

Body length: 1.06–1.31 mm., L/W: 1.30–1.35.....*Stethorus chengi* sp. nov.

- 4 (3) Femora usually distinctly darkened except their tips. Femoral line of first abdominal sternum not reaching to the middle of the sternal length. Siphon of male genitalia extremely long and very strongly curved; tegmen extremely slender. Apical margin of last abdominal segment narrowly and deeply emarginated at middle in male. Body length: 1.27–1.65 mm., L/W: 1.25–1.34.....*Stethorus loi* sp. nov.

1. *Stethorus loi* sp. nov. (Fig. 1–A~H)

Body short oval, 1.25–1.34 times as long as wide, with sides rather strongly arcuate in dorsal aspect. Dorsum strongly convex and relatively densely pubescent. Vertex and posterior half of frons black, and anterior half of frons and clypeus reddish brown to yellowish brown in male; the yellowish area of frons usually narrow in female; the border between black and yellow areas of frons not definite. Antennae and mouth parts pale yellow to yellowish brown. Pronotum, scutellum, elytra and underside of body entirely black; rarely apical margin of abdomen narrowly and indistinctly fuscate. Front femora yellowish brown to dark brown except the paler tips. Tibiae and tarsi pale yellow to yellowish brown. Middle and hind femora, except the pale tips, always distinctly darker than tibiae, usually blackish brown to dark brown, rarely reddish brown.

Head about half as wide as the pronotum. Interocular distance three-sevenths as wide as the head width. Innerocular margins of frons weakly arcuate and nearly parallel at anterior part. Frons nearly flat, finely and relatively densely punctured and rather densely pubescent. Anterior margin of clypeus straight, scarcely excavated. Antennae 1.2 times as long as the interocular distance and eleven-segmented; the first segment, the largest; the second slightly shorter than the first; the third much narrower than and slightly shorter than the second; the fourth and fifth cylindrical and each distinctly shorter than the third; each of sixth to eighth broadening apically and broader than the preceding respectively; the ninth the widest and distinctly longer than the preceding; the tenth distinctly narrower and shorter than the ninth; the terminal segment small burrow-shaped and slightly longer than wide. Pronotum 0.69–0.74 time as wide as the body width; lateral sides of pronotum marginated, nearly straight at basal half and moderately arcuate at apical half; anterior corners of pronotum rectangulate with a rounded tip, and posterior ones obtusely angulated; disk of pronotum relatively strongly and moderately densely punctured, the punctation becoming distinctly denser towards laterally than the median area; each puncture on pronotum clear and navel-shaped. Scutellum small and regular triangular. Elytra very densely and strongly punctured; each puncture rather simple and large but relatively shallow. Elytral pubescence very dense and fine. Metasternum strongly and relatively densely punctured, each puncture on metasternum very clear and deep. Femoral line of first abdominal sternum complete and relatively weakly curved, not reaching posteriorly to a half of the distance between the hind coxal cavity and the posterior margin of the sternum. Area surrounded by the line with distinct punctures except a smooth area near the line. Posterior margin of the apical abdominal segment deeply, narrowly and roundly emarginate at the middle in male, and gently rounded in female.

Male genitalia: Siphon very long, extremely slender and strongly curved; basal two-thirds of siphon nearly forming an entire ellipse, and apical one-third of siphon slightly arcuate dorsally and very thin and parallel-sided in lateral aspect. Apical tip of siphon simple and rounded. Siphonal capsule without a distinct outer process and with a long and bilobed inner process which is longer than three times the own width. Tegmen extremely slender and extremely long, about six-sevenths as much as the length of abdomen, when the median strut is removed. Median piece of tegmen weakly warped dorsally at apex in lateral aspect, and parallel-sided and then weakly narrowing

apically near the truncate apex in ventral aspect. Lateral lobes of tegmen extremely thin, thread-like and about two-thirds the length of the median piece, bearing a few short setae on each. Basal piece of tegmen very short and rather simple.

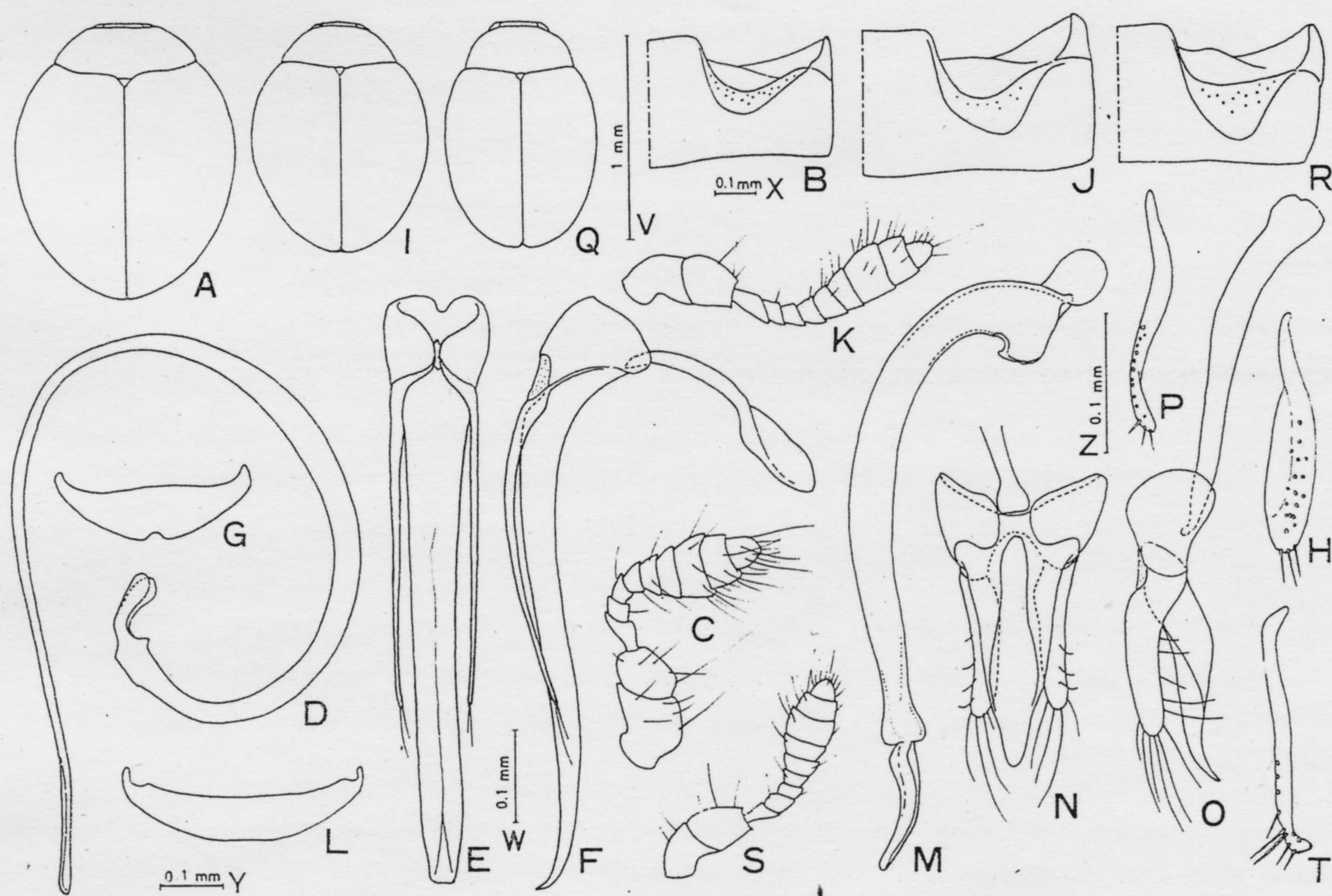


Fig. 1. *Stethorus loi* sp. nov. (A-H), *S. chengi* sp. nov. (I-P) and *S. hirashimai* sp. nov. (Q-T).

A, I, Q, Dorsal outlines. B, J, R, First abdominal sterna. C, K, S, Antennae. D, M, Siphoes, lateral aspect. E, O, Tegmens, lateral aspect. F, N, Tegmen, ventral aspect. G, L, Apical abdominal sterna of male. H, P, T, Hemisternites. Scales V, W, X, Y and Z are applied to A, I, Q; to D, E, F; to B, G; to J, R, L; and to the rest, respectively.

Female genitalia: Hemisternites fairly elongate but not extremely narrow, inner tip of hemisternite rounded, provided with three setae. Receptaculum seminis not distinctly sclerotized.

Body length: 1.27–1.65 mm., width: 0.95–1.28 mm., depth: 0.66–0.86 mm., ratio of the body length to the width: 1.25–1.34.

*Distribution*: Formosa.

Holotype (♂): Taipei, Formosa, 3. x. 1965, P. K. C. Lo leg.

Paratypes: 1 ♂ 1 ♀, the same data as the holotype; 4 ♂♂ 3 ♀♀, Chiai, C. H. Cheng leg.; 1 ♂ 3 ♀♀, Taipei, 26. viii. 1966, H. Kamiya leg.; 1 ♀, Wulai, Taipei Hsien, 6. vii. 1966, H. Kamiya leg.; 7 ♀♀, Puli, Nantou Hsien, 14. vii. 1966, H. Kamiya leg.; 6 ♂♂ 4 ♀♀, same locality, 8. vii. 1966, H. Kamiya leg.; 1 ♀, Jihyuantan, Nantou Hsien, 28. vi. 1966, T. Shirôzu leg.; 4 ♂♂ 9 ♀♀, Kuantzuling, Tainan Hsien, 6–7. iv. 1965, T. Shirôzu, Y. Hirashima and S. Uéno leg.; 1 ♀, Ilan, 19. viii. 1966, H. Kamiya leg.

*Remarks*. This species closely resembles to *Stethorus aptus* Kapur, 1948 from East China in its coloration and punctation, but it is easily distinguishable from the latter by the short femoral lines which do not reach to a half the length between the coxal cavity and the posterior margin of the sternum. The species *loi* is also related to an Indian species, *S. gilvifrons* (Mulsant, 1850) which has, however, the more strongly curved siphon, the more broadly emarginated apical abdominal segment in the male, and the triangular hemisternites in the female.

## 2. *Stethorus chengi* sp. nov. (Fig. 1-I~P)

Body short oval, with sides rather strongly arcuate; dorsum strongly convex above and pubescent. Head black with yellow clypeus and narrow anterior part of frons in male; clypeus yellowish brown and frons usually almost entirely black in female; antennae and mouth parts pale yellow to pale yellowish brown. Pronotum, scutellum and elytra entirely black. Underside of body also entirely black, sometimes apical short part of abdomen indistinctly fuscate. Legs except coxae entirely pale yellow to pale yellowish brown; femora sometimes darker than tibiae but never blackish.

Head about three-fifths as wide as the pronotal width. Interocular distance three-eighths as wide as head width. Innerocular margins of frons weakly arcuate, rather weakly divergent posteriorly except parallel anterior half. Frons sparsely and extremely finely punctate. Anterior margin of clypeus straight and indistinctly marginated. Antennae about one and a half times as long as the interocular distance and eleven-segmented; the second segment nearly as long as the first; the third much narrower than and slightly shorter than the second; the fourth as broad as the third and shorter than half the length of the latter; the fifth nearly as large as the fourth; the width of segments from the fifth to the eighth gradually increased towards the apex, but their lengths are nearly same as each other; the tenth the largest, distinctly broader than the eighth and twice as the latter in length; the tenth distinctly narrower and much shorter than the ninth; the terminal segment very small. Pronotum 0.72–0.73 times the width of the body; lateral sides of pronotum nearly straight, very slightly arcuate except a weakly arcuate short anterior part, and narrowly marginated; anterior corners of pronotum acute with a rounded tip; basal corners of pronotum obtusely angulate. Disk of pronotum very finely and sparsely punctured, the punctation denser and stronger at lateral portions. Scutellum small and regular triangle. Punctuation of elytra much coarser and stronger than that of pronotum. Elytral pubescence relatively long and sparse. Punctuation of metasternum very strong and fairly dense at middle part and somewhat weaker at lateral portions. Femoral line of first abdominal sternum complete, distinctly beyond a half the length of the distance between the coxal cavity and the posterior margin of the sternum. Area surrounded by the femoral line with several strong punctures. Apical margin of last abdominal sternum truncate or very slightly emarginated at middle in male, and gently rounded in female.

Male genitalia: Siphon short, nearly cylindrical in general and stout, and very weakly curved at basal half and scarcely arcuate at apical half. Siphonal capsule distinct, consisting of a strongly flattened outer process and a very short indistinct inner process; the outer process ovate in lateral aspect. Apical part of siphon gradually narrowing apically, then distinctly swollen and truncate at its tip, provided with a rather long appendage which is narrowing towards a rounded tip. Tegmen also stout; median piece of tegmen very broad at its base, strongly and nearly straightly convergent towards its rounded apex in ventral aspect; apical part of the median piece curved ventrally in lateral aspect. Lateral lobes of tegmen about three-fourths the length of the median piece, relatively stout, parallel-sided with a rounded tip in lateral aspect and bearing rather long and sparse setae. Basal piece of tegmen short and broad in ventral aspect.

Female genitalia: Hemisternites linear and bisinuate bearing three short setae near its apex. Receptaculum seminis not sclerotized.

Body length: 1.06–1.31 mm., width: 0.80–0.98 mm., depth: 0.60–0.70 mm., ratio of the body length to the width: 1.30–1.35.

*Distribution:* Formosa.

Holotype (♂): Chiai, Formosa, C. H. Cheng leg.

Paratypes: 4 ♂♂ 3 ♀♀, Chiai, C. H. Cheng leg.; 3 ♂♂ 1 ♀, Chiai, 22. iv. 1966, C. H. Cheng leg.; 1 ♂, Puli, Nantou Hsien, 8. vii. 1966, H. Kamiya leg.

*Remarks.* This new species is closely related to *Stethorus pauperculus* Weise, 1895 known from India and Arabia in the coloration, the structures of both male and female genitalia, but it is distinguishable from the latter in detail structures of the siphonal capsule and the appendage of siphon, the punctuation of metasternum, etc. From the other species of Formosa, the present species is immediately separable by the characters which are shown in the key.

### 3. *Stethorus hirashimai* sp. nov. (Fig. 1-Q~T)

Female. Body elongate oval, approximately 1.45 times as long as wide, rather weakly convex above, not strongly rounded at sides in dorsal aspect. Dorsum pubescent. Head entirely black without any yellowish part of clypeus; antennae and mouth parts pale yellowish brown. Both dorsal and ventral surfaces of body entirely black. Trochanters and femora brown to dark brown; tibiae and tarsi pale yellowish brown. Dorsal pubescence silvery.

Head three-fifths as wide as the pronotal width; eyes rather large, interocular distance about two-fifths as wide as the head width; innerocular margins of frons nearly straight and parallel except the posterior part; frons nearly flat, and very finely and relatively sparsely punctate. Anterior margin of clypeus weakly excavated in entire length. Antennae about 1.4 times as long as the interocular distance, and eleven-segmented; the second segment slightly longer than and nearly as wide as the first; the third fairly thin, elongate and divergent apically; the fourth distinctly shorter than the third; the fifth smaller than the fourth in both width and length; the segments from sixth to eighth gradually increasing the width and nearly as long as each other; the ninth slightly wider than and distinctly longer than the preceding; the tenth narrower and shorter than the ninth but not much; and the terminal segment small and short conical. Pronotum 0.75–0.76 times as wide as the body width, lateral sides of pronotum rather weakly convergent anteriorly at dorsal aspect; each side marginated, and straight except a slightly arcuate very short anterior part. Anterior corners of pronotum acutely angulated and posterior ones obtusely angulated. Surface of pronotum very finely and sparsely punctate, each puncture on pronotum very fine and simple. Scutellum small and triangular. Elytral base not distinctly broader than the pronotal base; basal corners of elytra rectangulate with a rounded tip. Surface of elytra very coarsely and moderately densely punctured; each puncture of elytra large but relatively shallow. Metasternum with sparse and very strong punctures. Femoral line of first abdominal sternum complete and strongly curved, reaching to three-fourths the length of the distance between the coxal cavity and the posterior margin of the sternum. Area surrounded by the femoral line sparsely punctate at basal part and widely impunctate near the line.

Female genitalia: Hemisternites extremely slender and linear, inner apex weakly bent and clavate, provided with five rather stout setae. Receptaculum seminis not distinctly sclerotized.

Male unknown.

Body length: 1.00–1.17 mm., width: 0.68–0.81 mm., depth: 0.46–0.55 mm., ratio of the body length to the width: 1.44–1.47.

*Distribution:* Formosa.

Holotype (♀): Neichiao, Tainan Hsien, 7. vii. 1965, Y. Hirashima leg.

Paratypes: 1 ♀, Puli, Nantou Hsien, 8. vii. 1966, H. Kamiya leg.; 2 ♀♀, Chiai, 22. vi. 1966, C. H. Chen leg.

*Remarks.* The present new species is closely allied to *S. yezoensis* Miyatake, 1966 from

Japan in its elongate body shape, but easily distinguishable from the latter in the dorsal punctation, the body size, the shape of the female hemisternites, etc. From the other Formosan species, this is obviously distinguished by the elongate body shape.

### TRIBE ASPIDIMERINI

The Aspidimerini are closely related to Scymnini and easily separable from all the other tribes of the Coccinellidae including the Scymnini, by the combination of the following characters. (1) Body small to medium-sized and dorsum densely pubescent. (2) Antennae extremely short, geniculate, and composed of eight or nine segments of which two basal strongly enlarged. (3) Eyes margined by the very narrow lateral extensions of clypeus and the forwardly produced genae. (4) Femora broadly expanded and flat. (5) Posterior margin of the first abdominal sternum strongly arcuately convex posteriorly.

In 1948, A. P. Kapur performed a monographic revision of the tribe, but he had unfortunately examined no specimen from Formosa. Up to the present, three species have been recorded from Formosa, namely *Cryptogonus orbiculus* Gyllenhal, *C. quadriguttatus* Weise and *C. postmedialis* Kapur, but the second may be not a true *quadriguttatus* but a distinct new species. *Scymnus horishanus* Ohta described from Formosa needs to be transfered to the genus *Cryptogonus*. Four further Formosan species belonging to the Aspidimerini are described as new to science in this paper. Therefore, eight species of the Aspidimerini occur in Formosa, and these are separable from each other by the next key.

#### Key to the genera and species of the tribe Aspidimerini of Formosa

- 1 (4) Prosternal carinae very broadly separated and divergent anteriorly. Body oblong oval, moderately convex above, and relatively large (3.2–4.5 mm. long in Formosan species).  
.....**Genus *Aspidimerus* Mulsant**
- 2 (3) Elytra with two pairs of yellow markings (Fig. 2-J). Body length: 3.2–4.0 mm. ....  
.....***Aspidimerus esakii* sp. nov.**
- 3 (4) Elytra with a pair of reddish markings, situated nearer to the base than to the apex of elytra (Fig. 2-K). Body length: 4.5 mm.....***Aspidimerus matsumurai* sp. nov.**
- 4 (1) Prosternal carinae parallel or very narrowly separated. Body hemispherical or short oval, strongly convex above, and relatively small (1.7–2.9 mm. in Formosan species).  
.....**Genus *Cryptogonus* Mulsant**
- 5 (8) Prosternal carinae reaching to the anterior margin of prosternum.
- 6 (7) Prosternal carinae narrowly separated; distance between both carinae much narrower than the width of prosternal process (Fig. 4-G). Elytra entirely black (Fig. 2-H). Body length: 2.0–2.4 mm.....***Cryptogonus angusticarinatus* sp. nov.**
- 7 (6) Prosternal carinae broadly separated; distance between both carinae scarcely narrower than the width of prosternal process (Fig. 4-A). Elytra with a pair of round yellowish (sometimes reddish) markings (Fig. 2-G). Body length: 1.7–2.4 mm. ....  
.....***Cryptogonus horishanus* (Ohta, 1929)**
- 8 (5) Prosternal carinae not reaching to the anterior margin of the prosternum, far distant from the latter (Fig. 3-G, M).
- 9 (12) Each elytron black with a longitudinal marking which is longer than two-thirds the elytral length, or two separate red markings; or ground colour of elytra reddish.
- 10 (11) Elytron with a round black spot in the reddish area of posterior part, isolated from any

## 2. *Cryptogonus postmedialis* Kapur. 1948 (Figs. 2-I; 3-N~S)

*Cryptogonus postmedialis* Kapur, 1948, Trans. R. ent. Soc. Lond. 99: 95-97 (India, Burma). *Cryptogonus postmedialis*: Bielawski, 1957, Acta Zool. Cracov. 2 (4): 95-96 (Formosa: Takao, Taichorinsho).

*Specimens examined*: 1 ♂, Fenchihu, Chiai Hsien, Formosa, 10. iv. 1965. S. Miyamoto leg.; 1 ♀, Chihpen, Taitung Hsien, 8. viii. 1966, H. Kamiya leg. (Body length: 1.9, 2.1 mm., Width: 1.5, 1.6 mm., depth: 1.0, 1.1 mm., respectively).

*Distribution*: Formosa, Burma, India.

*Remarks*. The present species was described from the mountaineous district of India and Burma and later recorded from Formosa by Bielawski (1957). In the general feature, this is very closely allied to the preceding species, *C. orbiculus* (Gyllenhal) but is separated from the latter in the following points.

(1) Dorsal outline of body form relatively more elongate. (2) Elytral spots situated at posterior half of elytral length and not extending anteriorly to as far as the middle of elytral length. (3) Punctuation of frons finer than in *orbiculus*. (4) Elytral punctuation slightly denser than in *orbiculus*. (5) Mentum relatively long, its lateral sides straightly convergent basally. (6) Posterior margin of the last abdominal segment gently rounded even in male. (7) Siphon in male genitalia short and weakly curved. (8) Siphonal capsule with a very short inner process. (9) Apex of siphon sharply pointed and without distinct lamellate processes at sides near the tip. (10) Median piece of tegmen broad and parallel-sided at basal two-thirds. (11) Receptaculum seminis narrow and rather strongly curved.

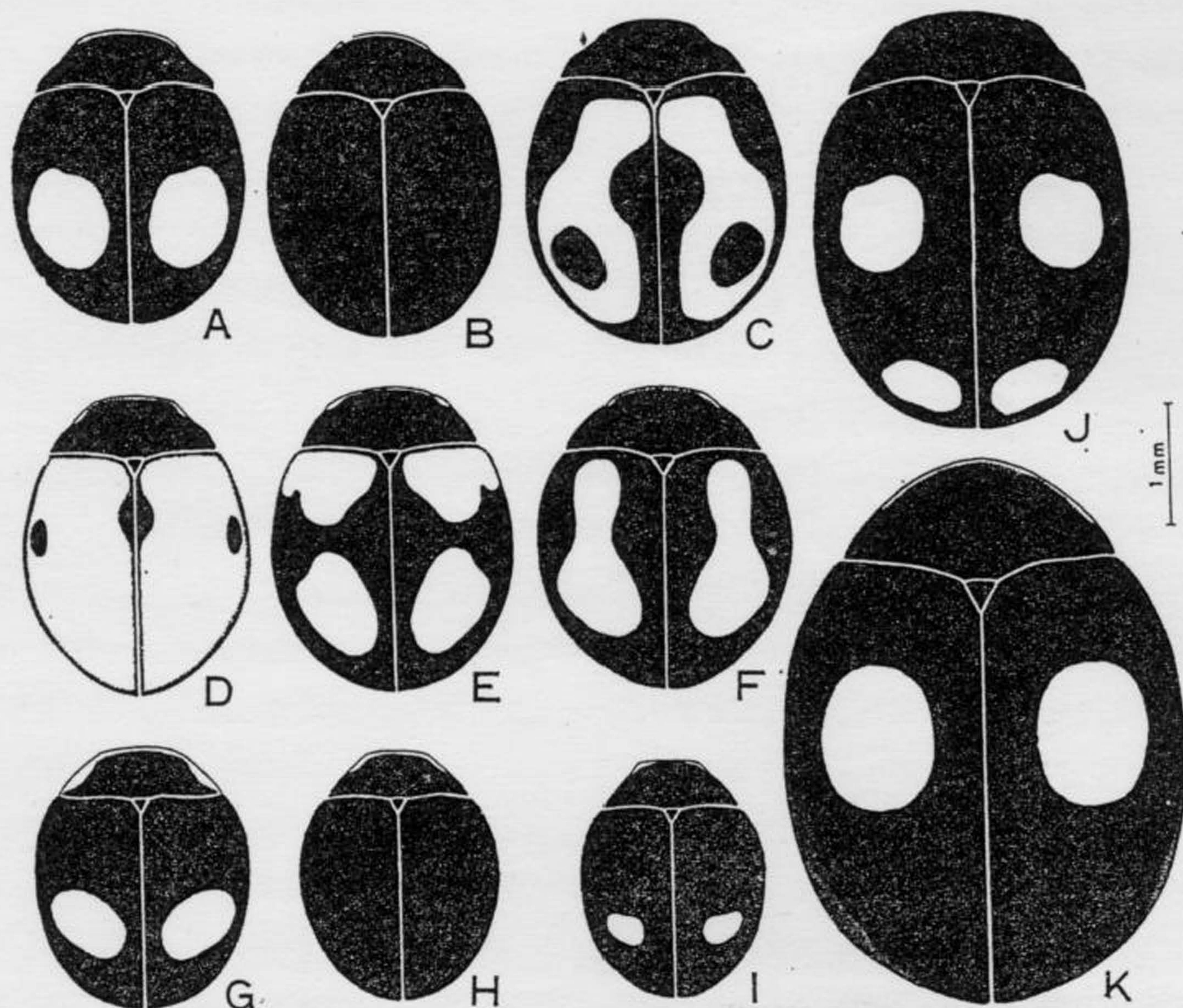


Fig. 2. Dorsal outlines of Formosan species of the tribe Aspidimerini.

A-B, *Cryptogonus orbiculus* Gyllenhal. C, *C. kurosawai* sp. nov. D-F, *C. ohtai* sp. nov. G, *C. horishanus* Ohta. H, *C. angusticarinatus* sp. nov. I, *C. postmedialis* Kapur. J, *Aspidimerus esakii* sp. nov. K, *A. matsumurai* sp. nov. 1 mm. scale is applied to all the figures.

## 3. *Cryptogonus ohtai* sp. nov. (Figs. 2-D~F; 3-A~G)

*Cryptogonus 4-guttatus*: Weise, 1923 (nec Weise, 1895), Arch. Naturg. 89 (A) 2: 185 (Formosa); Korschefsky, 1933, Trans. Nat. Hist. Soc. Formosa 23: 302 (Formosa: Musha, Shinchiku, Kôshun).

*Cryptogonus quadriguttatus*: Miwa, 1931 (nec Weise, 1895), Rep. Dep. Agric. Gov. Res. Inst. Taihoku 55: 87 (Formosa: Kankau).

*Cryptogonus quadriguttatus*: Mader, 1955, Ent. Arb. Mus. Frey 6: 857 (Formosa, etc.) (pars).

*Diomus futahoshii* ab. *tappanus* Ohta, 1929, Ins. Matsumurana 4: 10 (Formosa: Tappan, Shinsha) (nomen nudum).

Body short oval, strongly convex above. Head pale yellowish brown except black underside in male. Clypeus and major of mouth parts reddish brown to dark brown; mentum black; antennae yellowish brown. Rarely a pair of small black spots or a single black spots or a single black marking present on frons in male. Frons and vertex entirely black in female, but vertex rarely narrowly yellowish. Pronotum black with a very narrow anterior margin and small oblong markings of anterior corners yellowish brown in male. Yellowish anterior margin usually indistinct and yellowish markings on anterior corners of pronotum usually very small or absent in female. Scutellum black. Elytra vary in coloration. In the holotype (Fig. 2-E), elytra black, each with two orange brown markings arranged longitudinally; anterior one transverse subtriangular, relatively large, reaching near the basal margin of elytra in entire width but the basal margin narrowly black, and extending posteriorly; the posterior marking subquadrate, medium-sized, situated from two-fifths to four-fifths the elytral length, and its anterior border scarcely touching to the posterior border of the anterior one. Anterior and posterior markings of elytra frequently entirely connected with each other, forming a longitudinal marking on each elytron, and its anterior part becoming narrow and distinctly separated from the outer margin of elytra by a broad black area; in these case (Fig. 2-F) the longitudinal markings more or less constricted at middle in length. Sometimes, the reddish area of elytra widening in various degrees. In the palest specimen (Fig. 2-D), elytra pale yellowish brown with black sutural, basal and external margins, and postscutellar and lateral markings; each black margin extremely narrow; the postscutellar marking small and elongate oval; the lateral markings also small, elongate oval, and situated at anterior two-fifths of the elytral length and near the outer margin. Underside of thorax and abdomen almost entirely black, partly and indistinctly reddish; anterior corners of prothoracic hypomera usually narrowly yellowish. Elytral epipleura dark reddish brown. Trochanters and basal part of femora reddish brown to dark brown; apical part of femora usually indistinctly yellowish; tibiae and tarsi yellowish brown.

Head about two-thirds as wide as pronotum. Interocular distance slightly broader than half the head width. Frons slightly convex, very strongly and very closely punctate; innerocular margins of frons rather weakly arcuate and weakly convergent anteriorly, and parallel at an anterior short part. Clypeus much narrower than the interocular distance, finely and sparsely punctate. Anterior margin of clypeus broadly and moderately deeply excavated. Pronotum about three-fourths as wide as body, relatively finely and densely punctate at disk; punctation on pronotum becoming denser towards the lateral sides which are almost straight. Scutellum subpentagonal, distinctly longer than wide, and very finely punctate. Elytral disk finely and sparsely punctate, more sparsely than in *orbiculus*. Prosternal structure similar to that of *orbiculus*, but carinae relatively narrowly separated.

Male genitalia: Siphon long and strongly curved, but less strongly than in *orbiculus*. Siphonal capsule with distinct outer and inner processes and the outer one distinctly longer than the inner one; apex of siphon provided with a short thread-like process at its tip and a pair of small lamellate wings near the tip. Tegmen nearly as like as in *orbiculus*, but lateral lobes distinctly shorter than the median piece which is comparatively narrower.

Female genitalia: Receptaculum seminis similar to that of *orbiculus*. Hemisternites more

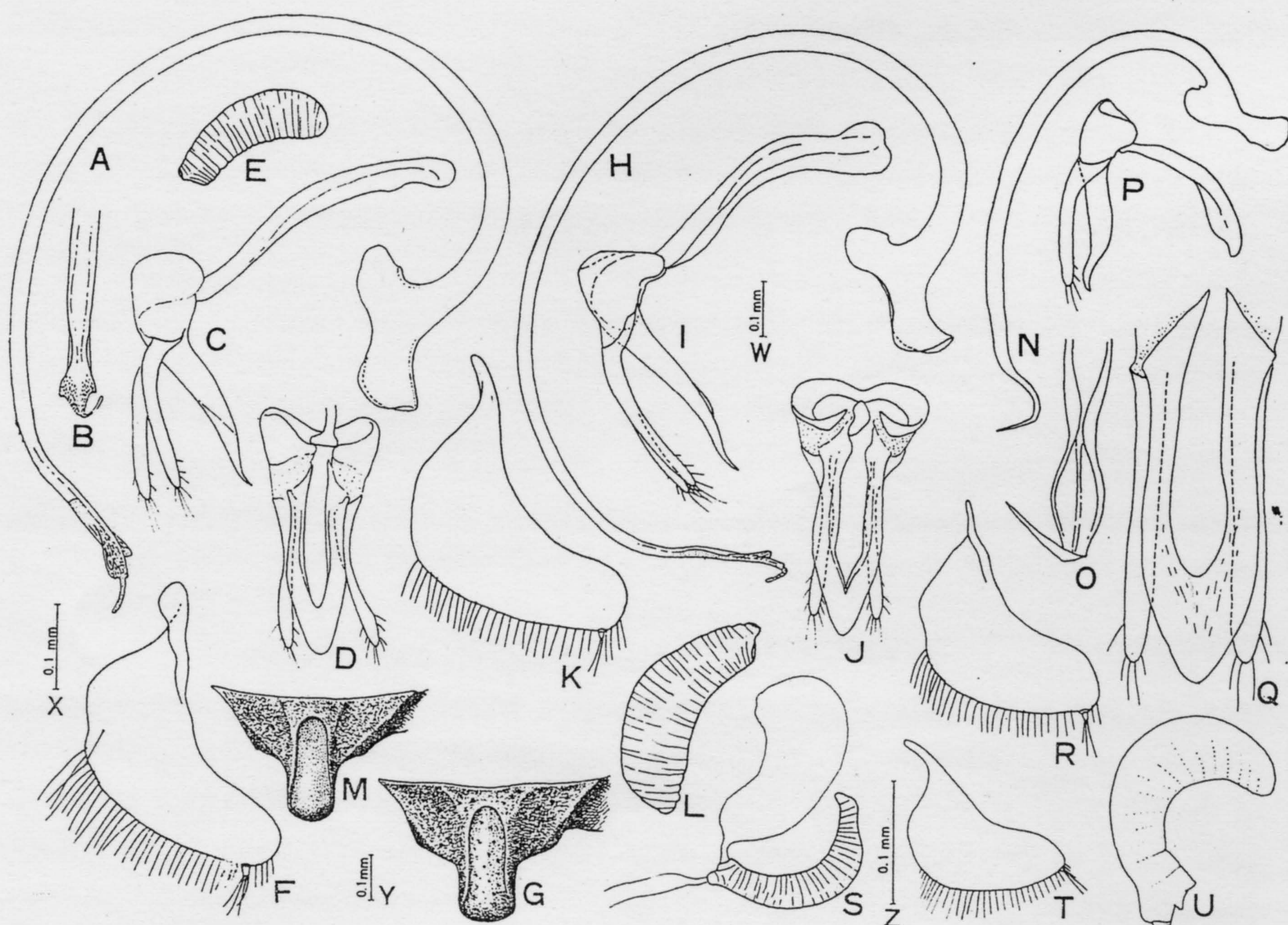


Fig. 3. *Cryptogonus ohtai* sp. nov. (A-G), *C. orbiculus* Gyllenhal (I-M), *C. post-medialis* Kapur (N-S) and *C. kurosawai* sp. nov. (T-U).

A, H, N, Siphoes, lateral aspect. B, O, Apical structures of siphoes, dorsal aspect. C, I, P, Tegmens, lateral aspect. D, J, Tegmens, ventral aspect. Q, Median piece and lateral lobes of tegmen, ventral aspect. E, L, S, U, Receptacula seminis. F, K, R, T, Hemisternites of female. G, M, Median parts of prosterna, ventral aspect. Scales W, X, Y and Z are applied to A-D, H-J, N, P, T; to E, F, K, R; to G, M; and to L, O, Q, S, U, respectively.

transverse than in *orbiculus* and inner apex strongly and roundly convex as illustrated.

Body length: 2.3-2.8 mm., width: 1.8-2.2 mm., depth: 1.2-1.5 mm.

*Distribution*: Formosa.

*Holotype* (♂): Kuantsuling, Tainan Hsien, Formosa, 7. iv. 1965, Y. Hirashima leg.

*Paratypes*: 3 ♂♂ 4 ♀♀, Kuantsuling, Tainan Hsien, 7. iv. 1965, T. Shirôzu, S. Miyamoto, Y. Hirashima & T. Saigusa leg.; 1 ♀, ditto, 19. vii. 1966, H. Kamiya leg.; 1 ♀, Yangmingshan, Taipei Hsien, 3. vii. 1966, H. Kamiya leg.; 2 ♀♀, ditto, 24. viii. 1966, H. Kamiya leg.; 1 ♀ 1 ♂, ditto, 28. iii. 1965, S. Miyamoto & Y. Hirashima leg.; 2 ♂♂ 3 ♀♀, ditto, 24-26. vi. 1965, T. Nakane & S. Kimoto leg.; 1 ♀, ditto, 25. v. 1965, Y. Miyatake leg.; 1 ♂ 2 ♀♀, Hsintien Chen, Taipei Hsien, 20. vi. 1965, S. Kimoto leg.; 1 ♂ 2 ♀♀, Wulai, Taipei Hsien, 17. iv. 1965, S. Miyamoto & T. Saigusa leg.; 1 ♀, Nei-hu, Taipei Hsien, 31. iii. 1965, S. Miyamoto leg.; 3 ♂♂ 2 ♀♀, Sozan, near Taipei, 11. v. 1925, T. Kano leg.; 2 ♂♂ 2 ♀♀, Kuangyin, Taoyuan Hsien, 1-2. iv. 1967, B. S. Chang leg.; 1 ♂, ditto, 26. vii. 1966, B. S. Chang leg.; 1 ♀, ditto, 28. xi. 1966, B. S. Chang leg.; 1 ♂ 1 ♀, Puli, Nantou Hsien, 8-11. vii. 1966, H. Kamiya leg.; 1 ♂, ditto, 19. v. 1927, T. Kano leg.; 2 ♀♀, Penpuchi, Nantou Hsien, 9-13. vii. 1966, H. Kamiya leg.; 1 ♀, Nanshanchi, Nantou Hsien, 6. vi. 1965, T. Shirôzu leg.; 1 ♀, ditto, 20. vi. 1965, T. Shirôzu leg.; 1 ♀, ditto, 30. vi. 1965, S. Kimoto leg.; 1 ♂, ditto, 12. vii. 1966, H. Kamiya leg.; 1 ♂, Shuitao, Nantou Hsien, 15. iv. 1965, S. Uéno leg.; 2 ♂♂, Chuchi, Chiai Hsien, 20. vii. 1966, H. Kamiya leg.; 3 ♂♂, Taitung, 26. iv. 1965, T. Shirôzu leg.; 1 ♂,

Ilan, 19. viii. 1966, H, Kamiya leg.

*Remarks.* The above-mentioned materials from Formosa vary in their elytral colorations but they are quite recognizable as a single species, which is different from *Cryptogonus quadriguttatus* Weise, 1895 (not 1923), from the viewpoint of the structural details including both male and female genitalia. The elytral colour pattern of this species is indeed very similar to that of *quadriguttatus*, but the *oh tai* is easily distinguishable from the latter by the distinctly sparser punctation of elytra than of pronotum, the very slender siphon in the male genitalia, the more transverse hemisternites in the female genitalia, etc.

*Cryptogonus quadriguttatus* (Weise, 1895) was originally described from Sikkim, and later Weise (1923) recorded it from Formosa. Miwa (1931) and Korschefsky (1933) also recorded it from Kankau, and Musha, Shinchiku and Kôshun in Formosa respectively. But, these Formosan examples treated by them should be perhaps not true *quadriguttatus* but the species described here.

On the other hand, Ohta (1929) proposed a name *tappanus* as an aberrant form of the species *Diomus futahosii* Ohta which was fallen as a junior synonym of *Cryptogonus orbiculus* (Gyllenhal) by Miyatake (1957). Examining the type series of *tappanus* preserved in the collection of the Entomological Institute, Hokkaido University, I have known that *tappanus* is undoubtedly quite same as the species described here. But the name *tappanus* is obviously infrasubspecific and not available by the Article 45 (d) (iii) of the International Code of Zoological Nomenclature (1961), because Ohta used a category subspecies in the same paper. I wish to propose a new name *oh tai* which is dedicated to Mr. Y. Ohta for this species, instead of his *tappanus*.

#### 4. *Cryptogonus kurosawai* sp. nov. (Figs. 2-C; 3-T, U)

Female. Body short oval, three-fourths as wide as long, strongly convex above and pubescent. Head and mouth parts nearly entirely black; anterior margin of clypeus narrowly brownish; and antennae dark brown. Pronotum black with brownish anterior corners which are very narrow and not beyond the middle of pronotal length; sometimes, anterior margin of pronotum very narrowly brownish. Scutellum black. Elytra orange brown with black markings: rather broad external margins, narrow basal margin, sutural margin, central spot and postmedian spots. The central spot round, relatively large and situated distinctly nearer the base than the apex of elytra; the sutural black very narrow before the central spot and broad behind that spot; the marginal black very broad and much broadly expanded at humeral area; in a specimen, the humeral black spots of elytra present, separated from the marginal black; the postmedian spot oval, medium-sized and not connected with any other black areas. Underside entirely black. Femora black or piceous, each with an indistinctly reddish brown tip. Tibiae and tarsi dark yellowish brown.

Head three-fifths as long as pronotum. Interocular distance half the head width. Surface of frons slightly convex and very strongly and extremely densely punctate; innerocular margins of frons slightly arcuate and weakly or slightly convergent anteriorly. Clypeus relatively distinctly and very sparsely punctate, with an anterior narrow part smooth and impunctate; anterior margin of clypeus very weakly and arcuately excavate; lateral sides of clypeus distinctly rounded. Pronotum five-sevenths as wide as the maximum width of body; anterior corners of pronotum distinctly rectangulate and posterior corners of pronotum distinctly and obtusely angulate; lateral sides of pronotum almost entirely straight; anterior margin extremely narrowly margined at lateral parts; posterior margin very narrowly and distinctly margined, the margination of the posterior margin becoming distinctly broader in front of scutellum. Disk of pronotum strongly and considerably densely punctate, and very densely at lateral portions. Scutellum triangular,

distinctly longer than wide and finely punctate. Elytral disk finely and relatively sparsely punctate; humeral corners of elytra obtusely angulated with a rounded tip. Prosternal carinae nearly parallel or slightly divergent posteriorly, both carinae connected with each other at their anterior end by a semicircular transverse carina, of which anterior end distinctly far distant from the anterior margin of the prosternum, but this distance rather shorter than that of *orbiculus*. Anterior margin of mesosternum relatively deeply and arcuately emarginate in rather broad part. Metasternum coarsely and moderately densely punctate and irregularly rugose in the inner area, with an impunctate narrow longitudinal area in the median line; the outer areas of metasternum very strongly and very closely punctate, the punctures of these areas extremely large and elongate. Abdomen also very strongly and closely punctured, but less than the outer area of metasternum; middle part of first abdominal sternum sparsely punctured.

Female genitalia: Receptaculum seminis rather long and strongly curved, and sausage shaped; ranus very short but distinctly definite. Hemisternites subtriangular, inner apex relatively sharply pointed with a rounded tip, latero-posterior margin strongly convex at outer half.

Male unknown.

Body length: 2.6–2.9 mm., width: 2.0–2.2 mm., depth: 1.4–1.5 mm.

*Distribution*: Formosa.

Holotype (♀): Horisha (= Puli), Nantou Hsien, 14. viii. 1921, T. Esaki leg.

Paratypes: 1 ♀, Taiheizan (= Taipingshan), Ilan Hsien, 26. iii. 1933, K. Satô leg.; 1 ♀, Sungkang, Nantou Hsien, 29. vi. 1965, Y. Kurosawa leg.; 1 ♀, ditto, 16. vii. 1966, H. Kamiya leg.; 1 ♀, Fenchihu, Chiai Hsien, 7. vi. 1965, Y. Kurosawa leg.

*Remarks*. This species rather closely resembles to *Cryptogonus orbiculus* Gyllenhal in its general structure but it is at once separable from the latter by the characteristic dorsal coloration, the somewhat elongate body outline, etc.

##### 5. *Cryptogonus horishanus* (Ohta, 1929) comb. nov. (Figs. 2–G; 4–A~F)

*Scymnus horishanus* Ohta, 1929, Ins. Matsumurana 4: 12 (Formosa: Horisha).

*Pseudaspidimerus japonensis* Nakane et M. Araki, 1958, Sci. Rep. Saikyo Univ. (Nat. Sci. Liv. Sci.) 2 (5): 291–292, figs. (Japan: Yakushima). syn. nov.

*Cryptogonus orbiculus*: H. Kamiya, 1965, Spec. Bull. lep. Soc. Japan 1: 76 (pars).

Body short oval, about three-fourths as wide as long, dorsum strongly convex and pubescent. Frons entirely yellow or pale yellowish brown in both sexes. Anterior half of clypeus blackish brown. Pronotum black with an anterior margin and lateral portions yellow or yellowish brown in both sexes. Anterior yellowish margin relatively broad and distinct. Lateral yellowish portion very large and reaching to the basal margin of pronotum, inner border of the yellowish area distinctly arcuated. Scutellum black. Elytra black, each with a yellow or yellowish orange discal spot; the spot usually relatively large, transverse oval, situated at much nearer to the apex than to the base of elytron. Underside relatively varies in colour.

Frons finely and relatively sparsely punctate and weakly shagreened. Innerocular margin of frons weakly arcuate and slightly convergent anteriorly at anterior part. Lateral sides of clypeus weakly divergent apically; anterior corners rounded; anterior margin of clypeus relatively weakly and arcuately excavated in entire width. Pronotum densely and strongly punctate; lateral sides of pronotum nearly straight and scarcely arcuate; anterior corners distinctly rectangulate and posterior ones also distinctly and obtusely angulate. Punctuation of elytra somewhat sparser and distinctly finer than that of pronotum. Prosternum with very distinct carinae which are parallel and rather broadly separated, scarcely narrower than the width of the prosternal process.

Anterior ends of the carinae connected with each other and forming a semicircular transverse carina which is touch to the anterior end of the prosternum. Area enclosed by the prosternal carinae lying at distinctly higher level than the lateral areas of prosternum, in ventral aspect.

Male genitalia: Siphon long and very slender; basal two-thirds of siphon rather strongly curved forming two-thirds of an imaginary circle, apical one-third of siphon feebly curved dorsally. Siphonal capsule with a considerably long inner process and a short but distinct outer process. Tegmen relatively slender; median piece of tegmen boat-shaped, slightly broadening apically at basal half, widest at two-fifths the length from the apex, then gently narrowing towards the feebly pointed tip. Lateral lobes of tegmen slightly shorter than the median piece and slightly arcuate. Median strut very long, about one and a half times as long as the rest of tegmen.

Female genitalia: Receptaculum seminis rather weakly arcuate, distinctly narrowing basally without a distinct ransus. Hemisternites strongly transverse; the inner apex rather feebly rounded and the posterior margin not strongly convex.

*Distribution*: Yakushima, Ryukyus, Formosa.

Body length: 1.7–2.4 mm., width: 1.4–1.8 mm., depth: 0.8–1.3 mm.

*Specimens examined*: 31 examples from the following localities (collected months and collectors are indicated).

Taipei Hsien: Taipei (iv, vi, vii, P. K. C. Lo, Y. Hirashima, H. Kamiya), Wulai (viii, H. Kamiya), Yangmingshan (vi, S. Kimoto). Taoyuan Hsien: Yangmei (vii, H. Kamiya). Ilan Hsien: Ilan (viii, H. Kamiya). Miaoli Hsien: Taho (iv, T. Shirôzu). Nantou Hsien: Nanshanchi (vii, H. Kamiya). Chiai Hsien: Chiuchi (vii, H. Kamiya). Haulien Hsien: Liyuchih (viii, H. Kamiya), Tienhsiang (viii, H. Kamiya). Pingtung Hsien: Szuchunghsi (iv, Y. Hirashima), Kenting (iv, Y. Hirashima), Hengchung (viii, H. Kamiya), Oluarpi (viii, H. Kamiya).

*Remarks*. In 1965, after examining the type specimen of *horishanus*, I have made *Scymnus horishanus* Ohta, 1929 a synonym of *Cryptogonus orbiculus* (Gyllenhal, 1808). But, as a result of the further re-examination of the type specimen of *horishanus* preserved in the Hokkaido University, I have concluded that *horishanus* is a distinct species which is different from *orbiculus*, and quite same with *Pseudaspidimerus japonensis* Nakane et M. Araki, 1958, a common species known from the Ryukyus. On the other hand, the species *japonensis* was originally described as a member of the genus *Pseudaspidimerus* Kapur, 1948, which had been established based on the peculiar structures of the prosternum, the male genitalia, etc. The prosternum of *japonensis* is, indeed, very similar to that of *Pseudaspidimerus circumflexa*, the type-species of the genus in question in its carinae and the altitude position of the median part, although the anterior end of the area enclosed by the prosternal carinae in the former species is not strongly transverse but distinctly rounded. But the most important distinction of the genus *Pseudaspidimerus* among the tribe is regarded for me to be the characteristic structure of the male genitalia, in which siphon is extremely thick and short without any distinct processes of the capsule and the median piece of tegmen is very broad in ventral aspect. In this point, the species *horishanus* (= *japonensis*) is much different from the genus *Pseudaspidimerus* and is entirely congenial to the genus *Cryptogonus*. Moreover many other characters of this species are rather agreeable to the *Cryptogonus* than to *Pseudaspidimerus* or other genera. Therefore, it may safely be assumed that the species *horishanus*, a senior synonym of *japonensis*, belongs to the genus *Cryptogonus*.

## 6. *Cryptogonus angusticarinatus* sp. nov. (Figs. 2-H; 4-G~K)

Body relatively small, short oval, four-fifths as wide as long, and dorsum strongly convex above and pubescent. Head yellowish brown with a reddish brown clypeus in male; entirely black

with a reddish brown clypeus in female. Mouth parts and antennae reddish brown to dark brown. Pronotum black with a small yellowish marking on each anterior corners, and a narrow yellowish brown anterior margin; the marking on anterior corner triangular and extending posteriorly along the lateral side but hardly reaching to the posterior corner. Pronotal pale markings in female dark reddish and usually smaller than in male. Scutellum black. Elytra entirely black with or without an extremely narrow apical margin reddish brown. Prosternum reddish brown to dark brown. Meso- and metasternum dark brownish black to deep black. Elytral epipleura usually dark brown. Abdomen uniformly reddish brown, sometimes basal segments somewhat darker than the proceeding segments. Legs reddish brown.

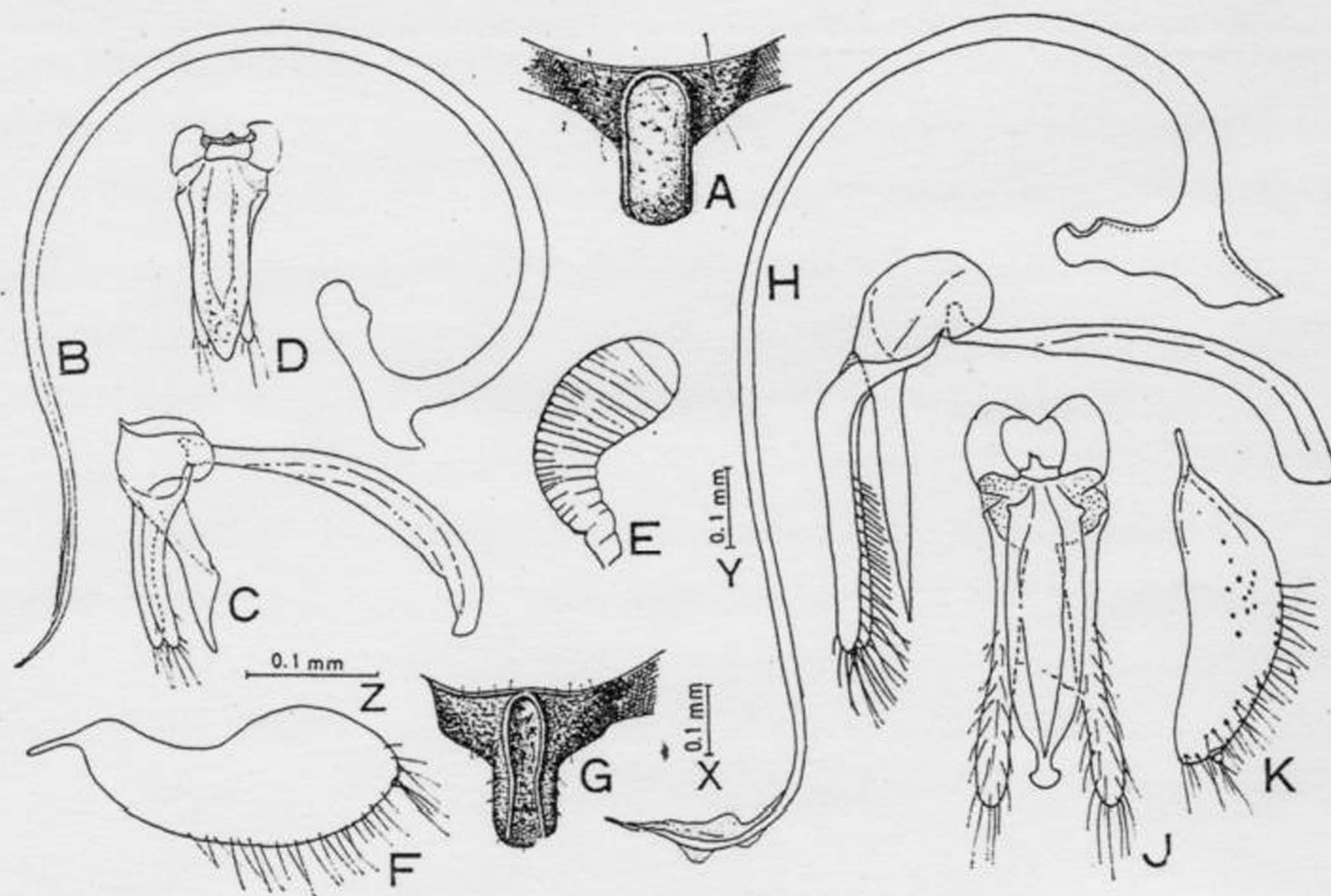


Fig. 4. *Cryptogonus horishanus* Ohta (A-F) and *C. angusticarinatus* sp. nov. (G-K).

A, G, Median parts of prosterna, ventral aspect. B, H, Siphoes, lateral aspect. C, I, Tegmens, lateral aspect. D, J, Tegmens, ventral aspect. E, Receptaculum seminis. F, K, Hemisternites. Scales X, Y, and Z are applied to A, G; to B-D, H-J; and to E, F, K, respectively.

Head about two-thirds as wide as pronotum. Interocular distance half as wide as the head width. Innerocular margins of frons feebly arcuate and relatively weakly convergent anteriorly; surface of frons slightly convex and very strongly and densely punctate, each puncture of frons more or less elongate and deep. Clypeus relatively long, straightly and weakly broadening apically; surface of clypeus nearly impunctate; anterior margin of clypeus deeply and triangularly excavate in nearly entire width. Antennae nine-segmented; the basal segment transverse oval and the largest; the second nearly as long as and narrower than the basal, with a distinctly produced inner side. Seven terminal segments forming a club; the third very narrow, each of fourth to sixth very short and distinctly broader than the preceding one; the seventh nearly as wide as the preceding and slightly longer than wide and cylindrical; the eighth also cylindrical, slightly shorter and narrower than the seventh; the terminal segment very small. Mentum subtrapezoidal, anterior margin of mentum straight with a narrow and very deep emargination in the middle; lateral sides rather strongly and bisinately convergent basally in entire length. Apical segment of labial palpi very narrow and relatively long; preapical segment very large and clavate apically. Lateral sides of pronotum almost straight and scarcely arcuate; anterior corners obtusely angulated with a feeble angle; posterior corners also obtusely angulated and with a distinct angle. Surface of pronotum very densely and relatively strongly punctate. Posterior side of pronotum narrowly but distinctly margined. Scutellum triangular, slightly longer than wide, and finely

and densely punctate. Elytral disk relatively sparsely and finely punctate, the punctation of elytra distinctly finer and much sparser than that of pronotum. Anterior margin of prosternum weakly but distinctly convex anteriorly; surface of pronotum weakly convex and roughly sculptured, but median part not distinctly elevated. Prosternal carinae very distinct, reaching to the anterior margin of the prosternum and narrowly separated. The distance between both carinae much narrower than the width of prosternal process, narrowest at two-fifths the length from the posterior end, and roundly connected with each other at anterior end of the carinae. Anterior margin of mesosternum rather distinctly and roundly emarginate in the middle. Surface of mesosternum transversely rugose. Metasternum very finely and relatively sparsely punctate at middle part and very coarsely and closely punctate at lateral parts. Punctures on first abdominal sternum weak but large, clear, navel-shaped and very sparse in their distribution. Those on the proceeding segments also large, and navel-shaped but rather deep and dense. Posterior margin of apical abdominal segment slightly emarginate in the middle in male, and gently rounded in female.

Male genitalia: Siphon moderately long and very slender, rather weakly curved at basal half. Apex of siphon strongly narrowing apically and bending dorsally. Siphonal capsule with a long inner process and a short outer process. Tegmen long and slender; median piece, in ventral aspect, elongate and parallel-sided except a short apical part which is strongly convergent apically. Apex of median piece characteristic in its ventral aspect, very distinctly flabellate with a considerably narrow and parallel-sided stem. Lateral lobes of tegmen distinctly longer than the median piece, relatively stout, parallel-sided and straight in lateral aspect. Median strut about one and a half times as long as the median piece.

Female genitalia: Receptaculum seminis simple, relatively broad and weakly arcuate. Hemisternites very slender, the inner apex rather strongly pointed, the latero-posterior margin not strongly rounded.

Body length: 2.2-2.4 mm., width: 1.6-1.9 mm., depth: 1.1-1.4 mm.

*Distribution*: Formosa.

Holotype (♂): Wulai, Taipei Hsien, 17. iv. 1965, T. Saigusa leg.

Paratypes: 1 ♂, Wulai, Taipei Hsien, 22. viii. 1966, H. Kamiya leg.; 1 ♂ 2 ♀♀, ditto, 25. viii. 1966, H. Kamiya leg.; 1 ♂, Hsientien Chen, Taipei Hsien, 20. vi. 1965, S. Kimoto leg.; 1 ♂, Nanshanchi, Nantou Hsien, 21. v. 1965, T. Shirôzu leg.; 1 ♀, ditto, 12. vii. 1966, H. Kamiya leg.; 1 ♀, Chihsinliao, Tainan Hsien, 15. iv. 1965, T. Shirôzu leg.; 2 ♀♀, Chulu, Taitung Hsien, 9. viii. 1966, H. Kamiya leg.; 1 ♂, Kenting, Pingtung Hsien, 2. iv. 1965, Y. Hirashima leg.

*Remarks*. The prosternal structure of this species is quite dissimilar to almost all the species of the genus, except a single species, *Cryptogonus complexus* Kapur, 1948 known from India and Burma, in which, however, the dorsal coloration is not entirely black but more or less with reddish markings. A further distinct character of the present new species is seen in the median piece of tegmen, of which apex is distinctly enlarged laterally, strikingly contrasting with that in the remaining species of the genus including *complexus* Kapur.

#### GENUS *ASPIDIMERUS* MULSANT, 1850

*Aspidimerus* Mulsant, 1850, Spec. Trim. Sécuripalp.: 944; Kapur, 1948, Trans. R. ent. Soc. Lond. 99 (2): 81-82.

Type-species: *Aspidimerus spencii* Mulsant, 1850.

Up to the present, three species of this genus have been known from India and Burma, and all of them were redescribed in detail by Kapur (1948). Two new species of the genus

*Aspidimerus* are added from Formosa here.

7. *Aspidimerus esakii* sp. nov. (Figs. 2-5); Fig. 5)

Male. Body oblong oval, three-fourths as wide as long, relatively large, moderately convex and pubescent. Head yellowish brown with blackish brown posterior portion and reddish brown clypeus. Underside of head capsule, antennae and mouth parts reddish brown. Pronotum black with a yellowish or yellowish brown marking on each anterior corner; this marking elongate, oblong or subtriangular and reaching to one-fourth the length from the posterior corner. Scutellum black. Elytra black, each with two yellow or yellowish brown markings before and behind; the anterior marking large, round or oval and situated much nearer to base than to apex, and usually beyond the middle of the elytral length; the posterior marking usually much smaller than the anterior one, subquadrate, situated near the elytral apex but never reaching to apical margin. Prosternum, mesosternum, metepisternum and elytral epileura reddish brown to dark brown, sometimes blackish brown. Metasternum blackish brown to black, rarely reddish brown. Abdomen entirely reddish brown with blackish basal parts or entirely blackish brown. Legs always reddish brown. Dorsal pubescence white or silvery at elytra and scutellum; and golden at pronotum, except at a small area in front of scutellum where the pubescence is white.

Head about two-thirds as wide as pronotum. Interocular distance half as much as the head width. Innerocular margins of frons nearly straight and rather strongly convergent anteriorly except a short posterior part. Frons nearly flat, moderately strongly and very densely punctate. Clypeus finely punctate at basal half and almost entirely smooth and impunctate near the anterior margin which is weakly excavate; lateral sides of clypeus distinctly emarginate by an antennal insertion and roundly expanded laterally in front of it. Antennae eight-segmented, the basal segment very large, the second also very large but distinctly less than the basal and roundly produced inwards, the rest segments forming a rather elongate club, each of third to fifth segments slightly longer than half the own width, the sixth distinctly longer than wide, and sometimes indistinctly divided into two segments. Cardo of maxilla distinctly wider than long and well-sclerotized, a part of stipes also well-sclerotized and the sclerotized part distinctly transverse; terminal segment of maxillary palpi about twice as wide as long with weakly rounded lateral sides. Mandible normal as like as other species of *Aspidimerini*. Anterior margin of mentum flat, never emarginate in the middle; lateral sides of mentum parallel at anterior half and suddenly and strongly convergent posteriorly at basal half; anterior corners of mentum rather distinctly angulate. Labial palpi small, about half as long as mentum; terminal segment minute and preapical segment clavate and large. Pronotum relatively finely and extremely densely punctured. Lateral sides of pronotum straight, anterior corners of pronotum distinct and rectangulate; posterior corners distinctly and obtusely angulate. Scutellum triangular, slightly longer than wide; surface of scutellum flat and more densely punctate than pronotum. Punctuation of elytra distinctly finer and somewhat sparser than of pronotum. Prosternum rather distinctly convex. Prosternal carinae reaching to the anterior margin of the prosternum and relatively broadly separated each another, arcuately convergent posteriorly generally, rather strongly convergent anteriorly at an anterior short part and both carinae roundly connected with each other at anterior end by a transverse ridge which is not distinct. The area surrounded by the carinae elongate oval in shape and the surface feebly but distinctly convex longitudinally, roughly punctate and bearing long hairs rather densely. Metasternum strongly and rather sparsely punctate at the middle part and very strongly and very densely so at outer area. Hind tibia distinctly angulate outwards at basal one-third of the length. Tarsi truly three-segmented. Claws bifid at the apex.

but the inner lobe distinctly shorter than the outer one.

Male genitalia: Siphon relatively long, slender and very strongly curved forming an entire circle; apex of siphon as shown in the figure, bearing numerous fine setae on the membranous part. Siphonal capsule with a very long inner process and a short and indistinct outer process. Tegmen stout; median piece of tegmen flat, and rather broad, twice as long as wide, parallel-sided at basal three-fifths then suddenly moderately strongly and nearly straightly convergent towards a broadly truncate apex in ventral aspect. Lateral lobes of tegmen slightly longer than the median piece, relatively stout and weakly clavate. Median strut of tegmen long, one and a half times as long as the rest of tegmen.

Female. Frons black or dark brown with a black posterior part. Clypeus reddish brown to dark brown. Mouth parts and antennae usually darker than male. The pale markings on anterior corners of pronotum reddish brown and often very small and indistinct or entirely disappear. Pubescence of pronotum not golden but silvery as well as the rest of dorsum.

Female genitalia: Receptaculum seminis very broad and short; cornus shorter than twice of the width, very weakly curved; nodulus indistinct; rans rather long, distinctly longer than wide and much narrower than cornus. Hemisternites relatively transverse subtriangular, outer margin not distinctly rounded and basal handle relatively broad; stylus minute.

Body length: 3.2–4.0 mm., width: 2.4–2.9 mm., depth: 1.6–2.1 mm.

*Distribution*: Formosa.

Holotype (♂): Chihsinliao, Tainan Hsien, Formosa, 15. iv. 1965, T. Shirôzu leg.

Paratypes: 1 ♀, Hassenzan (= Pahsienshan, 2448 m. alt.), Taichung Hsien, 12. vii. 1932, T. Esaki leg.; 1 ♂, Meichi, Nantou Hsien, 16. v. 1965, T. Shirôzu leg.; 4 ♂♂ 3 ♀♀, Penpuchi, Nantou Hsien, 26. v. 1965, T. Shirôzu leg.; 1 ♂ 1 ♀, Nanshanchi, Nantou Hsien, 27. v. 1965, T. Shirôzu leg.; 2 ♂♂ 1 ♀, Chihsinliao, Tainan Hsien, 15. iv. 1965, T. Shirôzu leg.; 1 ♀, Fenchihu, Chiai Hsien, 8. vii. 1965, R. Ishikawa leg.; 1 ♂, Hohuanshan (3416 m. alt.), Nantou Hsien, 1. vii. 1965, T. Nakane leg.

*Remarks*. As far as the descriptions of the Kapur's monograph are concerned, the present species has some different important characters, contrasting with the rest known species of the genus *Aspidimerus*, namely the eight-segmented antennae (sometimes, the sixth segment is incompletely divided into two ones), the flat anterior margin of the mentum which is not emarginate in middle, the prosternal carinae which are connected anteriorly by an indistinct transverse carina, the distinctly angulate outer side of hind tibiae, etc. Such characters are often attached importance to the generic characters, but I hope to include this species into the genus *Aspidimerus* tentatively, because it is agreeable with others of the genus in question in the general structure of prosternum, the body form, the structure of the male and female genitalia, etc. and the first of the above-mentioned differentiation is not constant and the third and the last of them are also observed in the next described species, too.

The name of this beautiful species is dedicated to the late Prof. T. Esaki, who was one of the greatest entomologist of Japan and collected a specimen of this species himself.

#### 8. *Aspidimerus matsumurai* sp. nov. (Figs. 2–K; Fig. 6)

Male. Body oblong oval, moderately convex above and pubescent. Head including antennae and mouth parts reddish brown. Pronotum black except the antero-lateral corners and the narrow anterior margin which are reddish brown, the reddish markings of antero-lateral corners relatively large and triangular but not reaching to the basal margin of pronotum. Scutellum and elytra black, the latter each with a round red discal marking situated slightly nearer to the base than to

the apex of elytron. Underside of thorax black to dark blackish brown except reddish brown hypomera of prothorax and mesepimera. Elytral epipleura dark blackish brown, partly somewhat reddish. Abdomen and legs reddish brown.

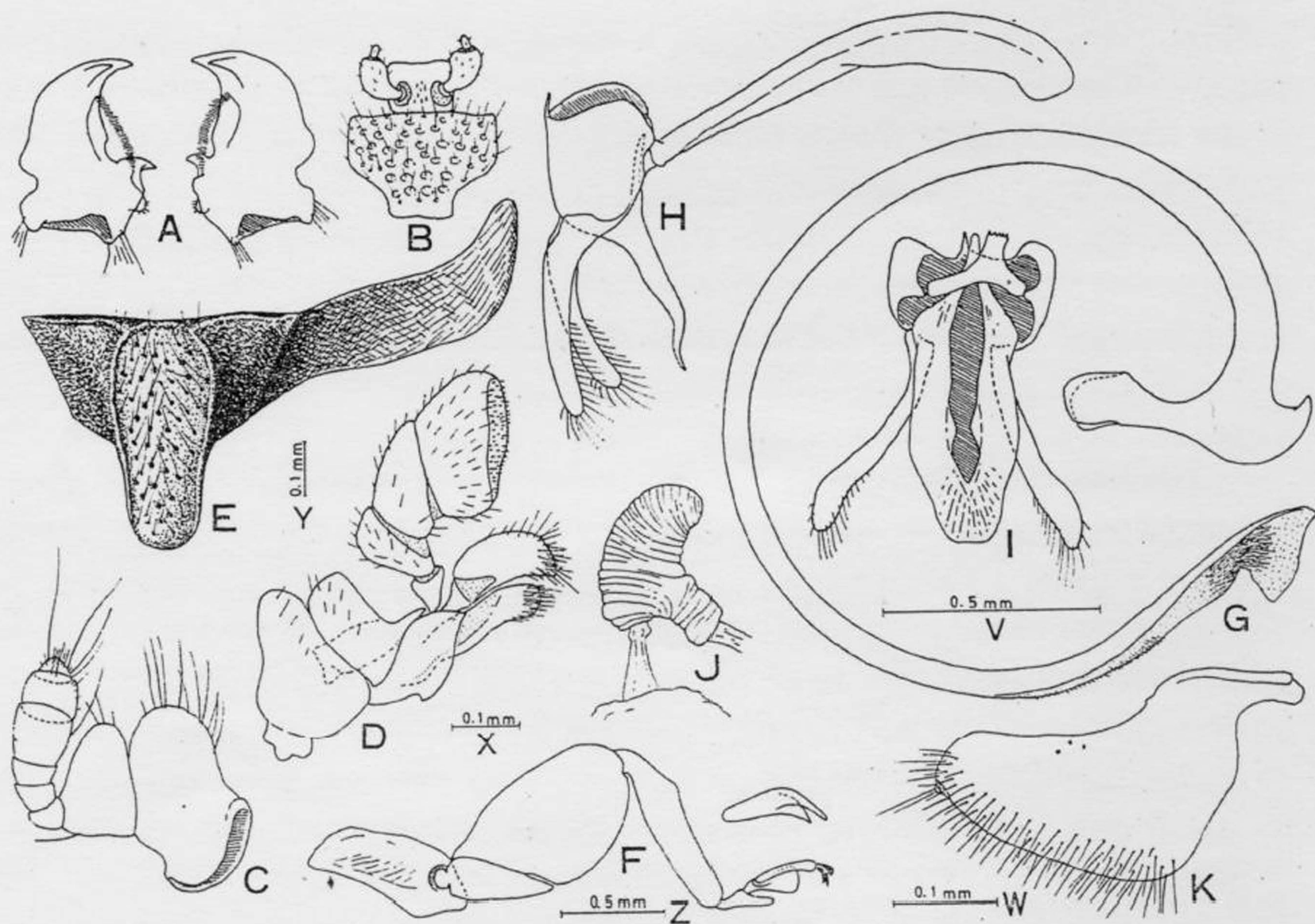


Fig. 5. *Aspidimerus esakii* sp. nov.

A, Mandibles. B, Labium, ventral aspect. C, Antenna. D, Maxilla. E, Prosternum. F, Hind leg. G, Siphon, lateral aspect. H, Tegmen, lateral aspect. I, Tegmen, ventral aspect. J, Receptaculum seminis. K, Hemisternite. Scales V, W, X, Y and Z are applied to A, B, G-I; to C, K; to D, J; to E; and to F, respectively.

Head slightly broader than half the pronotal width. Interocular distance about half as much as the head width. Frons nearly flat, slightly convex, and closely and very strongly punctured; innerocular margins of frons slightly arcuate and weakly divergent posteriorly. Clypeus distinctly narrower than interocular distance, even at its distinctly broadening apical part; anterior margin of clypeus rather deeply emarginated in middle; surface of clypeus finely and very sparsely punctate. Antennae minute, nine-segmented. The basal segment very large and ovate; the second large but much narrower than the basal, subtrapezoidal with a distinctly pointed inner side; the third segment relatively large triangular; three proceeding segments scarcely wider than the third; the seventh relatively short, about as long as two preceding segments combined. Anterior margin of mentum straight, with a small but distinct triangular emargination in the middle; the anterior corners rectangulate; the lateral sides of mentum parallel at anterior one-third, then suddenly and straightly convergent posteriorly. Apical segment of labial palpi narrow and relatively long. Pronotum slightly broader than two-thirds of the body width, relatively short and its lateral sides strongly convergent anteriorly in dorsal aspect. Anterior corners of pronotum rectangular with a rounded tip, posterior corners obtusely angulated, and lateral margins extremely narrowly marginated, straight at basal half and slightly arcuate at anterior half; posterior margin of pronotum narrowly marginated, rather strongly arcuated and strongly convex posteriorly in middle. Surface of pronotum very densely and moderately strongly punctate at disk and the punctation becoming stronger towards laterally. Scutellum relatively large, triangular, much

Holotype (♂): Granbi (? Garanpi = Oluanpi, Pingtung Hsien), Formosa, 9. v. 1927, K. Kamiya leg. preserved in the collection of the Entomological Institute, Hokkaido University, Sapporo.

*Remarks.* This new species is much similar to *Aspidimerus birmanicus* (Gorham, 1895) from Burma in the dorsal coloration, but the male genitalia of this species extremely differs from that of the latter. According to Kapur (1948), the hitherto known species of the genus *Aspidimerus* have the prosternal carinae which do not meet at the anterior end. The new species described here is different from the others in this respect, but is almost agreeable with the genus *Aspidimerus* in other generic characters. The specific name is dedicated to the late Prof. S. Matsumura, the greatest pioneer in Japanese Entomology.

### TRIBE CHILOCORINI

Three species of this tribe occur in Formosa and all of them belong to a single genus *Chilocorus*. Among them, a species was recorded by Miwa (1932) and the rest two are newly added and described in this paper.

#### GENUS *CHILOCORUS* LEACH, 1815

*Chilocorus* Leach, 1815, in Brewster, Edinburgh Encycl. 9: 116. (type-species: *Coccinella cacti* Linnaeus).

The characters of the genus has been described by Chapin (1965), compared with all the known genera of the tribe Chilcorini.

#### Key to the species of the genus *Chilocorus* of Formosa

- 1 (4) Dorsal surface blackish with reddish markings on elytra. Blackish area of dorsum more or less with bluish or greenish metallic lustre which is rarely indistinct.
- 2 (3) Each elytron with a round reddish spot only. Body length: 3.9–4.6 mm. .... *Chilocorus shirozui* sp. nov.
- 3 (2) Each elytron with two round or oval reddish spots arranged transversely. Body length: 3.4–3.7 mm. .... *Chilocorus alishanus* sp. nov.
- 4 (1) Dorsal surface entirely reddish brown without any distinct markings on elytra. Body length: 5.5–6.2 mm. .... *Chilocorus politus* Mulsant, 1850

#### 1. *Chilocorus politus* Mulsant, 1850

*Chilocorus politus* Mulsant, 1850, Spec. Trim. Sécuripalp.: 455 (Nepaul); Miwa, 1931, Rep. Dep. Agric. Gov. Res. Inst. Taihoku 55:87 (Formosa: Kôshun).

*Distribution:* Himalaya, India, Java, China (Yunnan), Formosa.

*Remarks.* This species was recorded from Kôshun (= Hengchung), near the southernmost of Formosa, by Miwa (1931) in his catalogue of Formosan Coleoptera. The occurrence of the present species in Formosa is regarded not to be unnatural from its general distributional range, though I have examined no Formosan specimen of this species or its allies which have the entirely reddish dorsal coloration.

#### 2. *Chilocorus alishanus* sp. nov. (Fig. 7-A~G)

Body short oval, dorsum strongly convex above and strongly shining. Head deep black; labrum and antennae dark yellowish brown; mouth parts black to pitchy brown. Pronotum and elytra black with a distinct bluish or greenish lustre; each of the latter with two reddish markings which are transversely situated at about two-fifths of elytral length from the base. The elytral red

spots round or elongate oval and medium-sized; the inner spot as large as or slightly larger than the outer one. Underside of thorax, elytral epipleura and legs entirely black. Abdomen entirely yellowish orange.

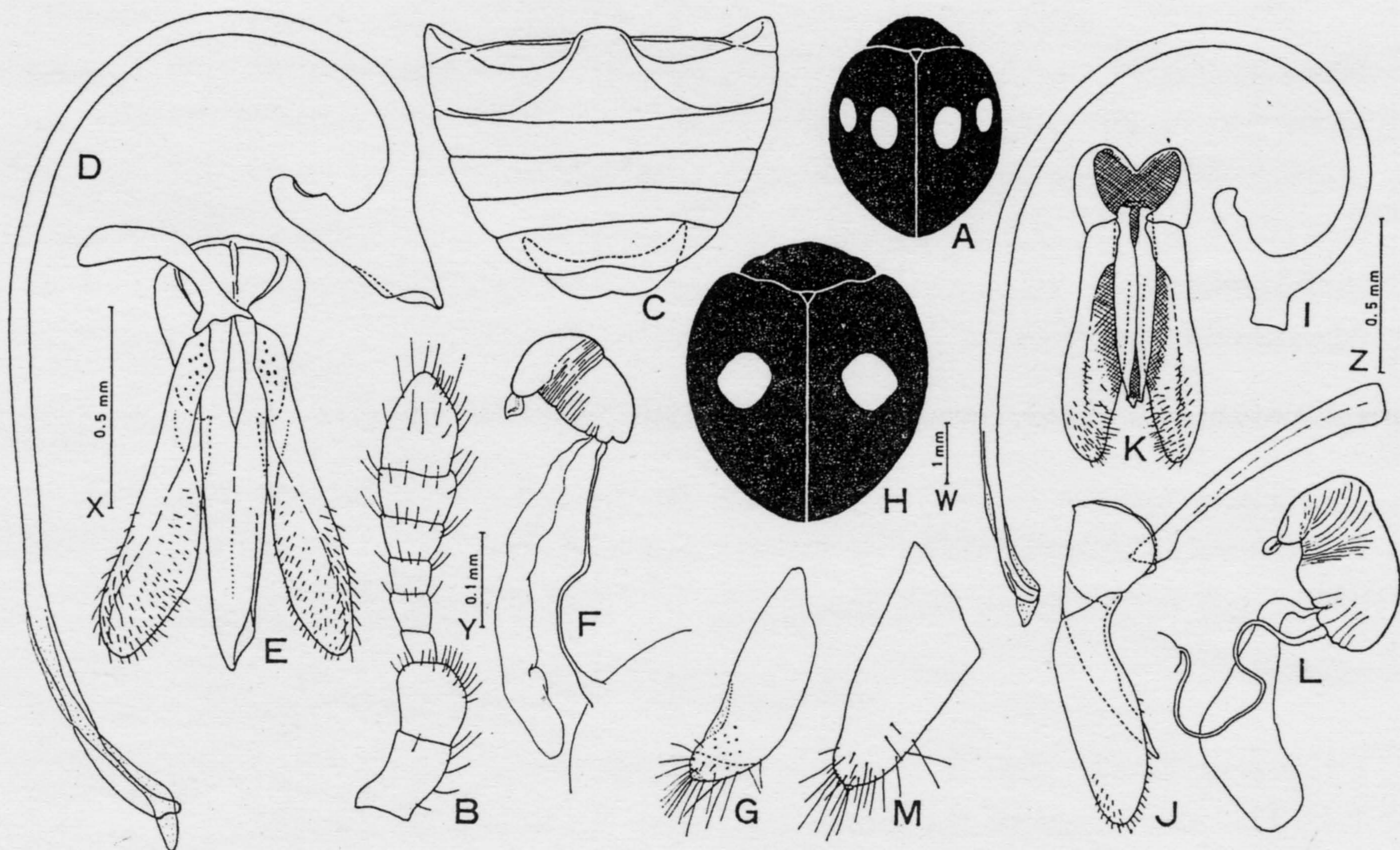


Fig. 7. *Chilocorus alishanus* sp. nov. (A-G) and *Ch. shirozui* sp. nov. (H-M).

A, H, Dorsal outlines. B, Antenna. C, Abdomen of male, ventral aspect. D, I, Siphoes, lateral aspect. E, K, Tegmens, ventral aspect. J, Tegmen, lateral aspect. F, L, Receptacula seminis. G, M, Hemisternites. Scales W, X, Y and Z are applied to A, H; to D-G, L, M; to B; and to I-K, respectively.

Head relatively large, three-fifths as wide as pronotum. Interocular distance about half as wide as the head width; frons weakly but distinctly convex, strongly, relatively sparsely and irregularly punctate and bearing fine hairs. Each puncture on frons longitudinally elongate. Innerocular margins of frons nearly straight and distinctly convergent anteriorly. Clypeus rather strongly and irregularly punctate, and bearing rather long hairs. Anterior margin of clypeus deeply and sinuately excavated at middle part, and distinctly margined at entire width. Antennae relatively long but distinctly shorter than the interocular distance and eight-segmented. First and second segments large, both combined longer than one-third of the total length of antenna. The third extremely narrower than the second and longer than wide; the fourth broader than the third and nearly as long as wide; the fifth slightly broader than the fourth and shorter than wide; the sixth nearly as long as the preceding and distinctly broadening apically; the seventh segment further broader than and nearly as long as the preceding; the terminal segment distinctly narrower than the preceding and nearly as long as two preceding ones combined. Terminal segment of maxillary palpi about one and a half times as long as wide; lateral sides of the segment weakly divergent apically; apical side of the segment strongly obliquely truncate, and nearly as long as the inner side. Mentum very short, its lateral side strongly divergent anteriorly and its anterior corners sharply pointed. Pronotum strongly arched, deeply and subquadrately emarginate anteriorly. Anterior corners and lateral sides of pronotum together rounded and margined. Posterior part of the lateral sides of pronotum never angulate and feebly arcuate continuing to the posterior margin of pronotum. Anterior margin distinctly margined but the margination indistinct at middle part. Disk of pronotum very finely and rather densely punctured except the lateral portions where the surface is strongly punctured and finely pubescent. Scutellum small, triangular,

slightly longer than wide with a few fine punctures. Elytra distinctly wider than pronotum at the base, widest at about two-fifths the elytral length from the base, then rather strongly narrowing apically. Humeral calli distinct. Punctuation of elytral disk distinctly stronger and sparser than that of pronotal disk; the punctuation extremely strong near the external margin. Prosternal process shorter than half the prosternal length, broadening posteriorly and longitudinally strigose. Prosternum without distinct carinae. Anterior margin of mesosternum shallowly and arcuately excavate. Femoral line of first abdominal sternum incomplete, reaching near the posterior margin of the sternum, running along parallel to the margin of the sternum and not reaching to the external side of the sternum. Area surrounded by the femoral line distinctly shagreened. Posterior margin of fifth abdominal sternum arcuately and rather deeply emarginate at middle in male, and flat in female. Sixth abdominal sternum long exposed and its posterior margin shallowly and angulately emarginate at middle in male; in female the segment shortly exposed and its posterior margin convex posteriorly.

Male genitalia: Siphon slender and long; basal two-fifths of siphon semicircularly curved and a short apical part of siphon very weakly bisinuate. Siphonal capsule rather large with a long inner process and a relatively short outer process. Tegmen very large and stout. Median piece of tegmen slender and cylindrical, narrower apically; apex of median piece asymmetrical, strongly obliquely truncate at visible right side in ventral aspect. Lateral lobes of tegmen robust, spindle-shaped, distinctly spatulate, and nearly as long as the median piece; surface of innerside of the lateral lobe finely pubescent rather densely in nearly entire area; apical half of its outside bearing short setae sparsely.

Female genitalia: Hemisternites elongate, parallel-sided at middle, the outside rather distinctly arcuate at apical half, the apex feebly rounded with a rather indistinct stylus. Receptaculum seminis characteristic in its shape as shown in the figure; apical part distinctly provided aside with a distinct appendix at its tip; ranus and nodulus indistinct; accessory gland very large, longer than twice of receptaculum seminis, infundibulum scarcely definite.

Body length: 3.4–3.7 mm., width: 2.7–3.0 mm., depth: 1.5–1.7 mm.

*Distribution*: Formosa (Higher district).

Holotype (♂): Mt. Alishan (2400 m. alt.), Chiai Hsien, Formosa, 27. vii. 1966, H. Kamiya leg.

Paratypes: 4 ♂♂ 2 ♀♀, Alishan, 27–30. vii. 1966, H. Kamiya leg.; Mt. Yuboran (10000 ft), Formosa, 15. vii. 1931, T. Kano leg.

*Remarks*. The present species very closely resembles to *Chilocorus bijugus* Mulsant, 1853 from India in the dorsal coloration, but the former is distinguishable from the latter by the stout antenna, the relatively elongate receptaculum seminis, the slender median piece of tegmen, etc.

### 3. *Chilocorus shirozui* sp. nov. (Fig. 7-H~M)

Body nearly hemispherical, slightly longer than wide, posterior part rather strongly narrowing towards the apex. Dorsum strongly convex above and strongly shining. Head black; labrum black with a narrow reddish anterior margin, antennae and labial palpi dark brown, and maxilla and mentum black. Pronotum and elytra black with a bluish metallic lustre. Scutellum black. Each elytron with a reddish round spot which is situated distinctly nearer to the base than the apex of elytron and of which diameter less than one-third the elytral width. Elytral epipleura black. Underside of thorax dark brown to black. Abdomen entirely reddish orange. Femora black with a very short reddish tip, tibiae black and tarsi reddish brown to blackish brown.

Head three-fifths as wide as the pronotal width. Interocular distance somewhat narrower than

half the head width. Frons weakly convex in general and slightly depressed at the central area; surface of frons finely and relatively densely punctate; innerocular margins of frons nearly straight and scarcely or slightly convergent anteriorly. Anterior margin of clypeus distinctly margined, and rather deeply and arcuately emarginate in middle; each half of the anterior margin of clypeus not angulated but gently rounded. Pronotum very strongly inclined below anteriorly and laterally; anterior margin distinctly and subquadrately excavated; margination of the anterior margin of pronotum very distinct except at a short median part where it disappears. Lateral sides of pronotum truncate and weakly arcuate with rounded anterior and posterior corners. Pronotal disk very finely and relatively densely punctate and its lateral portion densely punctate. Scutellum elongate subtriangular, scarcely punctured. Elytral base much broader than the pronotum, anterior corners of elytra rounded, elytra widest at two-fifths the elytral length from the base and posterior half rather strongly narrowing apically. Outer margin of elytra rather distinctly expanded externally in entire length. A shallow depression is observed along the external margin and its depression is rather far distant from the margin at anterior half. Elytral disk very strongly and relatively densely punctate, but the elytral punctation much sparser than that of pronotal disk. Extremely strong punctures are irregularly distributed on external area of elytra.

Male genitalia: Siphon slender and relatively long; basal half rather strongly curved forming three-quarters of an imaginary circle, and apical half scarcely curved except a short apical part which is curved ventrally. Siphonal capsule relatively small, its inner process long and slender, and the outer process much shorter than the inner one but distinctly definite with a truncate tip. Tegmen very large and robust; lateral lobes of tegmen very stout, spatulate with a rounded apex; apical half of lateral lobes bearing very short setae densely, mainly on its inner surface. Median piece of tegmen slender, nearly cylindrical and gradually narrowing apically, much shorter than the lateral lobes, about three-fourths as long as the latter; tip of median piece pointed with a pair of small lamellate processes which are situated beside the pointed tip and forming an apical end of the groove for the reception of the siphon. Median strut slender, relatively simple in form and slightly shorter than the rest of tegmen.

Female genitalia: Receptaculum seminis elongate oval about twice as long as wide, and apical part distinctly bending aside; nodulus and rarus not distinctly definite; appendix of receptaculum seminis small but distinct. Accessory gland longer than receptaculum seminis. Hemisternites relatively broad and weakly narrowing apically, with a small but distinct stylus at its gently rounded apex.

Body length: 3.9–4.6 mm., width: 4.3–3.9 mm., depth: 2.1–2.4 mm.

*Distribution*: Formosa.

Holotype (♂): Sungkang (2050 m. alt.), Nantou Hsien, Formosa, 10. vi. 1965, T. Shirôzu leg.

Paratypes: 1 ♀, Sungkang, 10. vi. 1965, T. Shirôzu leg.; 1 ♀, ditto, 1. vi. 1965, T. Shirôzu leg.; 1 ♀, Alishan (2300 m. alt.), Chiai Hsien, 9. iv. 1965, T. Shirôzu leg.; 1 ♀, Taiheizan (= Taipingshan), Ilan Hsien, 28. x. 1932, Keishô Satô leg.

*Remarks*. This new species is closely allied to *Ch. kuwanae* Silvestri which is commonly known from Japan proper and China but easily distinguished from the latter in having a bluish metallic lustre on dorsum, and very strong elytral punctures, etc. The feature of elytral punctation of the present species is somewhat related to the Ryukyus' species, *Ch. amamensis* H. Kamiya and its allies but the structures of male genitalia are quite different among them. Further, *amamensis* and its allies have not a metallic lustre on its dorsum. *Ch. chalybaetus* Gorham seems to also resemble to this new species in the dorsal coloration, but in *chalybaetus* body size is much larger (6 mm.) and the underside of thorax is entirely reddish.