

## Four New Scarabaeid Beetles (Coleoptera, Scarabaeidae) from Taiwan

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**Abstract** Four new scarabaeid beetles, *Holotrichia guangaoshana* sp. nov., *Holotrichia herwangshana* sp. nov., *Taiwanotrichia longicornis* gen. et sp. nov., and *Platysodes formosanus* sp. nov. are described from Taiwan. *Taiwanotrichia* belongs to the tribe Ryzotrogini, and seems to have a relationship with *Hilyotrogus* or *Toxospatinus*. *Platysodes* is newly recorded from Taiwan.

In this paper the author will describe four new species of scarabaeid beetles from Taiwan, of which one genus is new to science and another genus is newly recorded from Taiwan. All the holotypes designated in this study are preserved in the collection of the author.

Before going further the author wishes to express his sincere appreciation to Messrs. H. SAKAINO and J. LO for their kindness in entrusting those valuable specimens to the author for investigation.

### *Holotrichia guandaoshana* H. KOBAYASHI, sp. nov.

(Figs. 1, 5)

Body almost entirely black, antennal club dark blackish brown to black. Surface of body opaque, opalescent in certain light, with anterior margin of clypeus, antennal footstalk and legs shining, abdominal sternites feebly shining (except for the sides of the 5th).

Clypeus subtrapezoidal, roundly emarginate at anterior margin, very densely punctate. Frons densely punctate, somewhat large at middle, fronto-clypeal suture bisinuate. Eyes very small, their interspace being about one-seventh as broad as frons in both sexes. Antennae 10-segmented, with club as long as 2nd to 6th segments together in male, a little shorter in female.

Pronotum 2.1 times as broad as its length, densely and longitudinally punctate; lateral margins gently curved at the middle, narrowed to front, subparallel in basal half, sparsely crenate, and bearing short hairs; anterior margin bordered with a row of punctures, anterior angles sharp and subrectangular, posterior ones rounded. Scutellum broad triangular, very sparsely punctate near anterior margin, almost impunctate in other places. Elytra 4.3 times as long as length of pronotum, each with a sutural and four discal costae, sutural costa evident, broad, inconspicuously

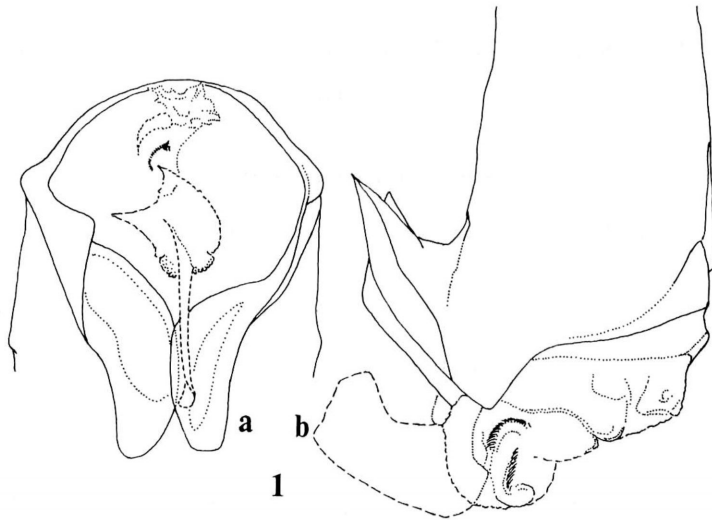


Fig. 1. Male genitalia of *Holotrichia guandaoshana* sp. nov.; a, frontal view; b, lateral view.

punctate, 1st costa broadened posteriorly and touching sutural one, intervals rather sparsely punctate.

Pygidium rather densely punctate, rather convex near apex in male, feebly and uniformly convex in female, with apex somewhat truncate. Ventral surface of thorax densely covered with long hairs. Abdominal sternites, densely and finely punctate, bearing minute hairs (sides of 2nd abdominal sternite with rather long hairs, and opaque parts of the 5th with long hairs). Anterior tibiae tridentate. Posterior femora 4.5 times as long as its breadth. Posterior tibia without complete outer ridge, terminal spurs slender, outer one longer than basal tarsal segment, which is as long as the 2nd.

Length: 18.5–22.0 mm; breadth: 10.0–12.0 mm.

Holotype: ♂, Guandaoshan, Nantou Hsien, 17–IV–1986, J. LO leg. Paratypes: 3 ♂♂, 1 ♀, same data as for the holotype.

*Distribution.* Taiwan.

This species somewhat resembles *H. shibatai* NOMURA, 1977, but the abdomen is shining, the pronotum bears longitudinal punctures and the pygidium is somewhat truncate at the apex.

***Holotrichia herwangshana* H. KOBAYASHI, sp. nov.**

(Figs. 2, 6)

Body reddish brown to light reddish brown, pronotum and scutellum somewhat dark colored, antennal club yellowish brown. Surface of body shining.

Clypeus weakly bilobate, margins bordered, surface coarsely and shallowly

punctate. Frons convex, rather densely punctate, fronto-clypeal suture widely arched, almost straight at middle. Vertex rather sparsely punctate, almost smooth near posterior margin. Antennae 10-segmented, club one-third as broad as its length, longer than total length of 2nd to 7th segments in male.

Pronotum 1.9 times as broad as its length, finely and rather sparsely punctate, with a feeble longitudinal line from apex to base; anterior margin bordered, lateral margins curved behind middle, gradually narrowed to front and base, broadly crenate, fringed with sparse hairs; anterior angles sharp and subrectangular, posterior ones somewhat angulate. Scutellum broader than its length, smooth and almost impunctate. Elytra each with a sutural and four discal costae, 1st costa broadened posteriorly and touching sutural one, two outer costae very fine and inconspicuous, intervals sparsely and finely punctate.

Pygidium gently convex, finely and sparsely punctate, each puncture with a minute hair. Ventral surface of thorax densely covered with yellowish brown, long tawny hairs. Abdominal sternites finely, very sparsely punctate, sides of 2nd sternite bearing short hairs, sides of the 5th bearing long hairs, the other parts almost bare; anal sternite feebly, transversely excavated in male. Anterior tibiae slender and tridentate. Posterior femora one-fourth as broad as its length, bearing long tawny hairs in basal half and near posterior margin. Posterior tibiae with terminal spurs slender, longer one as long as basal tarsal segment, which is shorter than the 2nd.

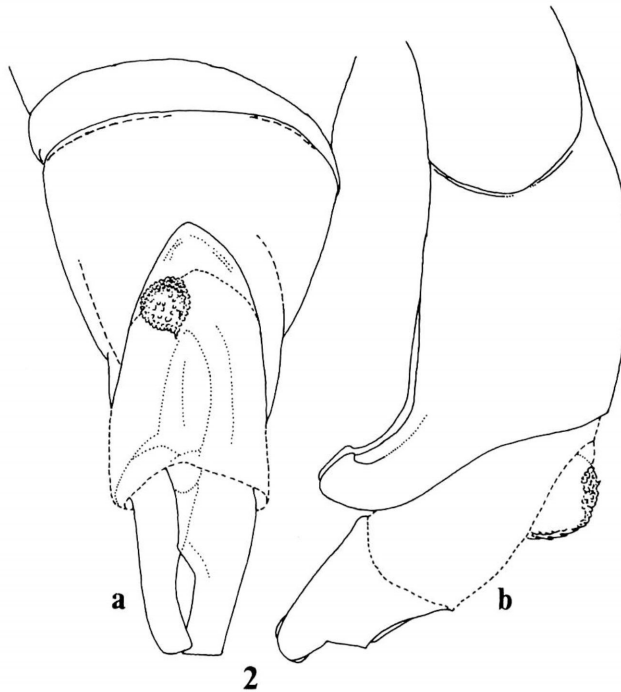


Fig. 2. Male genitalia of *Holotrichia herwangshana* sp. nov.; a, frontal view; b, lateral view.

Claws curved near apices, nearly straight at middle, each with a strong vertical tooth beneath.

Length: 14.0–17.0 mm; breadth: 10.5–12.0 mm.

Holotype: ♂, Herwangshan, Nantou Hsien, 14–VI–1987, J. LO leg. Paratypes: 6 ♂♂, same data as for the holotype.

*Distribution.* Taiwan.

This species is somewhat allied to *H. mizusawai* H. KOBAYASHI, 1986, but the body surface is more strongly shining, the pronotum is finely and rather sparsely punctate, and the scutellum is almost impunctate.

*Taiwanotrichia* H. KOBAYASHI, gen. nov.

Ventral and dorsal surfaces with rather strong lustre. Clypeus semicircular, anterior margin not sinuate. Antennae 10-segmented with club composed of 7 lamellae, more than 3 times as long as footstalk in male. Legs slender, anterior tibiae tridentate, with a terminal spur; claws curved near apices, nearly straight at middle, each with a strong vertical tooth beneath.

Type species: *Taiwanotrichia longicornis* H. KOBAYASHI, sp. nov.

This genus may be separated from *Hilyotrogus* FAIRMAIRE by strong vertical tooth of each claw, and from *Toxospatinus* FAIRMAIRE by having a terminal spur on anterior tibia.

*Taiwanotrichia longicornis* H. KOBAYASHI, sp. nov.

(Figs. 3, 7)

Form elongate, with rather strong lustre except for antennae. Body yellowish brown to light brown; head blackish brown; pronotum of the same color as ventral surface, with M-shaped blackish brown maculation on disk; each elytron of the same color as pronotum, with a longitudinal blackish brown line extending from shoulder to basal third, suture and margins of scutellum blackish brown; posterior margin of each abdominal sternite blackish; legs light reddish brown, with margins of femora and tibiae dark colored, tarsi blackish brown; antennae yellowish brown.

Clypeus semicircular, weakly bordered, rather sparsely punctate, with erect sparse hairs on disk, and with fronto-clypeal suture feebly bilobate. Frons coarsely and rather sparsely punctate, feebly convex in male; vertex somewhat sparsely punctate. Eyes large and prominent, their interspace being one-third as broad as frons in male. Antennae 10-segmented with club composed of 7 lamellae, more than 3 times as long as footstalk in male. Terminal segment of maxillary palpi pear-shaped, as long as preceding two segments together. Labrum semicircular, anterior margin noticeably raised.

Pronotum 1.8 times as broad as its length, with broadest point across the middle; anterior margin bordered, lateral ones not crenate, sides of anterior margin and lateral

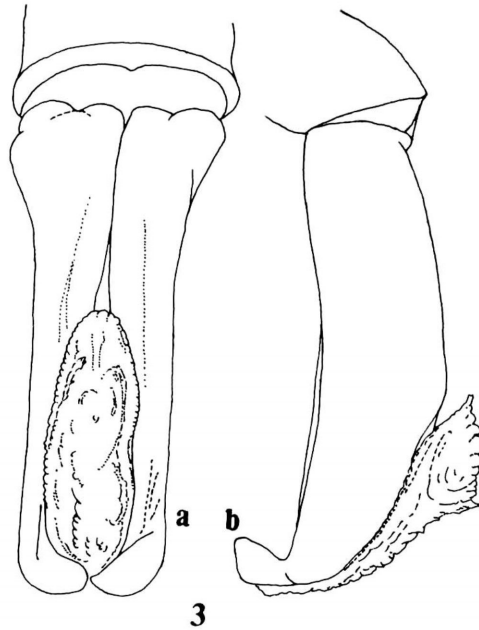


Fig. 3. Male genitalia of *Taiwanotrichia longicornis* gen. and sp. nov.; a, frontal view; b, lateral view.

ones bearing long hairs, middle of anterior margin sparsely with short hairs, anterior and posterior angles obtuse; surface sparsely and finely punctate. Scutellum broader than long, almost flattened and impunctate. Elytra 3.8 times as broad as the length of pronotum, each elytron with a sutural and two visible feeble costae, intervals sparsely and finely punctate (somewhat partially coriaceous); lateral sides very sparsely with short hairs.

Pygidium broader than long, somewhat truncate at apex, sparsely punctate, in male weakly convex. Ventral surface of thorax rather densely clothed with long tawny hairs. Abdominal sternites rather sparsely and minutely punctate at sides, very sparsely and inconspicuously at middle, each puncture with a minute hair (sides of 5th sternite bearing long hairs); anal sternite almost flattened, with a feeble longitudinal impression at middle. Legs slender, anterior tibiae tridentate, with a rather short terminal spur, which is as long as basal tarsal segment. Posterior femora elliptical, each three times as long as its breadth, very sparsely punctate, bearing long sparse tawny hairs. Posterior tibiae each with a complete outer ridge, terminal spurs slender, longer one a little longer than basal tarsal segment, which is evidently shorter than the 2nd. Claws curved at apices nearly straight at middle, each with a strong vertical tooth beneath.

Length: 13.0 mm; breadth: 6.0 mm.

Holotype: ♂, Bandai, near Wushe, Nantou Hsien, 23-XI-1985, J. Lo leg.

*Distribution.* Taiwan.

*Platysodes formosanus* H. KOBAYASHI, sp. nov.

(Figs. 4, 8)

Form elongate and smooth, flat above. Body entirely black, shining above and beneath except for pygidium (a small white maculation near lateral margin at apical two-thirds of each elytron), almost bare.

Clypeus short, three times as broad as its length, anterior margin stout and reflexed, almost straight, sparsely and minutely punctate behind anterior margin, impunctate at middle, with a wide elevation at middle, fronto-clypeal suture vanished. Frons almost impunctate, with two round depressions at sides, vertex impunctate. Eyes rather small, their interspace one-seventh as broad as frons in male. Antennae 10-segmented with club composed of 3 lamellae, as long as 2nd to 7th segments together in male.

Pronotum 1.5 times as broad as its length, lateral margins curved behind middle, anterior angles obtusely angulate, posterior ones rounded, posterior margin distinctly excised before scutellum; surface very sparsely and inconspicuously punctulate (somewhat densely aciculate near anterior angles). Scutellum triangular, somewhat longer than its breadth, densely and somewhat reticulately foveolate in basal part, glabrous in other places. Elytra somewhat broader at shoulders than prothorax, gently sinuate

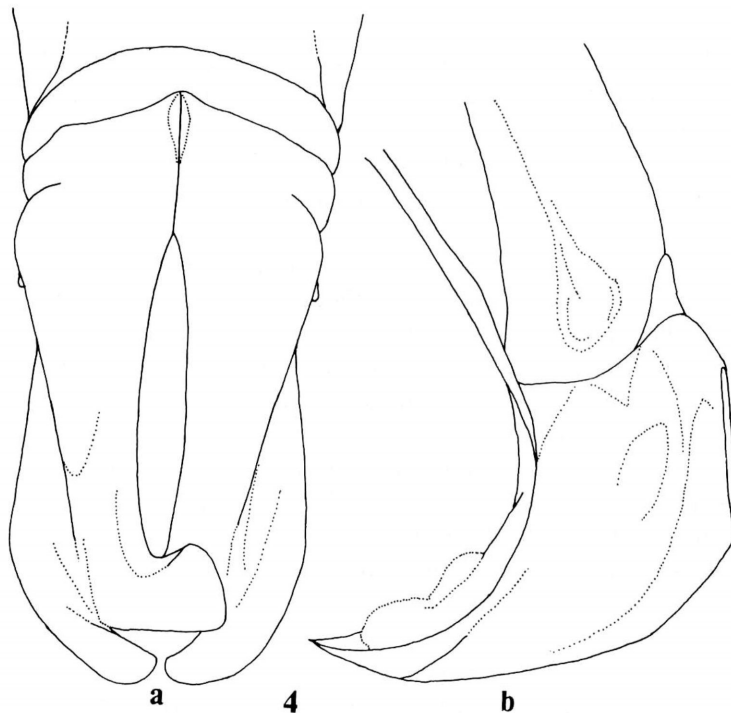
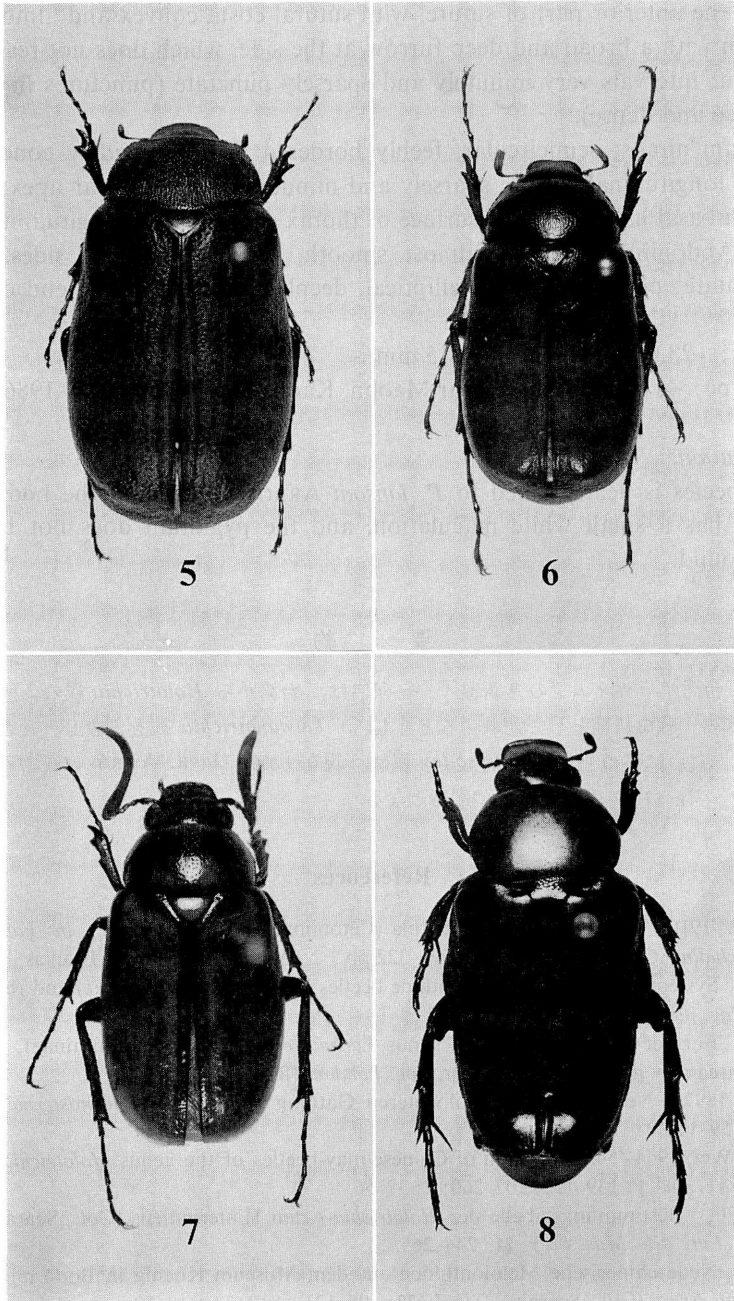


Fig. 4. Male genitalia of *Platysodes formosanus* sp. nov.; a, frontal view; b, lateral view.



Figs. 5-8. — 5. *Holotrichia guandaoshana* sp. nov. — 6. *Holotrichia herwangshana* sp. nov.  
— 7. *Taiwanotrichia longicornis* gen. and sp. nov. — 8. *Platysodes formosanus* sp. nov.

at the lateral margins and roundly narrowed to their extremities, with a narrow depression at the anterior part of suture, with sutural costa convex and almost smooth; each elytron with a broad and deep furrow at the side, which does not reach front or hind margin; intervals very minutely and sparsely punctate (punctures in the furrow rather coarse and dense).

Pygidium almost semicircular, feebly bordered at apex, widely concave except for median longitudinal carina, sparsely and minutely punctate near apex, somewhat verrucose in basal half. Ventral surface of thorax coarsely and longitudinally foveate at sides. Abdominal sternites almost smooth, feebly rugose at sides. Anterior tibiae bidentate; posterior femora elliptical, deeply excised near the end of posterior margin.

Length: 28.0 mm; breadth: 11.5 mm.

Holotype: ♂, Nanfengshan, near Maolin, Kaohsiung Hsien, 10-V-1986, Y. CHING leg.

*Distribution.* Taiwan.

This species is nearly allied to *P. jansoni* ARROW, 1925, but the body is larger, the elytron has a small white maculation, and the pygidium does not bear strong carina all round.

## 要 約

小林裕和: 台湾産コガネムシの4新種。——筆者は、台湾から *Holotrichia* 属の2種、ならびに *Platysodes* 属の1種を新種として記載するとともに、*Taiwanotrichia* 属を創設し、それに含まれる1新種を記載した。このうちで、*Platysodes* 属は、現在までに Java, Assam にそれぞれ1種ずつが知られるのみで、台湾からは初めての記録となる。

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*Elytra*, Tokyo, **18** (1): 81, May 15, 1990

## Synonymic Notes on *Copelatus* Species (Dytiscidae)

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### *Copelatus andamanicus* RÉGIMBART

- Copelatus andamanicus* RÉGIMBART, 1899, Anns. Soc. ent. France, **68**: 302 [Iles Anadaman].
- Copelatus subfasciatus* ZIMMERMANN, 1919, Ent. Mitt., **8**: 76 [Formosa]. *Syn. nov.*
- Copelatus socienus ryukyuensis* M. SATÔ, 1961, Akitu, Kyoto, **10**: 8 [Amami-Ôshima].
- Copelatus tokaraensis* NAKANE, 1963, Fragm. coleopt., (6): 25 [Takara-jima].

This blackish species was recorded from the Ryukyus by SATÔ (1983) under the name *C. andamanicus*. On the other hand, NAKANE (1986, 1989) adopted the name *C. subfasciatus* for it for the reason that the body colour of *andamanicus* was said in the original description to be "rufo-ferrugineus." It is true that RÉGIMBART's type specimen is rather light-coloured, but this is most probably due to its relative immaturity. NAKANE does not seem to have been fully aware of the fact that colour changes with age in *Copelatus* as in many dytiscid beetles. Though I already suspected the above synonymy when preparing my 1983 and 1985 papers, I refrained from taking the action, because no Taiwanese specimens were available at that time.

*Specimens examined.* 1 ♂ (lectotype), Andaman Islands (Mus. Hist. nat., Paris); 9 exs., Tasi-tie-ku, near Liu-kuei, S. Taiwan, 2–IX–1986, K. BABA leg.

*Distribution.* Japan (Kyushu), Is. Yaku-shima, Ryukyus, Taiwan, Borneo, Andaman Is.

### *Copelatus nakamurai* GUÉORGUIEV

- Copelatus nakamurai* GUÉORGUIEV, 1970, Bull. Inst. Zool. Mus., Sofia, **32**: 258, figs. 3–4 [Tokyo].
- Copelatus hasegawai* M. SATÔ, 1988, *Elytra*, Tokyo, **16**: 123, figs. 1–4 [Saitama Pref.]. *Syn. nov.*

Unfortunately, *C. hasegawai* is doubtless identical with *C. nakamurai*, so that the former falls in a junior synonym of the latter. This was already suggested by NAKANE (1990).

*Distribution.* Japan (Honshu).

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