of maxillary palpi of nearly equal length to primary joint, fusoid, and blunt at apex, mentum without median tooth and basally with a vestige of transverse suture.

Pronotum with the widest point placed before middle, where angulate and less than twice as wide as long (5 : 3), from which sides substraightly convergent, gently in front and more obliquely behind, without distinct sinus before base, apex a little wider than the median length and deeply emarginate, front angles distinctly produced forward but narrowly rounded, base as wide as apex, substraight or slightly oblique on each side, so that hind angles obtuse, somewhat rounded at apex, side margins narrowly, rather strongly reflexed, inner marginal grooves shallow throughout, surface flat on major area, with meshes of isodiametric microsculpture (more obscure than on head) and several transverse impressions, among them trivial minute punctures thinly distributed, basal foveae deep, groove-like, long and irregularly flexed, extended from base nearly to apical third, midway in the process convex laterally and widened a little, baso-lateral area, between basal fovea and marginal groove, weakly swollen instead of explanate, middle line deep, more deepened on baso-apical areas, both of which laterally with some longitudinal short plicae. Scutellum usually triangular.

Elytra short-oval, evenly, regularly and fairly rounded, therefore the widest at middle, where just a little shorter than the sutural length (3.0 : 3.8) and nearly twice as wide as the maximal width of pronotum, humeral angles fully rounded but indicated, outer-apical angles obtuse, somewhat angulate, each extreme truncature oblique, more or less sinuate, and turning inside near suture in a curve, side margins (inclusive of base) distinctly reflexed, their inner grooves deep but decreasing gradually in depth and widened backward from near middle, surface well convex, striae distinctly impressed throughout, with more or less feeble evidence of punctures, intervals smooth, flat, slightly convex laterally, three setiferous pores, basal, median, and ante-apical, on 3rd interval, hinder two of which contiguous to 2nd stria, microsculpture of transverse meshes fine, distinct and well observable.

Under surface microsculptured alike on pronotum, prosternum fairly convex along middle and on the same plane as its process, which is finely bordered between the coxae, mesosternal process also bordered laterally, metepisterna subsquare, almost as wide as long, abdomen very finely ciliate. Legs thin, front femora clavate, or a little thicker than the hind four, tibiae without a bend, tarsi slender, 1st segment of hind tarsi as long as 5th, claws each and all with five teeth.

Length : 3.5 mm. ; width : 2.0 mm.

Holotype : ♀, Liukuei, Kaohsiung Hsien, 8. IV. 1978, K. KUZUGAMI leg. (SHIBATA coll.)

The present species is closely related to *D. angulicollis* CHAUDOIR, but the form differs greatly, it is narrower in the latter species, the elytra are short of roundness and still narrower, at least subparallel-sided from square shoulders to the middle, the form of the present species is oval, the elytra are also short-oval, fairly and regularly rounded, with the shoulders are not barely square but angulate. As regards the elytral pattern, it is not unlike that of *Menarus borneensis* JEDLIČKA, however, saving for the generic characters, whose elytral curvature is less than in the present species, and the pronotum is narrower, with the basal foveae are structurally different.

国際動物命名委員会からのお願い (4)

ITZN 59 18 December, 1986

The following Opinions have been published by the International Commission on Zoological Nomenclature in the Bulletin of Zoological Nomenclature, volume 43, part 4 on 11 December, 1986.

Opinion No.

1418 (p. 325) *Glyphipterix* HÜBNER, (1825) (Lepidoptera): *Tinea bergstraesserella* FABRICIUS, 1781 designated as type species.

ITZN 11/5 18 December, 1986

The following applications have been received by the Commission and have been published in volume 43, part 4, of the Bulletin of Zoological Nomenclature (11 December, 1986). Comment or advice on them is welcomed and should be sent c/o The British Museum (Natural History), London, England. Comments will be published in the Bulletin.

Case No.

2426 *Lycaena mirza* PLÖTZ, 1880 (Lepidoptera): proposed conservation by the suppression of *Lycaena mirza* STAUDINGER, 1874.

2574 *Paraphytomyza* ENDERLEIN, 1936 (Diptera): proposed designation of *Phytagromyza luteoscutellata* DE MEIJERE, 1924 as type species.

2560 *Simulium austeni* EDWARDS, 1915 (Diptera): proposed precedence over *Simulia posticata* MEIGEN, 1838.

2575 *Tribolium castaneum* (HERBST, 1797) (Coleoptera): proposed conservation by the suppression of *Tribolium navale* (FABRICIUS, 1775).

2561 *Opius* WESMAEL, 1835 (Hymenoptera): proposed designation of *Opius pallipes* WESMAEL, 1835 as type species.

2572 *Leptura marginata* FABRICIUS, 1781 (Coleoptera): proposed conservation by the suppression of *Leptura marginata* O. F. MÜLLER in ALLIONI, 1766.

Some Carabid Beetles of the Island of Yaku-shima, Southwest Japan

By Seiji Morita

Up to the present, total sixty-seven species of carabid beetles have been recorded from the Island of Yaku-shima, off southern Kyushu, Southwest Japan. Of these, nine are flightless and endemic to the island: e. g., *Epaphiopsis watanabeorum*, *Lamprotrechus convexiusculus*, *Pterostichus yakushimanus*, and so on. They are found at higher altitude of the island which attains to 1,935 m above sea-level at the highest point. Many of the others are fully winged and widely distributed in the mainland of Japan. They have been only poorly recorded until now in contrast to the endemic forms.

In the autumn of 1984, I had an opportunity to visit this island and searched for the carabid beetles at four localities of low elevation, Anbô, Koseta, Onoaida and the vicinities of Yaku-shima Airport. Though it was pretty cold then, they were very active and were mainly found in the gutters at the sides of the road, into which they had fallen at night. Two bembidiine carabid beetles, *Bembidion semiluitum nakanoshimense* and *B. hiogoense*, were obtained at the mouth of rivers.

In the present short report, I am going to record some carabid beetles which were obtained during my short stay on the island.

1 *Damaster blaptoides blaptoides* Kollar

1 ex, Koseta, 23-XI-1984.

2* *Bembidion semiluitum nakanoshimense* (S. Uéno)

8 exs, Anbô, 22-XI-1984; 1 ex, Koseta, 23-XI-1984.

It has never been reported since it was described by Uéno (1955) from Amadomari and Satomura, on the Island of Nakano-shima, one of the Tokaras, and is usually found on the beach or at the estuary. It is also known from the Island of Tanegashima (6 exs from Nakatane-chô, taken by T. Matsuda on May 2, 1977, and preserved in my collection).

3* *B. hiogoense* Bates

4 exs, Koseta, 23-XI-1984.

It is common both in plains and hilly areas throughout the main islands.

4* *Trigonognatha coreana* (Tschitschérine)

1 ex, Koseta, 23-XI-1984.

Each species marked with an asterisk is new record to the Island of Yaku-shima.

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This record is based on remains of a specimen consisting of a pair of elytra. Through the courtesy of Prof. M. SATÔ, I was fortunately able to examine the same species. The collecting data of the specimen are as given below: 1 ex, Anbô, 20-VII-1968, T. AMANO leg.

5 *Trigonotoma lewisii* BATES

2 exs, Koseta, 23-XI-1984; 2 exs, Onoaida, 24-XI-1984.

6 *Platynus satsunanus* HABU

2 exs, Koseta, 23-XI-1984.

7 *Dolichus halensis halensis* (SCHALLER)

f. *flavicornis* FABRICIUS 5 exs, Anbô, 22-XI-1984; 8 exs, Koseta, 23-XI-1984.
f. *halensis* SCHALLER 5 exs, Anbô, 22-XI-1984; 3 exs, Koseta, 23-XI-1984.

8 *Crepidactyla nitida nitida* MOTSCHULSKY

2 exs, Koseta, 23-XI-1984.

9 *Synuchus arcuaticollis* (MOTSCHULSKY)

3 exs, Anbô, 22-XI-1984; 8 exs, Koseta, 23-XI-1984.

10* *Amara chalcophaea* BATES

16 exs, Anbô, 22-XI-1984; 1 ex, Yaku-shima Airport, 24-XI-1984.

11* *A. simplicidens* MORAWITZ

1 ex, Anbô, 22-XI-1984; 2 exs, Koseta, 23-XI-1984.

12* *A. macronota ovalipennis* JEDLIČKA

3 exs, Anbô, 22-XI-1984; 2 exs, Koseta, 23-XI-1984.

13 *Anisodactylus signatus* (PANZER)

4 exs, Anbô, 22-XI-1984.

14* *Harpalus eous* TSCHITSCHÉRINE

4 exs, Koseta, 23-XI-1984.

15* *H. pseudophonoides* SCHAUBERGER

3 exs, Koseta, 23-XI-1984.

16 *H. griseus* (PANZER)

2 exs, Anbô, 22-XI-1984.

17* *H. tridens* MORAWITZ

1 ex, Anbô, 22-XI-1984.

18 *H. niigatanus* SCHAUBERGER

5 exs, Koseta, 23-XI-1984.

19* *H. sinicus sinicus* HOPE

9 exs, Anbô, 22-XI-1984; 1 ex, Koseta, 23-XI-1984.

20* *H. crates* BATES

5 exs, Anbô, 22-XI-1984.

21 *Trichotichnus congruus* (MOTSCHULSKY)

1 ex, Koseta, 23-XI-1984.

22* *Trichotichnus kobayashie* HABU

21 exs, Koseta, 23-XI-1984.

23* *Bradycellus laeticolor* BATES

1 ex, Koseta, 23-XI-1984.

24* *Haplochlaenius costiger* (CHAUDOIR)

3 exs, Koseta, 23-XI-1984; 3 exs, Onoaida, 24-XI-1984; 1 ex, Yaku-shima Airport, 24-XI-1984.

25 *Chlaenius bioculatus* CHAUDOIR

5 exs, Koseta, 23-XI-1984; 5 exs, Yaku-shima Airport, 24-XI-1984.

26 *C. rufifemoratus* (MACLEAY)

2 exs, Koseta, 23-XI-1984; 2 exs, Yaku-shima Airport, 24-XI-1984.

27 *Planetes puncticeps* ANDREWES

3 exs, Koseta, 23-XI-1984.

28* *Galerita orientalis* SCHMIDT-GOEBEL

1 ex, Yaku-shima Airport, 24-XI-1984.

At the end of this report, I wish to thank Dr. SHUN-ICHI UÉNO of the National Science Museum (Nat. Hist.), Tokyo, for his kindness in reading the manuscript. Thanks are also due to Professor MASATAKA SATÔ of Nagoya Women's University, and to Mr. TSUTOMU MATSUDA for kindly supplying me with important material.

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第38回（昭和61年度）大会記録

昭和61年度の第38回大会は，同年12月14日午前10時30分から大阪市立自然史博物館において開催された．午前中は例年どおり自由懇談および甲虫標本の同定に当てられた．

午後1時から林幹事の司会により，まず大倉幹事から会務会計報告が行われた．なお，過日の在阪幹事会において，常任幹事が死去により欠員のため，新たに石田裕・澤田高平両幹事を常任幹事として補充した旨報告したところ，出席全員の拍手があって承認された．引続き林靖彦・清山好美両氏により“マレーシアの採集地の景観について”と題し，スライドによる講演が行われ，これに関連して林匡夫氏から“熱帯地域の概観”について補足説明がなされた．今回は諸般の事情から記念講演が取り止められたので，出席者全員の自己紹介並びに研究分野について1人1話が行われて，午後4時すぎ閉会した．

当日の出席者（敬称略・*は懇親会出席者）は下記のとおりである．

青野孝昭・有本久之・畑山武一郎・*林　匡夫・林　靖彦・*穂積俊文・*生谷義一・今坂正一・石田　裕・岩田隆太郎・加藤敦史・*清山好美・*的場　績・*松田　潔・松田　勗・*奈良　一・生川展行・*野村　全・*越智輝雄・大石久志・*大川親雄・*大倉正文・斉藤昌弘・澤田高平・高羽正治・*田中昭太郎・田村　周・田村　保・*遠山雅夫・豊嶋亮司・山下晶・*吉田正隆・吉原一美・吉川文弘．

（大倉）

オオハナコメツキについて

大　平　仁　夫

Notes on *Platynychus nothus* (CANDÈZE, 1865) from Japan (Coleoptera: Elateridae)

By HITOO ÔHIRA

琉球に分布するオオハナコメツキについては，KISHII (1979) による研究で，今まで広く分布していると思われたカンショハナコメツキ *Dicronychus* (*Platynychus*) *formosanus* (MATSUMURA, 1910) は八重山諸島（石垣島，西表島）の一部にわずかに分布するのみで，奄美大島や沖縄本島などに分布するものは，北海道～九州にかけて広く産するオオハナコメツキ *D.* (*P.*) *nothus* (CANDÈZE, 1865) の亜種であることを明らかにされた．

本土に産するオオハナコメツキについても，従来いくつもの学名が付されていて，この仲間の分類のむずかしさを示しているが，この間の事情については，大平（1974）に若干の説明がなされている．筆者はその後，本種について調査を進めてきたので，ここにその概要を報告することにした．

1.　本土産のオオハナコメツキについて

オオハナコメツキ（*nothus*）は，北海道から九州にかけて広く分布が知られている普通種で，記録上での南限は屋久島，口永良部島になっている．また，伊豆諸島では新島，神津島などが知られており，日本海側の島では佐渡島から記録されている．

本種は体長 8 mm から 12 mm くらいまでの変異がみられ，触角や肢などは一般に暗褐色を呈するが，伊豆諸島に分布する個体では触角や肢など赤褐色を呈するものが多い．体形は一般に雌個体では大形で幅広く，雄個体ではより細長くて小形である．幼虫は砂壌土中に生息し．乳白色をした細長い体形を有し，本科の他の幼虫類とは著しく相違している．また，農耕地に多くみられるため，農作物などと共に人為的に分布が拡大されていることも考えられる．

本種の雄交尾器の中央突起は比較的細長く，先端に向って漸次細まる (Pl. 1, C)，また側突起の末端部の外側は彎曲して細まり，末端は多少とも斜めに切断状である (Pl. 1, A, B, D)．また，末端部の表面には大形の点刻を散布するが，点刻は外側により多く分布する (Pl.

〔昆虫学評論，第 42 巻，第 1 号，73-76頁，第 1-2 図版，6 月，1987年〕

1, D). 触角は細長く，第2節は棍棒状，第3節から鋸歯状を呈し，第4節は第3節の約1.2倍の長さである (Pl. 1, I, K, L). 雌内部生殖器の bursa copulatrix の袋の内部には，1対の多くの突起を有する角質片 (Pl. 1, E, F, G) と1個の象の鼻形をした角質片 (Pl. 1, H) とを有する．突起を有する角質片については，1対はほぼ似たような形をしているが，個体変異もあって，その特徴がつかみにくいが，およその外形は図示（1個を図示）したようである．象の鼻形をしたものは外形がほぼ一定しており，本土産のものは図示 (Pl. 1, H) したような形をしている．象の鼻形の筒の中は中空になっているが，このものの役割については全く不明である．

2. 琉球産のオオハナコメツキについて

琉球産の種については KISHII (1979) によって，奄美大島産のものについてはオオハナコメツキの亜種 *D.* (*P.*) *nothus amamianus* KISHII, 1979 とされ，沖縄以南のものは *D.* (*P.*) *nothus loochooensis* KISHII, 1979 と命名されて記載がなされた．

琉球産のオオハナコメツキについては，前述のように従来はカンショハナコメツキとされていたもので，台湾産の本種の実体がよくつかめなかったこともあって，MIWA (1934) のモノグラフの記録に従っていたものである．琉球に広く分布する種は，筆者が調査した限りでは KISHII (1979) の見解とは異っており，独立種であると判断される．

本種は体長 8 mm から 12mm くらいまでの変異があり，体はオオハナコメツキより幅広く，前方と後方により顕著に細まる．触角と肢は茶褐色で，前頭部，前胸背板の周辺部，小楯板，翅鞘などは暗褐色を呈し，体毛はより淡色でより毛深い．

雄交尾器の中央突起の末端部は多少とも棍棒状 (Pl. 2, G)，側突起の末端部はオオハナコメツキのように外側は彎曲して細まるが，より巾せまく，点刻もよりまばらに印する (Pl. 2, H). 触角は細長く，第2節は棍棒状，第3節から鋸歯状を呈し，第4節は第3節の約 1.1 倍の長さで，第3節はより細長い．雌内部生殖器の bursa copulatrix の袋の内部にある1対の多くの突起を有する角質片の外形は図示 (Pl. 2, D, E) したようで，オオハナコメツキより突起の数も少なくより単純である．また，象の鼻形をした角質片は図示 (Pl. 2, F) したようで，基部と鼻の角度は鈍角である．また，前胸腹板突起の外側は末端部近くでより顕著に外方へ彎曲する．前胸背板上の点刻はより密で粗雑に印する (Pl. 2, B).

なお，トカラ諸島からの記録がなく，標本も検することができなかったので，ここに分布する個体の種名は今後の研究に待たねばならない．また，沖縄本島以南とより以北に分布するものとの亜種関係についても詳しい調査ができなかった．ここに図示したのは，比較的多くの個体を検することができた奄美大島産のものである．和名はオキナワオオハナコメツキとしたいと思う．

3. 属名について

オオハナコメツキの仲間は，本科の中では最も分類の複雑なグループで，しかも東南アジ

ア地域に多くの種を分化させているため，日本やその周辺の種をみている範囲では，その全体像は容易につかめない．しかし，本種の属名について若干気づいた点をここに紹介する．

本種は爪の内側の基部に段刻を有することから，古くは *Platynychus* 属（タイプ種は *Platynychus indicus* MOTSCHULSKY, 1858 という北印度地方産）が用いられていたが，本属は *Dicronychus* 属（タイプ種は *Elater obesus* BRULLÉ, 1832＝*Elater cinereus* HBST., 1784 というヨーロッパ産）と同じという理由で，その後はもっぱら *Dicronychus* 属が日本の種に用いられてきた．そして，*Platynychus* 属は理由がはっきりしないまま *Dicronychus* 属の亜属として用いられている．

Dicronychus 属のタイプ種に指定されているヨーロッパ産の *Dicronychus cinereus* (HBST., 1784) は，爪の基部に段刻があることで日本の種とは共通であるが，雄交尾器や雌内部生殖器の bursa copulatrix 内にある角質片の形，前肢基節腔の後方が若干開いているなどの多くの相違点がみられるので，日本の種はこれとは別属のものであると思われる．

一方，*Platynychus* 属についてはこの属のタイプ種 (*Platynychus indicus* MOTSCHULSKY, 1858) が，爪の内側に段刻がある以外にどのような種であるのかも原記載からは見当がつかない．しかし，筆者はネパール産の *Dicronychus fulvivellus* (CANDÈZE, 1860) など，2・3の種を検したが，これらはいずれも日本のオオハナコメツキに近いものであった．

また，DOLIN (1975) は幼虫の形態から *Paradicronychus* 属（タイプ種は *Cardiophorus inflatus* CANDÈZE, 1860 というシベリア地方産）を新設し，日本のオオハナコメツキ (*nothus*) もこの中に含めた．これは，その論文の内容から推察すると，大平 (1962) の幼虫の研究でオオハナコメツキ (*nothus*) を図示したが，これを *Dicronychus* 属の種として扱ったため，真の *Dicronychus* 属の幼虫（例えばタイプ種 *cinereus*）には第9腹節の両側に角質化した板状物を有さないなどの相違があるため，*Cardiophorus inflatus* CANDÈZE, 1878をタイプにして *Paradicronychus* 属を新設したものである．しかし，この処置は命名法上では問題はないとしても，上記の DOLIN (1975) の判断は誤っており，*Paradicronychus* 属は *Platynychus* 属のシノニムと考えられるので，日本のオオハナコメツキなどについての属名は *Platynychus* MOTSCHULSKY, 1858（タイプ種は *Platynychus indicus* MOTSCHULSKY, 1858）を用いるのが現在では最も適した処置であると判断するものである．

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Summary

Up to the present study, the author examined some important structures on the species of *Platynychus nothus* (CANDÈZE, 1865) from Honshu (Aichi-ken), Kôzu-shima Is. of Izu Iss., Yaku-shima Is. of Kyushu, and the Ryukyus (Amami-Ôshima Is.), which is taken by SEM images. And the author found the following details.

Dicronychus (*Platynychus*) *nothus loochooensis* KISHII, 1979=*Platynychus loochooensis* (KISHII, 1979). **comb. & status nov.**

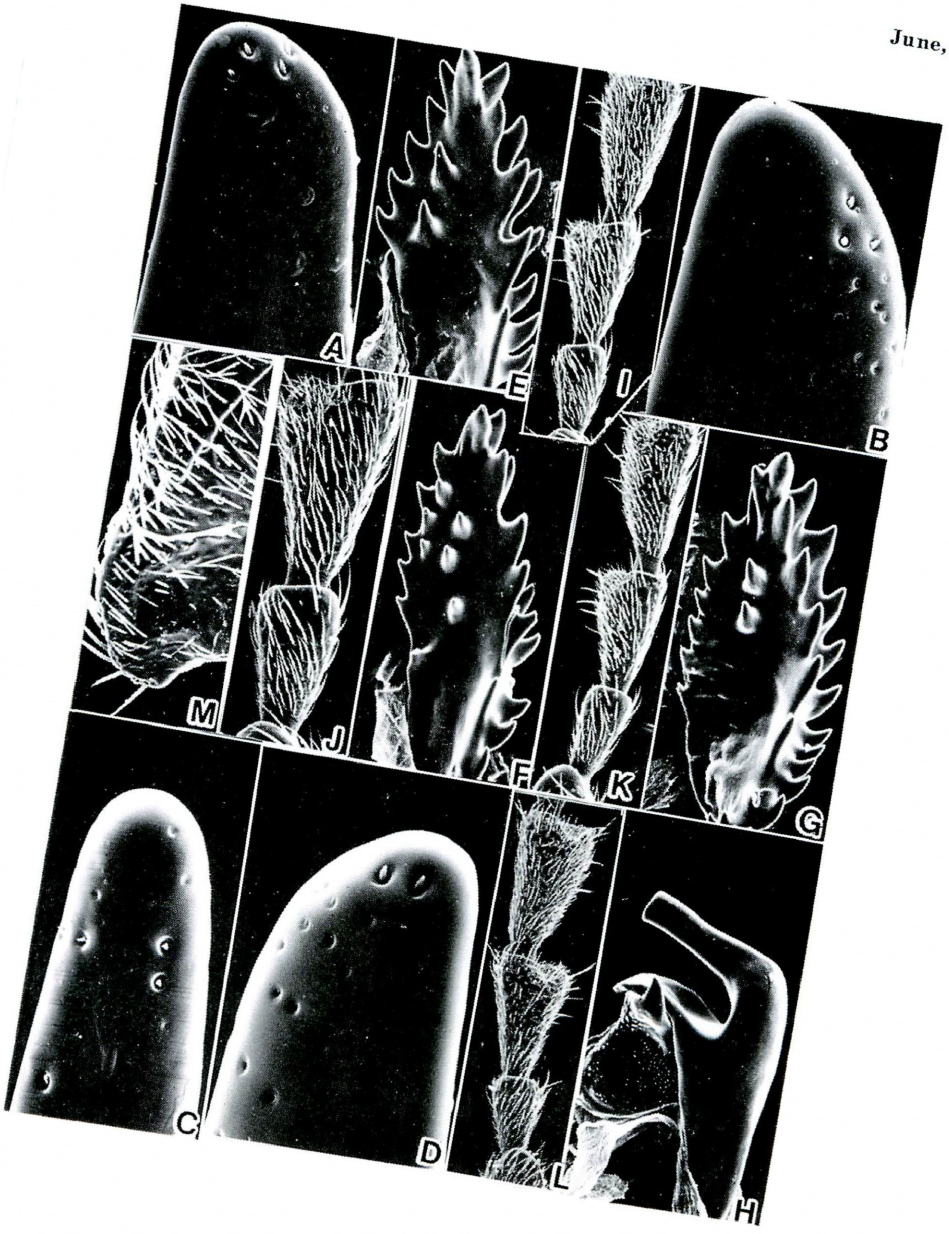
Dicronychus (*Platynychus*) *nothus amamianus* KISHII, 1979=*Platynychus loochooensis amamianus* (KISHII, 1979). **comb. & status nov.**

The author considered that the genus *Paradicronychus* DOLIN, 1975 (Type-species: *Cardiophorus inflatus* CANDÈZE, 1860) should be synonymous with the genus *Platynychus* MOTSCHULSKY, 1858 (Type-species: *Platynychus indicus* MOTSCHULSKY, 1858) and the genus *Platynychus* MOTSCHULSKY, 1858 is separated from the genus *Dicronychus* BRULLÉ, 1832 (Type-species: *Elater obesus* BRULLÉ, 1832).

Explanation of Plates 1–2.

Pl. 1. *Platynychus nothus* (CANDÈZE, 1865), Aichi-ken, Honshu (C, D, F, H, J, L, M); Yaku-shima Is. (B, G, K); Kôzu-shima Is., Izu Iss. (A, E, I).
A–D, apical portion of aedeagus, dorsal view: A, lateral lobe; B, ditto; C, median lobe; D, lateral lobe; E–H, sclerotized plates in bursa copulatrix; I–L, basal segments of male antennae: I (2–4), J (2, 3), K (2–4), L (2–4); M, propleural hind angle, ventral view.

Pl. 2. *Platynychus loochooensis amamianus* (KISHII, 1979), Amami-Ôshima Is.
A, prosternal process, lateral aspect; B, some punctures on pronotal disk; C, propleural hind angle, ventral view; D–F, sclerotized plates in bursa copulatrix; G, H, apical portion of aedeagus, dorsal view: G, median lobe; H, lateral lobe; I–K, antennal segments, male: I (2, 3), J (2–4), K (10, 11).



(H. Ôhira photo.)

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