

## Three New Metallic Species of the Genus *Lycocerus* (Coleoptera, Cantharidae) from Taiwan

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**Abstract** Three new species of the genus *Lycocerus* are described from Taiwan and illustrated, under the names *L. masatakai*, *L. flavimarginalis* and *L. satoi*. All of them belong to the *vitellinus* group, and fall in a new subgroup (that of *L. fainanus*) with two other Taiwanese species previously known.

Recently, a taxonomic revision of the genus *Lycocerus* GORHAM, 1889, was published by OKUSHIMA (2005), who regarded *Athemus* LEWIS, 1895, and its subgenera, *Athemellus* WITTMER, 1972, *Andrathemus* WITTMER, 1978, *Mikadocanthis* WITTMER et MAGIS, 1978, and *Isathemus* WITTMER, 1995, as junior synonyms of *Lycocerus*, so that all the species previously placed in them were transferred to the genus *Lycocerus*.

For the Taiwanese fauna, WITTMER (1983, 1984) recorded thirty-two species in total as members of the genera *Athemus* (incl. subgenus *Andrathemus*), *Athemellus* and *Lycocerus*. Later, two species of *Athemellus*, *A. intermixtus* (WITTMER, 1954) and *A. multilimbatus* (PIC, 1911), were transferred to the genus *Habronychus* WITTMER, 1981 (OKUSHIMA & SATÔ, 1999; OKUSHIMA, 2003). On the other hand, ŠVIHLA (2004) regarded the latter of the two as a member of the genus *Stenothemus* BOURGEOIS, 1907. Consequently, thirty species of *Lycocerus* have been recorded from Taiwan up to the present time.

In former times, I studied the Taiwanese Cantharidae with SATÔ who unexpectedly passed away in the summer of 2006 from cancer. Recently, I found three interesting species of the genus *Lycocerus* in the materials which were collected in cooperation with SATÔ. After a careful examination, it became clear that all of them are new to science. They will be described in the present paper, which is dedicated to the memory of the late Dr. Masataka SATÔ.

The type series of the new species to be described in this paper are deposited in the following institutions and personal collections, which are referred to in the text by the following abbreviations: CBM: Natural History Museum and Institute, Chiba; EUM: Ehime University, Matsuyama; KURA: Kurashiki Museum of Natural History; KTC: Kazuhiro TAKAHASHI's collection; NMNS: National Museum of Natural Science, Taichung; NSMT: National Science Museum, Tokyo; TUA: Tokyo University of

Agriculture, Atsugi.

The methods of anatomy and sketch were followed OKUSHIMA (2005).

Before going into further details, I wish to express my deep gratitude to the late Dr. Masataka SATÔ who had given me constant guidance on the taxonomic study of the Cantharidae and kind help in various ways for more than sixteen years, and to Dr. Shun-Ichi UENO of the National Science Museum (Nat. Hist.), Tokyo, for his critical reading of the original manuscript. My thanks are also due to Drs. Nobuo OHBAYASHI (EUM), Yasuaki WATANABE (TUA), Shūji OKAJIMA (TUA), Shūhei NOMURA (NSMT), Akiko SAITO (CBM), Kiyoshi ANDO and Mr. Kazuhiro TAKAHASHI for their kind support in loaning specimens or literature from their institutions or private collections, and to all the collectors, in particular Drs. Chun-Lin LI, Fumio HAYASHI, Takao SHIMIZU, Toshio KISHIMOTO, Hiraku YOSHITAKE, Messrs. Michiaki HASEGAWA, Ban TANAKA, Yoshiyasu KUSAKABE, Takashi KURIHARA, Takashi MIZUSAWA and Kentaro OKAJIMA, who kindly offered invaluable specimens to me.

#### Group of *Lycocerus vitellinus*

OKUSHIMA (2005) recognized nine species-groups in the genus *Lycocerus* based mainly on the structure of genitalia in both sexes.

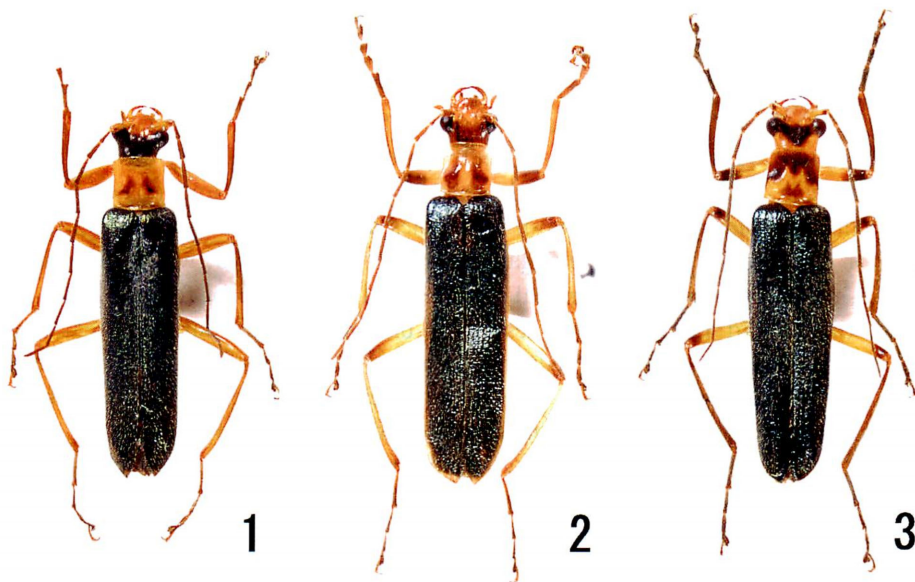
*Lycocerus vitellinus* group is characterised by the following points: median lobe of male genitalia provided with a process at the apex; spermathecal duct short; basal portion of spermatheca gradually thickened to the base; spermatheca provided with one spiral tube.

In this paper, I have placed five Taiwanese species including three new species in this species-group. However, a new additional subgroup is recognized for them, since they do not fall in any subgroups proposed by OKUSHIMA (2005).

#### Subgroup of *Lycocerus fainanus*

*Common characteristics.* Body large-sized and moderately elongate. Eyes strongly prominent. Apical segment of maxillary palpus broadened cuneate. Antennae filiform, provided with a groove on each of several middle segments in male. Pronotum subquadrate, and faintly dilated posteriad. Elytra provided with metallic lustre. Each outer claw of fore and middle legs provided with a digitiform tooth at the base only in female, the other claws simple. Median lobe of male genitalia provided with a conspicuous process directed dorsad at apex; inner sac lengthened behind and ventrad. Diverticulum and spermatheca relatively long.

This subgroup is composed of five Taiwanese species, namely, *Lycocerus fainanus* (PIC, 1910), *L. taoyuanus* (WITTMER, 1983) and the following three new species.



Figs. 1-3. *Lycocerus* spp. from Taiwan. — 1, *L. masatakai* OKUSHIMA, sp. nov., ♂ (holotype) from near Mt. Lalashan; 2, *L. flavimarginalis* OKUSHIMA, sp. nov., ♂ (holotype) from Fenchihu; 3, *L. satoi* OKUSHIMA, sp. nov., ♂ (holotype) from Tengchih.

*Lycocerus masatakai* OKUSHIMA, sp. nov.

(Figs. 1, 4-8, 17)

*Type series.* Holotype: ♂, near Mt. Lalashan, Taoyuan Hsien, Taiwan, 5-V-1983, M. HASEGAWA leg. (NMNS). Allotype: ♀, same data as for the holotype (NMNS). Paratypes: [Taiwan] Taipei Hsien: 1♀, Wulai, 24-III-1968, Y. ARITA leg. (EUM). Taoyuan Hsien: 1♂, Palin — Chihtuan, 27-IV-1978, N. YASHIRO leg. (EUM); 1♀, Sulo, 7-V-1982, N. OHBAYASHI leg. (EUM); 1♂, 1♀, same data as for the holotype (KURA); 1♂, 1♀, Mt. Lalashan, 13, 16-IV-1984, Y. KUSAKABE leg. (KURA); 1♀, Suling (=Ssuleng) — Chihtuan, 14-IV-1984, Y. KUSAKABE leg. (KURA); 1♀, Mt. Lalashan, 2-V-1988, M. KIMURA leg. (EUM). Ilan Hsien: 1♂, Twolin, 29-IV-1982, N. OHBAYASHI leg. (EUM); 1♂, Fushan Botanical Garden, 29-III-1998, M. SAKAI leg., at light (EUM); 1♀, Fushan Botanical Garden, 30-III-1998, M. SAKAI leg. (EUM); 1♀, Fushan Botanical Garden, 30-III-1998, M. SATŌ leg. (EUM); 2♂♂, Fushan, 600 m alt., Yuanshan, 29-III-2004, T. KURIHARA leg. (KURA). Miaoli Hsien: 1♀, Chieh-cheng Shan (Ta-lu Lin-tao), Tai-an Hsiang, 1,940-1,980 m, 28-V-1991, A. SAITO leg. (CBM-ZI 23983). Taichung Hsien: 1♀, Techu, 30-IV-1982, N. OHBAYASHI leg. (EUM); 1♀, Wu-ling Farm, 1-V-1994, T. SHIMIZU leg. (KURA). Nantou Hsien: 1♀, Sungkang — Meifeng, 25~26-V-1972, M. SAKAI leg. (EUM); 2♀♀, Meifeng, 9-V

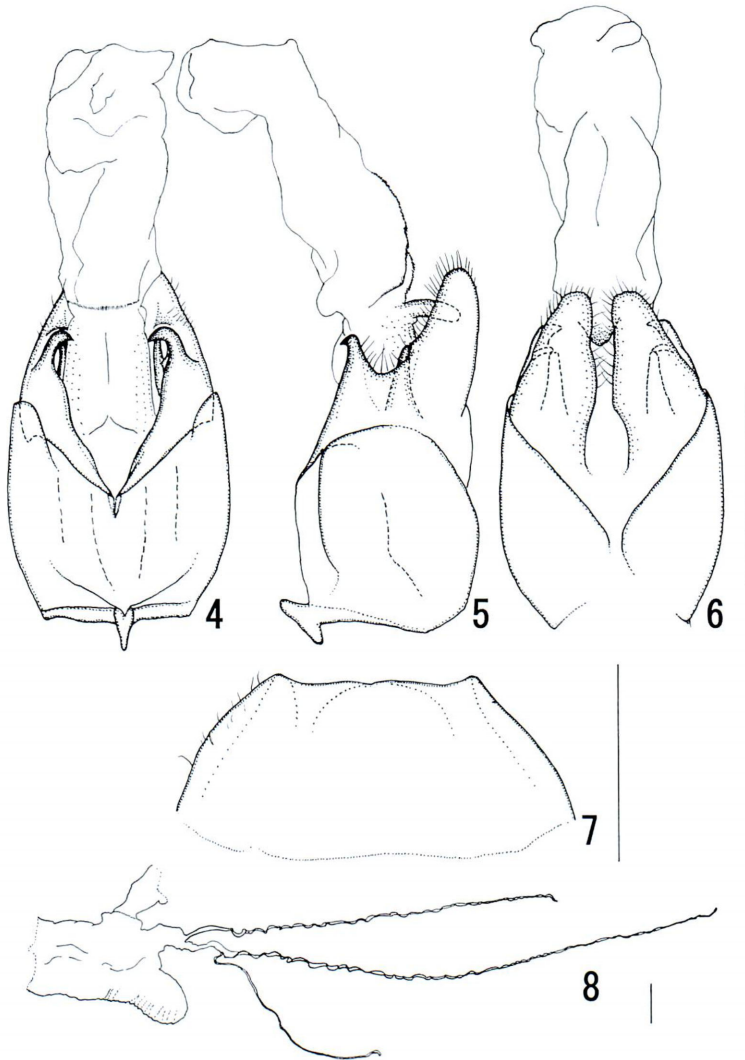
—1994, C. LOU leg. (KURA); 1♀, Sungkang, 15-V-1994, T. KISHIMOTO leg. (KURA); 1♀, Wanta, 8-V-1997, C. LOU leg. (KURA); 1♀, Sungkang, 9-V-1997, C. LOU leg. (KURA); 1♀, Meimu — Holuan, 30-III-1998, F. HAYASHI leg. (KURA). Chiayi Hsien: 1♀, Karapin (= Chaoliping), 11-VI-1938, Y. YANO leg., K. SAKAGUCHI collection (NSMT); 2♂♂, 1♀, Fenchihu, 29-IV-1977, S. SAITO leg. (TUA).

*Distribution.* Taiwan: northern to central areas.

*Description.* Male. Body mostly yellowish brown; eyes and posterior area of cephalic dorsum black; apical parts of mandibles and claws reddish brown; antennae except for basal parts, a pair of elongate markings on pronotum, which are divergent posteriad, metasternum and abdominal sternites 2nd to 7th except for margins of each sternite, tibiae, and tarsi more or less dark brown, but the darkish area of each abdominal sternite is gradually reduced to apical segment; elytra dark green with metallic lustre. The areas of dark brown colour either reduced or enlarged; in some paratypes, a pair of markings on pronotum reduced and rarely evanescent, or enlarged to connect with each other and forming an inverse W-shaped marking; scutellum dark brown, and legs almost yellowish brown or blackish not only tibiae and tarsi but also apical portions of femora. Metallic green elytron sometimes somewhat dusky or bluish, or rarely fringed with narrow yellowish edge in lateral to apical sides in paratypes. Body closely covered with fine pale pubescence; apical margin of clypeus and lateral margins of pronotum fringed with pale bristles; each elytron provided with intermingled pale bristles in addition to primary pubescence; antennae provided with intermingled brown bristles sparsely in addition to primary pubescence; tibiae and tarsi covered with pale bristles.

Body slender. Head slightly shorter than its width; dorsum faintly hollowed on vertex, and depressed along the apical margin of clypeus and in lateral areas before eyes; surface smooth with faint lustre, closely with minute and indistinct punctures; clypeus arcuate at apical margin with its centre faintly indented; eyes large, globular and strongly prominent, ratio of the diameter of an eye to interocular space 1 : 1.7; labial palpus with semicircular apical segment; maxillary palpus with broadened cultellate apical segment which is slenderer than that of labial palpus; antennae slender and filiform, attaining to apical third of elytra, 1st segment clavate, 2nd a little dilated apicad, 3rd to 11th subcylindrical, each of 4th to 5th (or to 6th in some paratypes) segments with a very short groove on the dorso-external side of apical two-fifths, relative lengths of antennal segments as follows:— 15 : 10 : 11 : 16 : 16 : 16.5 : 16 : 15.5 : 15 : 13 : 14 (Fig. 17).

Pronotum subquadrate, faintly dilated posteriad, 0.89 times (in the holotype; range 0.84–0.94) as wide as head, 0.99 (0.94–1.06) times as long as wide; anterior and posterior margins weakly arcuate; lateral margins feebly sinuate; anterior angles rounded; posterior angles obtuse; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow faintly perceptible only in posterior area; surface smooth with faint lustre. Scutellum triangular with blunt apex.



Figs. 4-8. *Lycocerus masatakai* OKUSHIMA, sp. nov. — 4-6, Male genitalia (4, ventral view; 5, lateral view; 6, dorsal view); 7, 8th abdominal sternite in female; 8, lateral view of female genitalia. (Scale: 1.0 mm for Figs. 4-7, 0.5 mm for Fig. 8.)

Elytra conjointly 1.54 (1.47-1.59) times as wide as pronotum, 3.25 (3.04-3.27) times as long as wide, the sides subparallel though slightly convex around basal fourth; dorsum closely and rugosely punctate, though weakly in basal part; each elytron provided with two vague costae.

Legs considerably slender; each femur mostly straight; each tibia mostly straight though feebly arcuate in basal part, and also at the apical portion in hind legs; all claws simple.

Male genitalia:— Ventral process of each paramere stout, broad at base and tapered apically, with the apical portion strongly curved inwards, forming a hook with pointed tip; dorsal plates rounded at each apex, inner margins faintly sinuate, and apart from each other. Each laterophysis tapered, slightly curved dorsad with its pointed tip towards the protuberance on the inner side of dorsal plate. Median lobe provided with a large and faintly curved process on the dorsal side at the apex. Inner sac lengthened and swollen ventro-posteriorly, as long as tegmen (Figs. 4–6).

Length of body: 13.3 mm (in the holotype; range 11.6–13.3, measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 3.00 (2.60–3.00) mm (measured at the widest part of conjoint elytra).

*F e m a l e.* Body somewhat longer and wider than in the male. Apical margin of clypeus subtruncated. Eyes not so large as in the male, ratio of the diameter of an eye to interocular space 1 : 2.1. Antennae a little shorter than in the male and lacking groove on each segment. Pronotum 0.89–1.04 times as wide as head, 0.85–0.97 times as long as wide. Elytra conjointly 1.45–1.70 times as wide as pronotum, 2.81–3.22 times as long as wide. Each outer claw of fore and middle legs provided with a digitiform tooth at the base, the other claws simple. Eighth abdominal sternite subtruncated at terminal margin with both sides faintly projected (Fig. 7).

Female genitalia:— Vagina extending dorso-apicad. Diverticulum and spermathecal duct arising from ventro-apical portion of vagina. Diverticulum very thin, long and spiral except for basal part; spermathecal duct short; spermatheca somewhat stout at the base, and provided with a very long and thin spiral tube, which is clearly longer than diverticulum; accessory gland moderately thin and shorter than a half of spermatheca (Fig. 8).

Length of body: 12.4–16.0 mm; breadth of body: 3.05–3.95 mm.

*Notes.* This new species closely resembles *L. flavimarginalis* OKUSHIMA, sp. nov. from central Taiwan, but can be distinguished from the latter by the structure of the male genitalia, particularly strongly curved ventral process and somewhat short and tapered laterophysis. Besides, the elytra of this new species are usually wholly metallic green except in only one paratype fringed with yellowish edge as in *L. flavimarginalis*.

*Etymology.* The specific name is given to the memory of the late Dr. Masataka SATŌ who collected one of the paratypes of this beautiful new species, and also rendered many services to the development of entomology in Taiwan.

*Lycocerus flavimarginalis* OKUSHIMA, sp. nov.

(Figs. 2, 9–11, 18)

*Type specimen.* Holotype: ♂, Fenchihu, Chiayi Hsien, Taiwan, 29–IV–1977, S. SAITO leg. (TUA).

*Distribution.* Taiwan: central area (Chiayi Hsien).

*Description.* *M a l e.* Body mostly yellowish brown; eyes black; apical parts of mandibles and claws reddish brown; posterior area of cephalic dorsum, antennae, a pair

of elongate markings on pronotum, each of which is dilated posteriad with its posterior margin subtruncated diagonally, apical part of each femur, and tarsi mostly dark brown, but the darkish area of each part becomes vague in its marginal area; each elytron dark green with metallic lustre except for narrow marginal area at lateral to posterior sides which are yellowish brown with metallic lustre. Body closely covered with fine pale pubescence; apical margin of clypeus and lateral margins of pronotum fringed with pale bristles; each elytron provided with intermingled pale bristles in addition to primary pubescence; antennae provided with intermingled brownish bristles sparsely in addition to primary pubescence; tibiae and tarsi covered with pale bristles.

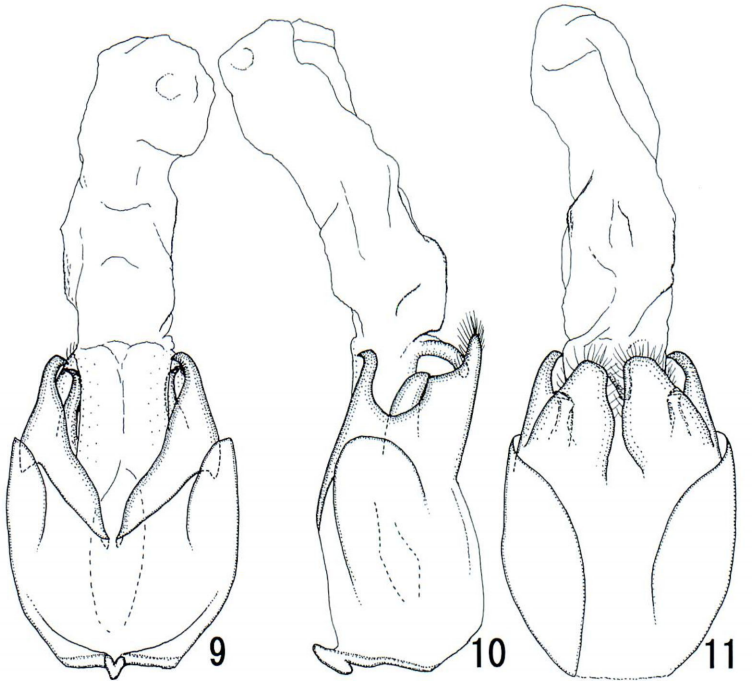
Body slender. Head slightly shorter than its width; dorsum faintly hollowed along the median longitudinal area at the middle, and depressed along the apical margin of clypeus and in lateral areas before eyes; surface smooth with faint lustre, closely with minute and indistinct punctures; clypeus arcuate at apical margin with its centre faintly indented; eyes large, globular and strongly prominent, ratio of the diameter of an eye to interocular space 1: 1.5; labial palpus with semicircular apical segment; maxillary palpus with broadened cultellate apical segment which is slenderer than that of labial palpus; antennae slender and filiform, attaining to apical third of elytra, 1st segment clavate, 2nd a little dilated apicad, 3rd to 11th subcylindrical, each of 4th to 9th segments with a longitudinal groove on the dorso-external side of the middle, though the grooves of 8th and 9th are very short, relative lengths of antennal segments as follows:— 15.5 : 10 : 13 : 18 : 17.5 : 18.5 : 19 : 18.5 : 17.5 : 15 : 16.5 (Fig. 18).

Pronotum subquadrate, faintly dilated posteriad, 0.87 times as wide as head, 1.00 times as long as wide; anterior and posterior margins weakly arcuate; lateral margins feebly sinuate; anterior angles rounded; posterior angles obtuse; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow faintly perceptible only in middle to posterior areas; surface smooth with lustre. Scutellum triangular with blunt apex.

Elytra conjointly 1.67 times as wide as pronotum, 3.23 times as long as wide, the sides subparallel though slightly convex around basal fifth to fourth; dorsum closely and rugosely punctate, though weakly in basal part; each elytron provided with two vague costae.

Legs considerably slender; each femur mostly straight; each tibia mostly straight though feebly arcuate in basal part, and also at the apical portion in hind legs; all claws simple.

Male genitalia:— Ventral process of each paramere stout and broad at base, the apical portion curved inwards with pointed tip; each dorsal plate somewhat rounded at the apex, inner margin a little sinuate, outer margin obtusely projected with inner protuberance at the middle, and apart from each other. Each laterophysis very stout, slightly curved dorsad with its pointed tip towards the protuberance on the inner side of dorsal plate. Median lobe provided with a large and curved process on the dorsal side at the apex. Inner sac lengthened and swollen ventro-posteriorly, as long as tegmen



Figs. 9–11. Male genitalia of *Lycocerus flavimarginalis* OKUSHIMA, sp. nov.; 9, ventral view; 10, lateral view; 11, dorsal view. (Scale: 1.0 mm.)

(Figs. 9–11).

Length of body: 14.1 mm (measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 3.25 mm (measured at the widest part of conjoint elytra).

F e m a l e. Unknown.

*Notes.* This new species closely resembles *L. masatakai* OKUSHIMA, sp. nov. from northern to central areas of Taiwan, but can be distinguished from the latter by the structure of male antenna which is provided with conspicuous longitudinal groove on each of several middle segments, and the structure of the male genitalia, particularly somewhat slender ventral process and very stout laterophysis. Besides, each elytron of this new species is provided with narrow yellowish marginal area in lateral to posterior sides at least in the holotype.

*Etymology.* The new specific name is derived from the characteristic colour pattern of the elytra which are metallic green and fringed with narrow yellowish edges only in lateral to apical sides.



*Lycocerus satoi* OKUSHIMA, sp. nov.

(Figs. 3, 12–16, 19)

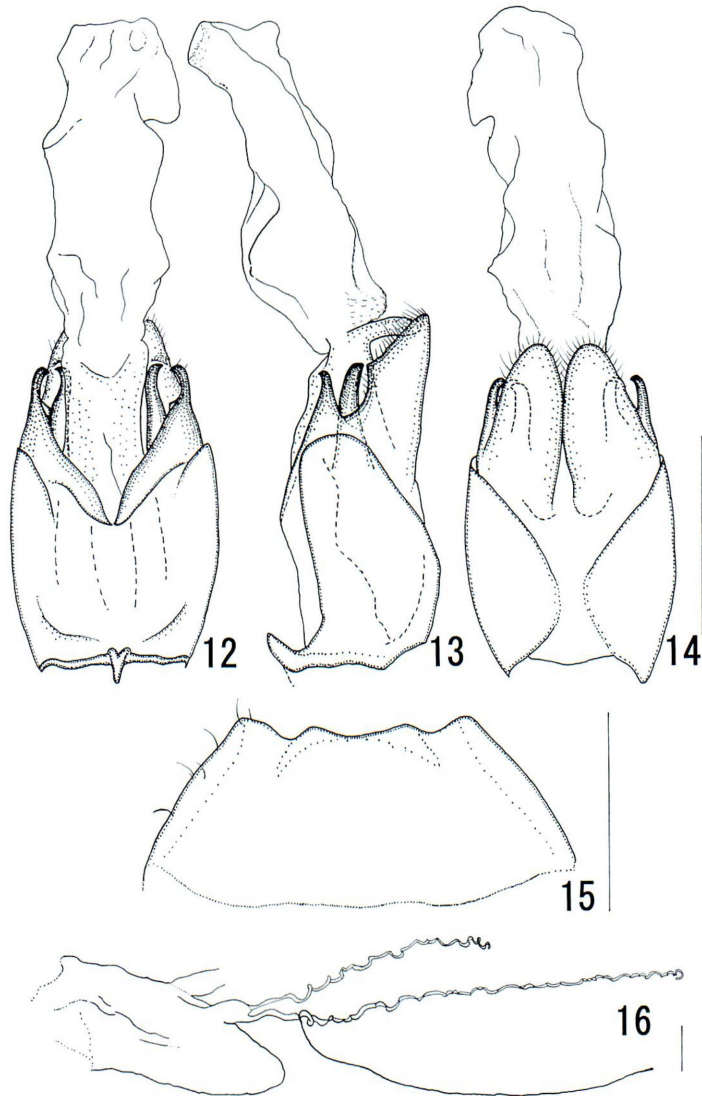
*Type series.* Holotype: ♂, Tengchih, Kaohsiung Hsien, Taiwan, 3–IV–2000, T. MIZUSAWA leg. (NMNS). Allotype: ♀, same locality as for the holotype, 27–III–2000, H. YOSHITAKE leg. (NMNS). Paratype: [Taiwan] Chiayi Hsien: 1♂, Fenchihu, 29–IV–1977, S. SAITO leg. (TUA). Kaohsiung Hsien: 1♀, Tien Chi, 2,200 m alt., 2–V–1986, K. BABA leg. (EUM); 2♀♀, Chyunshan, Logging Road, 3–13 km, 26~27–IV–1997, Y. Y. LIEN leg. (EUM); 1♂, Tengchih, Taoyuan, 29–III–2001, K. OKAJIMA leg. (KURA); 3♀♀, Tona, 850 m alt., Maolin, 26–III–2002, B. TANAKA leg. (KURA); 1♂, Tengzhi, 1,400 m alt., Yueshan Dist., 24–III–2004, K. MANO leg. (KTC). Pingtung Hsien: 1♂, 3♀♀, Kenting, 24–II–1991, C.-L. LI leg. (KURA). No prefectural name: 1♂, “G07”, “1998. 0506N” / “Hsiashalisen” (EUM).

*Distribution.* Taiwan: central to southern areas.

*Description.* Male. Body mainly yellowish brown; eyes and inverse subtriangular marking black, the latter reaching eyes on vertex; apical parts of mandibles and claws reddish brown; labial and maxillary palpi, antennae except for basal parts of 1st segments, anterior area before the middle inverse W-shaped convexity except for anterior marginal area and posterior middle marking on pronotum, apical portion of each femur, tibiae, and tarsi blackish brown, but the darkish areas often reduced or a little paler, and rarely almost yellowish brown for all legs in the paratypes; elytra dark green with metallic lustre, but sometimes somewhat bluish in the paratypes. Body closely covered with fine pale pubescence; apical margin of clypeus and lateral margins of pronotum fringed with pale bristles; each elytron provided with intermingled pale bristles in addition to primary pubescence; antennae provided with intermingled brown bristles sparsely in addition to primary pubescence; tibiae and tarsi covered with pale bristles.

Body slender. Head slightly shorter than its width; dorsum faintly hollowed along the median longitudinal area at the middle, and depressed along the apical margin of clypeus and in lateral areas before eyes; surface mostly smooth with faint lustre, but less lustrous on vertex, closely with minute and indistinct punctures; clypeus arcuate at apical margin with its centre faintly indented; eyes large, globular and strongly prominent, ratio of the diameter of an eye to interocular space 1 : 1.6; labial palpus with semicircular apical segment; maxillary palpus with broadened cultellate apical segment which is slenderer than that of labial palpus; antennae slender and filiform, attaining to apical third of elytra, 1st segment clavate, 2nd a little dilated apicad, 3rd to 11th subcylindrical, each of 4th to 8th segments with a longitudinal groove on the dorso-external side of the middle, but the grooves of 7th and 8th are very short, relative lengths of antennal segments as follows:— 15 : 10 : 11.5 : 16.5 : 16 : 17.5 : 17.5 : 16.5 : 16 : 14 : 15.5 (Fig. 19).

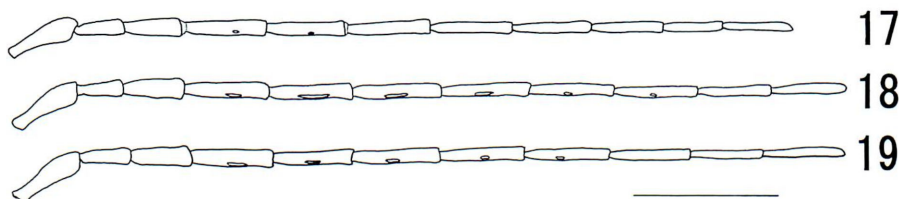
Pronotum subquadrate, faintly dilated posteriad, 0.87 times (in the holotype; range 0.81–0.95) as wide as head, 1.03 (1.00–1.05) times as long as wide; anterior and



Figs. 12-16. *Lycocerus satoi* OKUSHIMA, sp. nov. — 12-14, Male genitalia (12, ventral view; 13, lateral view; 14, dorsal view); 15, 8th abdominal sternite in female; 16, lateral view of female genitalia. (Scale: 1.0 mm for Figs. 12-15, 0.5 mm for Fig. 16.)

posterior margins weakly arcuate; lateral margins feebly sinuate; anterior angles rounded; posterior angles obtuse; disc convex, particularly so in the postero-lateral areas, strongly depressed along the posterior margin, antero-lateral areas hollowed; medio-longitudinal furrow faintly traceable only in posterior area; surface smooth with faint lustre. Scutellum triangular with blunt apex.

Elytra conjointly 1.65 (1.55-1.71) times as wide as pronotum, 3.02 (2.79-3.22)



Figs. 17-19. Dorsal views of right antennae in male. — 17, *Lycocerus masatakai* OKUSHIMA, sp. nov.; 18, *L. flavimarginalis* OKUSHIMA, sp. nov.; 19, *L. satoi* OKUSHIMA, sp. nov. (Scale: 2.0 mm.)

times as long as wide, the sides subparallel though slightly convex around basal fourth; dorsum closely and rugosely punctate, though weakly in basal part; each elytron provided with two vague costae.

Legs considerably slender; each femur mostly straight; each tibia mostly straight though feebly arcuate in basal part in fore and hind legs, and feebly arcuate throughout in middle legs; all claws simple.

Male genitalia:— Ventral process of each paramere stout at base and tapered, the apical portion forming a hook with pointed tip inwards; each dorsal plate rounded at the apex, inner margin gently arcuate, outer margin obtusely projected with inner protuberance at the middle. Each laterophysis tapered and a little sinuate, slightly curved dorsad with its pointed tip towards the protuberance on the inner side of dorsal plate. Median lobe provided with a large process dorsally at the apex, with the apex towards apices of dorsal plates. Inner sac lengthened and swollen ventro-posteriorly, as long as tegmen (Figs. 12-14).

Length of body: 13.6 mm (in the holotype; range 9.35-13.6, measured from the anterior margin of clypeus to the apices of elytra); breadth of body: 3.30 (2.40-3.30) mm (measured at the widest part of conjoint elytra).

**F e m a l e.** Body somewhat longer and wider than in the male. Eyes not so large as in the male, ratio of the diameter of an eye to interocular space 1 : 2.1. Antennae a little shorter than in the male and lacking groove on each segment. Pronotum 0.93-1.00 times as wide as head, 0.89-0.98 times as long as wide. Elytra conjointly 1.33-1.61 times as wide as pronotum, 2.76-3.40 times as long as wide. Each outer claw of fore and middle legs provided with a digitiform tooth at the base, the other claws simple. Eighth abdominal sternite sinuate at terminal margin with its sides forming subtriangular lateral lobes (Fig. 15).

Female genitalia:— Vagina extending dorso-apicad. Diverticulum and spermathecal duct arising from near ventro-apical portion of vagina. Diverticulum moderately thin, long and spiral except for basal part; spermathecal duct short; spermatheca somewhat stout at the base, and provided with a very long and thin spiral tube, which is about 1.5 times as long as diverticulum; accessory gland moderately thin and as long as spiral tube of spermatheca (Fig. 16).

Length of body: 12.3-15.3 mm; breadth of body: 2.80-3.85 mm.

*Notes.* This new species somewhat resembles the two preceding new species, *L. masatakai* OKUSHIMA, sp. nov. and *L. flavimarginalis* OKUSHIMA, sp. nov., from Taiwan, but can easily be distinguished from them by the patterns of dark coloured markings on head and pronotum, which are reduced in basal area of head but extended to almost whole of anterior area in pronotum. Moreover, it can be distinguished from the other two by the structure of male genitalia, particularly well developed laterophysis with apex extending beyond the apex of ventral process. In addition, females can be distinguished from that of *L. masatakai* by the terminal margin of 8th abdominal sternite which is well sinuate in middle area.

*Etymology.* The specific name is dedicated to the late Dr. Masataka SATÔ who rendered many services to the taxonomic study on the Asian Cantharidae.

## 要 約

奥島雄一：台湾産ジョウカイボン属の金属光沢をもつ3新種。—— OKUSHIMA (2005) によって、ジョウカイボン属と近縁属の属および亜属の整理が行われた結果、台湾からはこれまでに30種の本属の種が知られていることになっていた。筆者は故佐藤正孝博士のご協力のもとに台湾産の本属の標本を収集して検討した結果、上翅に金属光沢をもつ3新種を認めたので、それぞれ *Lycocerus masatakai* OKUSHIMA, sp. nov., *L. flavimarginalis* OKUSHIMA, sp. nov., *L. satoi* OKUSHIMA, sp. nov. として命名記載した。これらのうち、2種には台湾の昆虫学の発展やアジアのジョウカイボン科に関する分類学的研究に多大な貢献をされ、惜しまれつつ不運な病に倒れた故佐藤正孝博士に献名したものである。

*Lycocerus masatakai* と *L. flavimarginalis* はたがいに酷似しているが、後者の方が雄の触角の溝の長さが明らかに長いこと、雄交尾器の腹面突起がやや細長く伸び、側突起が太いことなどで区別できる。*L. satoi* はいくぶん他の2新種に似ているが、頭部の黒紋が基部で消えることや前胸背板の暗色紋が前方部に大きく広がることで、容易に区別することができるし、雄交尾器にも違いが認められる。

今回記載した3種とこれまでにすでに台湾から知られていた *L. fainanus* (PIC) および *L. taoyuanus* (WITTMER) はすべて雄交尾器中央片に顕著な突起をもつことから、*L. vitellinus* 種群に属するものと考えられるが、いずれの種も大型で上翅に金属光沢を有するなどこれまでに知られている亜群にない特異な特徴を備えているため、新たに *L. fainanus* 亜群を提唱して、これら5種を含めた。

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