

Notes on the Taiwanese Buprestidae (II)  
A Revision of the Genus *Nalanda* THÉRY, 1904  
from Taiwan  
(Coleoptera, Buprestidae)

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**Abstract** A revisional study of the Taiwanese species of the buprestid genus *Nalanda* THÉRY, 1904 is presented. Eleven new species of the genus are described under the names of *kurosawana*, *bilyi*, *pentacallosa*, *takashii*, *suzukii*, *hideoi*, *komiyai*, *largerstraemiae*, *niisatoi*, *toyamai* and *shimomurai*, and *N. rutilicollis* is newly recorded from Taiwan. The genus *Lakhonia* DESCARPENTRIES et VILLIERS, 1968 and *Melicoraebus* THÉRY, 1932 are synonymized under the genus *Nalanda*.

Up to the present, Taiwanese buprestid beetles have been studied by many authors and a large number of species were recorded from Taiwan. In the genus *Nalanda*, however, only two species, *cupricollis* (SAUNDERS, 1868) (= *Meliboeus saundersi* KERREMANS, 1892) and *formosana* (OBENBERGER, 1944) have hitherto known. The former species, *cupricollis* was recorded from Taiwan by KERREMANS (1912), but his material, which we have studied, in reality represents a new species described under the name of *N. largerstraemiae* in the following lines. We agree with the opinion of DESCARPENTRIES and VILLIERS (1968) in excluding *N. cupricollis* from the Taiwanese fauna.

In examining many specimens of the genus *Nalanda* from Taiwan, we were able

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to recognize thirteen species; eleven new species, one newly recorded and one hitherto known from the island. Redescriptions of the genus *Nalanda* and *N. formosana*, descriptions of new species and a key to the Taiwanese species are included in this paper. The holotypes and several paratypes designated in this study are deposited in the National Science Museum (Nat. Hist.), Tokyo, and some paratypes are deposited in the British Museum (Nat. Hist.), London, Institut für Pflanzenschutzforschung, Akademie der Landwirtschaftswissenschaften der Deutschen Demokratischen Republik, Eberswalde, National Museum, Praha and the collection of Prof. G. H. NELSON, Pomona, California.

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### Genus *Nalanda* THÉRY, 1904

*Nalanda* THÉRY, 1904, Ann. Soc. ent. Belg., 48: 160.

*Neosambus* FISHER, 1921, Philip. J. Sci., 18: 350.

*Melicoraebus* THÉRY, 1932, Bull. Soc. ent. Fr., 37: 96-97. (Syn. nov.)

*Lakhonia* DESCARPENTRIES et VILLIERS, 1968, Ann. Soc. ent. Fr., 4(4): 992. (Syn. nov.)

Type species: *Nalanda horni* THÉRY, 1904, by monotypy.

The original description given by A. THÉRY goes as follows:

Front bombé sans impression, cavités antennaires grandes, arrondies, normales, antennes médiocres s'insérant dans deux profonds sillons situés sur les bords mêmes du prothorax. Prothorax rétréci en avant, très bombé au milieu, avec un lobe tronqué à la base. Ecusson assez grand en triangle régulier. Elytres assez allongés, atténués postérieurement un peu cunéiformes.

Ce genre, voisin des *Meliboeus*, s'en distingue par la gouttière où viennent se longer les antennes; plusieurs espèces indo-malaises rentrent évidemment dans cette

coupe; les espèces que je connais ont leur ponctuation remplacée sur tout le dessus par des stries transversales nettes et profondes.

*Redescription*: Body elongate-ovate, convex.

Head convex, sometimes with more or less distinct median groove; vertex rugoso-punctate, simply convex or with a feeble gibbosity on each side of median groove; frons subquadrate, with apical margin distinctly arcuate; eyes elliptical or oval, subparallel with each other in frontal view; clypeal suture absent; clypeus variable, with elliptical or oblique depression between antennal cavities, anterior margin arcuately emarginate; antennae short, compact, serrate from fifth segment, inserted in a deep prosternal groove in repose, with first and second segments stout, second longer than third, fourth subequal in length or shorter than third.

Pronotum transverse, convex, sometimes gibbose on middle and each side; marginal carina absent; anterior margin sinuate or arcuate; posetior margin strongly bisinuate or trisinuate, sparsely rugoso-punctate, concave along anterior and lateral margins; surface rugoso-punctate, the rugosities transverse, sparsely clothed with setae; scutellum longer than wide, subtrapezoidal in basal portion, fairly acutely triangular, laterally arcuately emarginate in apical portion and more or less dentate in middle.

Elytra longitudinal, punctate, sometimes ornamented with pubescent designs, with each apex rounded and serrate; sutural margins elevated; disc almost uniformly longitudinally elevated, rugoso-punctate. Pygidium triangular, with a longitudinal carina; laterally arcuately emarginate in apical portion, more or less dentate in middle.

Ventral surface imbricate or rugoso-punctate and clothed with setae. Prosternum very short; anterior margin subtruncate or feebly emarginate; prosternal process prolonged. Mesosternum with lateral branches, flat between anterior and middle coxae. Posterior coxae dilated antero-laterally with anterior margin distinctly sinuate and posterior margin almost emarginate. Legs short; femora and tibiae distinctly arcuate; tarsi short and compact; claws simply cleft.

Range: Algeria, Morocco, Spain, France, Italy, Switzerland, Austria, Czechoslovakia, Yugoslavia, Greece, Turkey, Cyprus, USSR, Korea, Japan, Taiwan, China, Vietnam, Laos, Thailand, Burma, India, Ceylon, Philippines, Malaysia, Indonesia.

Remarks. Based on a single specimen collected by W. HORN at Nalanda, Ceylon, *Nalanda horni* was described by THÉRY in 1904 as the type species of the genus *Nalanda*. In 1921, FISHER described the genus *Neosambus* from the Philippines, but KUROSAWA (1970) regarded this genus as a synonym of *Nalanda*. In 1986, M. TÔYAMA transferred five species and one species, of which they were described as *Neosambus*, to *Nalanda* and *Sambus* DEYROLLE, 1864, respectively.

In this paper, thirteen species are recorded from Taiwan. Of these, five species demonstrate the characteristics of the genus *Lakhonia*, i.e., the deep longitudinal

groove on the vertex and three or five gibbosities on the pronotum. In our opinion, however, these characteristics are not useful at the generic level. One species demonstrates the characteristic of the genus *Melicoraebus*, which is distinguished from *Nalanda* only in the coloration of the elytral setae. It may be better to treat the genera, *Lakhonia* and *Melicoraebus*, as synonyms of *Nalanda*.

The genus *Nalanda* is somewhat allied to the genus *Meliboeus* LAPORTE et GORY, 1835, but is distinctly different from the latter. The former has a pair of lateral grooves on the pronotum, whereas *Meliboeus* lacks such grooves.

### Key to the species of the genus *Nalanda* from Taiwan

1. Vertex with two distinct gibbosities ..... 2
- Vertex fairly convex ..... 11
2. Vertex with a deep longitudinal groove ..... 3
- Vertex with an obsolete longitudinal groove ..... 7
3. Vertex with a horn-like process formed of setae on each callosity; pygidium trapezoidal ..... *N. kurosawana* sp. nov.
- Vertex without horn-like process; pygidium almost triangular ..... 4
4. Pygidium with one large and two small but distinct, somewhat hook-shaped spines on each side ..... *N. takashii* sp. nov.
- Pygidium with one or two distinct spines on each side ..... 5
5. Vertex with a feeble gibbosity on each side of median groove; elytra lustrous blackish brown except for apical parts lustreless purple ..... *N. bilyi* sp. nov.
- Vertex with a strong gibbosity on each side of median groove; elytra brightly black or deeply cyaneous ..... 6
6. Antennae with the second segment about 2.0 times as long as the third; elytra brightly black with violaceous tinge ..... *N. pentacallosa* sp. nov.
- Antennae with the second segment about 1.5 times as long as the third; elytra deeply cyaneous with apical parts purple ..... *N. suzukii* sp. nov.
7. Vertex concentrically rugoso-punctate ..... *N. formosana* (OBENBERGER, 1944)
- Vertex longitudinally rugoso-punctate or with an obsolete depression at the middle ..... 8
8. Eye moderately convex ..... *N. komiyai* sp. nov.
- Eye strongly convex ..... 9
9. Pygidium with apex finely serrate ..... *N. lagerstraemiae* sp. nov.
- Pygidium with apex distinctly spiniferous ..... 10
10. Pronotum strongly bisinuate in base; elytra brightly cyaneous and sometimes greenish tinge ..... *N. hideoi* sp. nov.
- Pronotum strongly trisinuate in base; elytra brightly black ..... *N. niisatoi* sp. nov.
11. Eye strongly convex ..... *N. toyamai* sp. nov.
- Eye moderately convex ..... 12
12. Pronotum distinctly angulate at the anterior and posterior corners; elytra cupreous ..... *N. shimomurai* sp. nov.
- Pronotum distinctly rounded, not angulate at the anterior and posterior corners; elytra greenish blue ..... *N. rutilicollis* (OBENBERGER, 1914)

*Nalanda kurosawana* sp. nov.

(Figs. 1, 15, 29)

Male. Body fairly robust, longitudinally convex; head and pronotum golden-bronzy with violaceous tinge; scutellum golden-bronzy; elytra violaceo-black in basal four-fifths, the rest cupreo-violaceous with apical half golden-bronzy tinge. Ventral surface dark violaceo-cupreous; antennae and legs violaceo-black with greenish tinge.

Head trapezoidal, convex forward, with a deep median groove running from vertex to center of frons; vertex with a conical horn-like process formed of long golden-bronzy setae on each side of median groove; frons subquadrate, with apical margin distinctly arcuate, densely clothed with short bronzy setae on the upper half and with long white setae on the lower half; eyes ovate, convergent below; clypeus transverse, about 1.2 times as wide as long between antennal cavities, foveate, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate; antennae short and compact, with first and second segments stout, second longer than third, fourth shorter than third, fifth to terminal serrate.

Pronotum transverse, about 1.7 times as wide as long, widest at basal third, lateral margin sinuate near base and arcuate from apical third to apex; anterior angles arcuate in lateral view; basal margin distinctly trisinate; posterior angles narrowly rounded; disc convex at middle, with three gibbosities, the largest one on the middle and smaller one on each side, concentrically rugoso-punctate, concave along anterior and lateral margin; surface rugoso-punctate, the rugosities transverse, densely clothed with long bronzy-white setae. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 1.8 times as long as wide, about 3.2 times as long as pronotum, widest at apical two-fifths; sides expanded behind humeri, gradually narrowed to basal third, arcuately broadly expanded behind the middle, then sinuately narrowed toward apices; humeri rounded; disc deeply transversely punctate on basal fifth, sparsely, deeply and rugose-ly so on the rest, distinctly callous near apices. Pygidium trapezoidal, with a longitudinal carina; apex finely serrate.

Prosternum strongly rugoso-punctate, clothed with short golden-bronzy setae; prosternal process prolonged posteriorly, strongly punctate. Meso- and metasterna densely imbricate. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, densely clothed with long bronzy-white setae. Legs short, with tibiae distinctly arcuate. Claws

simply cleft.

Length: 3.7 mm; width: 1.4 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 4. IV. 1977, W. SUZUKI leg.

Remarks. This unique species is dedicated to Dr. YOSHIHIKO KUROSAWA, former head of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, who has given us helpful advices for a long time.

*Nalanda bilyi* sp. nov.

(Figs. 2, 16, 30)

Male. Body fairly elongate, longitudinally convex; head, pronotum and elytra lustrous blackish brown, except for apical parts of lustreless purple. Scutellum, ventral surface and legs bronzy.

Head trapezoidal, convex forward, with a deep median groove running from vertex to center of frons; vertex with a feeble gibbosity on each side of median groove, concentrically rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, transversely rugoso-punctate, sparsely clothed with yellow-greyish setae; eyes elliptical, convergent below in frontal view; clypeus transverse, about 1.2 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate, densely clothed with short yellow-greyish setae; antennae short and compact with first and second segments stout, second 1.3 times as long as third, fourth shorter than third, fifth to terminal serrate.

Pronotum transverse, about 1.8 times as wide as long, widest at middle, laterally feebly sinuate near base, arcuate from middle to apex; anterior angles arcuate in lateral view; basal margin distinctly bisinuate; posterior angles narrowly rounded; disc rather convex in middle, with three gibbosities, the largest one on middle and smaller one on each side, concentrically rugoso-punctate, concave along anterior and lateral margin; surface rugoso-punctate, the rugosities transverse and finely clothed with short yellow-greyish setae on both sides. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 2.0 times as long as wide, about 3.6 times as long as pronotum, widest at apical half; sides expanded behind humeri, gradually narrowed toward basal third, arcuately broadly expanded behind the middle, feebly arcuately narrowed to apical ninth, then run parallel with each other to apices; humeri rounded; disc narrowly shallowly depressed at each humerus, with a broadly rounded but shallow depression at apical half; surface strongly transversely rugoso-punctate on basal half except on sutural depression that is imbricate punctate, lustrous on

apical half, densely clothed with a gauzy-punctate mat on posterior one-fifth. Pygidium triangular with a longitudinal carina; apex armed with distinct spines.

Prosternum imbricate-punctate, sparsely clothed with short yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, densely clothed with long yellow-greyish setae. Meso- and metasterna densely imbricate.

Abdomen also imbricate, with anal abdominal sternite bisinuate at apex, sparsely clothed with short yellow-greyish setae. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 3.3-4.1 mm; width; 1.2-1.5 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 20. III. 1983, Y. KUSAKABE leg. Paratypes: 1 ex., near Ssuling, Taoyuan Hsien, 2. IV. 1981, T. SHIMOMURA leg.; 1 ex., Nanshanchi, Nantou Hsien, 29. IV. 1976, K. AKIYAMA leg.; 1 ex., ditto, 26. IV. 1978, T. NIISATO leg.; 1 ex., ditto, 16. III. 1979, A. SHINOHARA leg.; 1 ex., Dingxinfu, near Liukuei, Kaohsiung Hsien, 20. III. 1978, T. NIISATO leg.; 2 exs., Mt. Nanfengshan, near Liukuei, Kaohsiung Hsien, 24. V. 1981, M. ITOH leg.; 2 exs., Taiwan, IV. 1965; 1 ex., Taiwan, V. 1966; 2 exs., Taiwan, V. 1973.

Remarks. This new species is allied to *N. kurosawana* sp. nov., but can be distinguished from it by the following characteristics: 1) head and pronotum lustrous blackish brown, while in *N. kurosawana*, they are golden-bronzy with violaceous tinge; 2) vertex without conical horn-like process formed of long golden-bronzy setae on each callosity that is a characteristic of *N. kurosawana*; 3) Pygidium triangular and its apical part armed with distinct spines, while in *N. kurosawana*, it is trapezoidal and its apical part finely serrate.

### *Nalanda pentacallosa* sp. nov.

(Figs. A, 3, 4, 17, 18, 31)

Male. Body fairly elongate, longitudinally convex; head dark bronzy; pronotum and elytra brightly black with violaceous tinge; apical parts of elytra narrowly purple. Ventral surface and legs bronzy; antennae cupreous.

Head trapezoidal, convex forward, with a deep median groove running from vertex to center of frons; vertex with a feeble gibbosity on each side of median groove, concentrically rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, sparsely clothed with long yellow-greyish setae; eyes elliptical, subparallel with each other in frontal view; clypeus transverse, about 1.2 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate; antennae short and compact, with first and second segments stout, second 2.0 times as long as third, fourth subequal to third, fifth to terminal serrate.

Pronotum transverse, about 1.5 times as wide as long, widest at

basal third, slightly rounded near base and laterally rounded from apical third to apex; anterior angles arcuate in lateral view; basal margin distinctly bisinuate; posterior angles narrowly pointed; disc convex with five gibbosities, the largest one on middle and smaller two on each side, concentrically rugoso-punctate, rugosities transverse. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 2.4 times as long as wide, about 3.6 times as long as pronotum, widest at basal four-sevenths; sides subparallel with each other in basal seventh, feebly gradually narrowed toward basal fourth, arcuately broadly expanded just before the middle, then arcuately narrowed toward apices; humeri rounded; disc transversely strongly rugoso-punctate, distinctly shallowly depressed at humeri and basal part along suture. Pygidium triangular with a longitudinal carina; apex armed with a large projection and two smaller but distinct spines on each side.

Prosternum rugoso-punctate, sparsely clothed with fine golden-bronzy setae; prosternal process prolonged posteriorly, densely clothed with long golden-bronzy setae. Meso- and metasterna densely imbricate. Abdomen also imbricate, with anal abdominal sternite rounded at apex, and scantily clothed with long golden-bronzy setae. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Female. Differs from male as follows: more robust body shape; pronotum with three gibbosities; pygidium with the apex armed with one distinct somewhat hook-shaped spine and five small denticles on each side.

Length: 3.1-4.4 mm; width: 1.0-1.8 mm.

Holotype: ♂, near Ssuling, Taoyuan Hsien, 21. III. 1982, T. SHIMOMURA leg.

Paratypes: 1 ex., same data as the holotype; 1 ex., ditto, 22. III. 1982, T. SHIMOMURA leg.; 2 exs., ditto, 7. IV. 1982, T. SHIMOMURA leg.; 1 ex., Mt. Rarashan, Taoyuan Hsien,

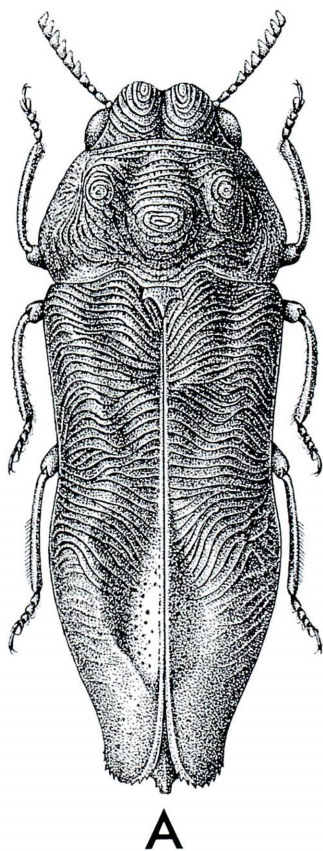


Fig. A. *Nalanda pentacallosa* sp. nov., ♀, dorsal view.

29. V. 1978, T. SHIMOMURA leg.; 1 ex., Nanshanchi, Nantou Hsien, 3-4. V. 1973, S. TSUYUKI leg.; 1 ex., Mt. Nanfengshan, near Liukuei, Kaohsiung Hsien, 21. III. 1981, T. SHIMOMURA leg.

Remarks. This new species is somewhat allied to *N. anticerugosa* (OBENBERGER, 1944), described from China (Kiang-ku, Prov. Kiang-si), but can be easily distinguished from it by the rugose ornamentation of elytra.

*Nalanda takashii* sp. nov.

(Figs. 5, 19)

Female. Body fairly elongate, longitudinally convex; head and pronotum golden-bronzy; elytra brightly cyaneous with greenish tinge. Ventral surface and legs aeneous with abdomen dark golden-bronzy.

Head trapezoidal, convex forward, with a deep median groove running from vertex to center of frons; vertex with a feeble gibbosity on each side of median groove, concentrically rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, sparsely clothed with long grey-whitish setae; eyes elliptical, subparallel with each other in frontal view; clypeus transverse, about 1.2 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate, sparsely clothed with short yellow-greyish setae; antennae short and compact, with first and second segments stout, second 1.5 times as long as third, fourth shorter than third, fifth to terminal serrate.

Pronotum transverse, about 1.6 times as wide as long, widest at basal third, feebly sinuate near base, laterally rounded from apical third to apex; anterior angles arcuate in lateral view; basal margin distinctly trisinuate; posterior angles narrowly rounded; disc convex in middle, with three gibbosities, the largest one on middle and smaller one on each side, concentrically rugoso-punctate, concave along anterior and lateral margin; surface rugoso-punctate, the rugosities transverse, sparsely clothed with short grey-whitish setae. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate, and more or less dentate in middle.

Elytra about 2.4 times as long as wide, about 4.0 times as long as pronotum, widest at apical three-sevenths; sides subparallel with each other in basal fifth, feebly broadly expanded just before the middle, then feebly arcuately narrowed toward apices; humeri rounded; disc uniformly widely longitudinally elevated, rugoso-punctate, shallowly depressed along the basal portion of suture except area near scutellum. Pygidium triangular, with a longitudinal carina, apex armed with a large median projection of which apical portion is finely serrate and one large and

two small but distinct somewhat hook-shaped spines on each side.

Prosternum rugoso-punctate, sparsely clothed with fine yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, densely clothed with long yellow-greyish setae. Meso- and metasterna densely imbricate. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, clothed with long yellow-whitish setae along apical margin. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 4.6 mm; width: 1.5 mm.

Holotype: ♀, Mt. Tattaka (=Sungkang), Nantou Hsien, 10. VI. 1965, T. SHIRÔZU leg.

Remarks. This new species is named in honor of Dr. TAKASHI SHIRÔZU, the Emeritus Professor of Kyushu University, Fukuoka.

*Nalanda suzukii* sp. nov.

(Figs. 6, 20)

Female. Body fairly elongate, longitudinally convex; head and pronotum golden bronzy; elytra deeply cyaneous with apical parts narrowly purple. Ventral surface and legs black with bronzy tinge.

Head trapezoidal, convex forward, with a deep median groove running from vertex to center of frons; vertex with a feeble gibbosity on each side of median groove, concentrically rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, sparsely clothed with long yellow-greyish setae; eyes elliptical, subparallel with each other in frontal view; clypeus transverse, 1.1 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate; antennae short and compact, with first and second segments stout, second 1.5 times as long as third, fourth subequal to third, fifth to terminal serrate.

Pronotum transverse, about 1.6 times as wide as long, widest at basal half, slightly sinuate near base, laterally slightly rounded from apical half to apex; anterior angles arcuate in lateral view; basal margin distinctly trisinate; posterior angles narrowly rounded; disc convex in middle, with three gibbosities, largest one on middle and smaller one on each side, rugoso-punctate, concave along anterior and lateral margins; surface rugoso-punctate, rugosities transverse. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 2.3 times as long as wide, 3.7 times as long as pronotum, widest at apical five-elevenths; sides expanded behind humeri, gradually narrowed toward basal two-fifths, arcuately broadly expanded behind the middle, then gradually narrowed toward apices; humeri rounded; disc

uniformly transversely rugoso-punctate at basal two-thirds, longitudinally narrowly depressed along sutural margin. Pygidium triangular, with a longitudinal carina; apex armed with distinct spines.

Prosternum rugoso-punctate, sparsely clothed with short yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, densely clothed with long yellow-greyish setae. Meso- and metasterna densely imbricate. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, sparsely clothed with short yellow-greyish setae. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 4.8-5.3 mm; width: 1.5-1.9 mm.

Holotype: ♀, Jiuyuehtan, Nantou Hsien, 6. IV. 1977, W. SUZUKI leg. Paratypes: 1 ♀, Nanshanchi, Nantou Hsien, 29. III. 1967, S. FUKUDA leg.; 1 ♀, Kaohsiung Hsien, 8. V. 1941, Y. YANO leg.; 2 exs., Taiwan, V. 1973.

Remarks. This new species is allied to *N. takashii* sp. nov., but can be easily distinguished from it by the following characteristics: 1) elytra deeply cyaneous with apical parts narrowly purple, while in *N. takashii*, they are brightly cyaneous with greenish tinge; 2) antennae with the fourth segment subequal to the third, while in *N. takashii*, the fourth is shorter than the third; 3) pygidium with the apex armed with distinct spines, of which the middle one is prominent and acute and two outer ones are smaller than the middle, while in *N. takashii*, the middle one is larger with apical part finely serrate, and one large and two small but distinct somewhat hook-shaped spines on each side.

### *Nalanda rutilicollis* (OBENBERGER, 1914)

(Figs. B, D, 7, 21, 32)

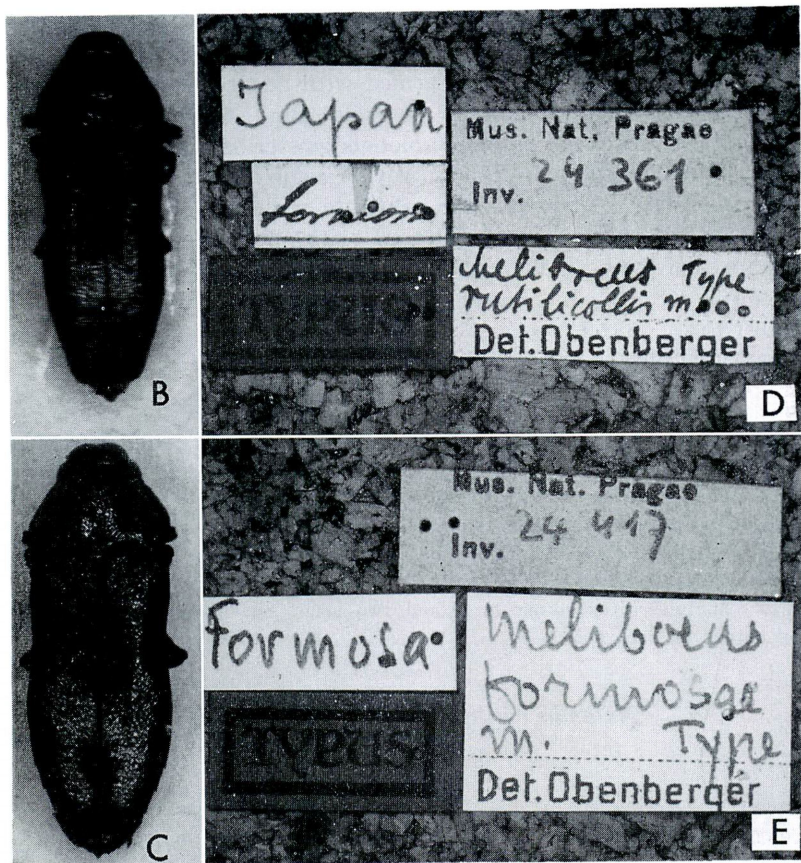
*Meliboeus rutilicollis* OBENBERGER, 1914, Coleopt. Rdsch., 3 : 135-136.

Specimens examined: Typus, ♂. It is labelled as in Fig. D. Other specimens examined: 1 ex., Mt Rarashan, Taoyuan Hsien, 22. VI. 1981, J. LUO leg.; 1 ex., Nanshanchi, Nantou Hsien, 14. V. 1978, T. HATAYAMA leg.; 1 ex., same locality, 15. VIII. 1978, M. TÔYAMA leg.; 2 exs., same locality, 29. IV. - 1. V. 1977, Y. KOMIYA leg.; 1 ex., Wushe, Nantou Hsien, 12. V. 1977, Y. KOMIYA leg.; 1 ex., Lushan, Nantou Hsien, 10. V. 1975, K. AKIYAMA leg.; 1 ex., Domon-Sakahen, Karenko-cho, 1. VI. 1943, A. AOKI leg.; 1 ex., Meifeng, Nantou Hsien, 29. VII. 1978, W. SUZUKI leg.

Host plant: *Mallotus japonicus* MUELL. ARG.

Distribution: Japan (excluding Yaeyama and Okinawa Is. groups), Taiwan (New to Taiwan).

Remarks. The other subspecies, *N. rutilicollis ryukyuensis* Y. KUROSAWA, 1985, from Yaeyama and Okinawa Is. groups is characterized by the following points: 1) elytra deeper blue; 2) head and pronotum greenish with bronzy tinge; 3) rugosity on elytra stronger.



Figs. B-E. B, D. Typus of *Nalanda rutilicollis* (OBENBERGER). B, dorsal view; D, five labels, attached to the type specimen. C, E. Typus of *Nalanda formosana* (OBENBERGER). C, dorsal view; E, four labels, attached to the type specimen.

*Nalanda formosana* (OBENBERGER, 1944)

(Figs. C, E, 8, 22, 33)

*Meliboeus formosanus* OBENBERGER, 1944, Sbornik ent. Mus. Praha, 21/22 : 21-22.

*Nalanda rutilicollis formosana*: Y. KUROSAWA, 1970, Coleop. News, (11) : 1-4.

*Nalanda formosana*: Y. KUROSAWA, 1976, Ditto, (36) : 1-7.

Female. Body fairly oblong, longitudinally convex; head and pronotum golden bronzy; elytra brightly cyaneous and sometimes bearing

greeish tinge. Ventral surface and legs dark brown with bronzy tinge.

Head trapezoidal, convex forward, with an obsolete median groove; vertex with a feeble gibbosity on each side of median groove, concentrically rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, transversely rugoso-punctate, sparsely clothed with long yellow-greyish setae; eyes elliptical, subparallel with each other in frontal view; clypeus about 1.4 times as long as wide between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate, densely clothed with short yellow-greyish setae; antennae short and compact, with first and second segments stout, second 1.5 times as long as third, fourth subequal to third, fifth to terminal serrate.

Pronotum transverse, about 1.8 times as wide as long, widest at basal third, slightly sinuate near base, laterally slightly rounded from apical half to apex; anterior angles narrowly rounded; basal margin distinctly bisinuate; disc convex in middle, concentrically rugoso-punctate, rugosities transverse; sides finely clothed with short yellow-greyish setae. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 2.1 times as long as wide, about 3.4 times as long as pronotum, widest at basal five-ninths; sides subparallel with each other in basal two-ninths, feebly gradually narrowed toward basal third, arcuately broadly expanded behind the middle, then arcuately narrowed toward apices; humeri rounded; disc uniformly transversely rugoso-punctate, longitudinally narrowly depressed along the suture from basal fifth to apical fifth. Pygidium triangular, with a longitudinal carina; apex armed with distinct spines.

Prosternum rugoso-punctate, sparsely clothed with fine yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, clothed with long yellow-greyish setae. Meso- and metasterna strongly imbricate, sparsely clothed with fine yellow setae. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, clothed with long yellow-whitish setae along apical margin. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 4.0-6.3 mm; width: 1.4-2.3 mm.

Specimens examined. Typus, ♀. It is labelled as in Fig. E. TYPUS (p)/*Meliboeus formosae* m. Type (h) Det. OBENBERGER (p)/Mus. Nat. Praeae. Two hundred and fifty specimens are examined from the following localities: Taoyuan Hsien: Mt. Rarashan; Nantou Hsien: Nanshanchi, Wushe, Lushan, Jiuyuehtan, Lienhwachi, Meifeng, Mt. Habonshan; Taichung Hsien: Tapan.

Remarks. J. OBENBERGER (1944) described this species under the genus *Meliboeus* H. DEYROLLE, 1864, however, Y. KUROSAWA (1970) transferred it to the genus *Nalanda*,

and regarded it as a subspecies of *N. rutilicollis*. But Y. KUROSAWA (1976) confirmed, after examining the holotype, that it is a full species, distant from *N. rutilicollis*.

We reexamined the holotype in the National Museum, Prague, through the courtesy of Dr. SVATOPLUK BÍLÝ. This species can be easily distinguished from *N. rutilicollis* by the following characteristics: 1) head and pronotum golden bronzy, while in *N. rutilicollis*, they are deeply cupreous with golden tinge; 2) elytra brightly cyaneous and sometimes bearing greenish tinge, while in *N. rutilicollis*, they are deeply cyaneous with greenish tinge; 3) vertex with feeble gibbosity on each side of median groove, while in *N. rutilicollis*, it is simply convex, with a longitudinal depression; 4) antennae with the second segment 1.5 times as long as the third, the fourth subequal in length to the third, while in *N. rutilicollis*, the second is 1.3 times as long as the third, the fourth 1.2 times as long as the third. Moreover, the shape of the male genitalia is quite different between both species as shown in Figs. 32 and 33.

*Nalanda hideoi* sp. nov.

(Figs. 9, 23, 34)

Male. Body fairly oblong, longitudinally convex; pronotum bronzy sometimes with bluish tinge; elytra brightly cyaneous and sometimes with greenish tinge. Ventral surface and legs dark brown with bronzy tinge.

Head trapezoidal, convex forward with obsolete median groove; vertex with a feeble gibbosity on each side of median groove, transversely rugoso-punctate; frons subquadrate, with apical margin distinctly arcuate, rugoso-punctate, sparsely clothed with long yellow-greyish setae; eyes elliptical, subparallel with each other in frontal view; clypeus transverse, about 1.2 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate, densely clothed with long greyish-brown setae; antennae short and compact, with first and second stout, second 1.5 times as long as third, third 1.4 times as long as fourth, fifth to terminal serrate.

Pronotum transverse, about 1.6 times as wide as long, widest at basal two-fifths, slightly sinuate near base, laterally slightly sinuate from apical three-fifths to apex; anterior angles arcuate in lateral view; basal margin distinctly bisinuate; posterior angles narrowly rounded; disc convex in middle, concave along anterior and lateral margins; surface rugoso-punctate, rugosities transverse; sides clothed with fine yellow-greyish setae. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate and more or less dentate in middle.

Elytra about 2.0 times as long as wide, about 3.4 times as long as

pronotum; widest at middle; sides expanded behind humeri, gradually narrowed toward basal fourth, arcuately broadly expanded behind the middle, then arcuately narrowed toward apices; humeri rounded; disc uniformly transversely rugoso-punctate, longitudinally narrowly depressed along the suture from basal tenth to apical fifth. Pygidium triangular, with a longitudinal carina; apex armed with small but distinct spines.

Prosternum rugoso-punctate, sparsely clothed with short yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, clothed with long yellow-greyish setae. Meso- and metasterna strongly imbricate, sparsely clothed with short yellowish setae. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, clothed with long yellow-greyish setae along apical margin. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 5.3-5.5 mm; width: 2.0-2.2 mm.

Holotype: ♂, Mt. Dayuanshan, Kaohsiung Hsien, 20. V. 1984, Y. KOMIYA leg. Paratypes: 3 exs., same data as the holotype; 1 ex., Puli, Nantou Hsien, 21. IV. 1927, T. KANO leg.; 1 ex., ditto, VI. 1941, Y. YANO leg.; 1 ex., Nanshanchi, Nantou Hsien, 1. V. 1977, K. MIKAGE leg.; 1 ex., ditto, 4. V. 1977, K. MIKAGE leg.; 1 ex., ditto, 13. V. 1977, Y. KOMIYA leg.; 1 ex., ditto, 26. IV. 1984, Y. KUSAKABE leg.; 1 ex., Jiuyuehtan, Nantou Hsien, 3. V. 1977, Y. KOMIYA leg.; 2 exs., ditto, 11. V. 1977, Y. KOMIYA leg.; 2 exs., ditto, 3. V. 1978, Y. KOMIYA leg.; 1 ex., Lushan, Nantou Hsien, 5. V. 1978, Y. ODA leg.; 1 ex., Mt. Alishan, Chiayi Hsien, 10. VI. 1938, S. NOMURA leg.; 3 exs., Fenchifu, Chiayi Hsien, 7-8. VII. 1965, T. NAKANE leg.; 6 exs., Mt. Paoshan, Liukuei, Kaohsiung Hsien, 18. V. 1966, W. CHEN leg.; 3 exs., ditto, 20. V. 1975, K. AKIYAMA leg.; 4 exs., near Liukuei, Kaohsiung Hsien, 9-11. IV. 1984, Y. KUSAKABE leg.; 1 ex., Kaochunchi, Liukuei, Kaohsiung Hsien, 28. IV. 1978, Y. KOMIYA leg.; 4 exs., Shanping, Liukuei, Kaohsiung Hsien, 28. IV. 1978, Y. KOMIYA leg.; 1 ex., ditto, 20. V. 1980, A. NISHIYAMA leg.; 1 ex., Mt. Nanfengshan, Liukuei, Kaohsiung Hsien, 14. V. 1980, A. SEKI leg.; 1 ex., ditto, 15. V. 1980, A. SEKI leg.; 1 ex., ditto, 24. V. 1981, A. SEKI leg.; 3 exs., ditto, 25. V. 1981, K. KAWADA leg.; 1 ex., ditto, 26. V. 1981, K. KAWADA leg.; 1 ex., ditto, 1. X. 1986, K. BABA leg.; 7 exs., Mt. Dayuanshan, Liukuei, Kaohsiung Hsien, 21. V. 1984, Y. KOMIYA leg.; 1 ex., ditto, 24. V. 1984, Y. KOMIYA leg.; 5 exs., ditto, 24. V. 1984, K. IKEDA leg.; 1 ex., Shinbaoshi, Liukuei, Kaohsiung Hsien, 21. V. 1986, K. BABA leg.; 3 exs., Meishantinchí, Liukuei, Kaohsiung Hsien, 29. VI. 1986, K. BABA leg.; 1 ex., Mt. Chihnnanshan, Liukuei, Kaohsiung Hsien, 25. X. 1986, K. BABA leg.; 1 ex., Malibulu, Taitung Hsien, 26. VI. 1986, K. MASUMOTO leg.; 2 exs., ditto, 27. VI. 1986, K. MASUMOTO leg.; 1 ex., Formosa, VI. 1986.

Remarks. This new species is closely allied to *N. formosana* (OBENBERGER, 1944), but can be distinguished from it by the following characteristics: 1) pronotum bronzy, sometimes with bluish tinge, while in *N. formosana*, it is golden-bronzy; 2) vertex transversely rugoso-punctate, while in *N. formosana*, it is concentrically rugoso-punctate; 3) antennae with the fourth segment shorter than the third, while in *N. formosana*, the fourth segment is subequal to the third.

*Nalanda komiyai* sp. nov.

(Figs. 10, 24, 35)

Similar to *N. hideoi* sp. nov., but differing from it in the following characteristics: 1) body slender; 2) elytra deeply cyaneous, while in *N. hideoi*, they are brightly cyaneous, sometimes with greenish tinge; 3) antennae with the third segment 1.7 times as long as the fourth, while in *N. hideoi*, the third segment is 1.4 times as long as the fourth; 4) pygidium armed with three acute spines at the apex, while in *N. hideoi*, the apex is armed with some small but distinct spines.

Length: 4.4 mm; width: 1.6 mm.

Holotype: ♂, Mt. Dayuanshan, Liukuei Kaohsiung Hsien, 21. V. 1984, Y. KOMIYA leg.

Remarks. This new species is dedicated to Dr. YOSHIKI KOMIYA, Faculty of Medicine, Tokyo University, who gave us many valuable specimens of buprestid beetles.

*Nalanda lagerstraemiae* sp. nov.

(Figs. 11, 25, 36)

Similar to *N. hideoi* sp. nov., but differing from it in the following characteristics: 1) pronotum purple with reddish tinge, while in *N. hideoi*, it is bronzy, sometimes with bluish tinge; 2) pygidium finely dentate-serrate at the apex, while in *N. hideoi*, the apex is armed with some small but distinct spines.

Length: 4.8-4.9 mm; width: 1.8 mm.

Host plant: *Lagerstraemia indica* LINNÉ (confirmed by Y. KUROSAWA).

Holotype: ♂, Nanshanchi, Nantou Hsien, 7. V. 1976, K. AKIYAMA leg. Paratypes: 1 ex., Banshoryo Distr., Sokutsu, 7. VIII. 1912, H. SAUTER leg. (recorded by KERREMANS as *Meliboeus saundersi* KERREMANS); 11 exs., same data as the holotype; 2 exs., ditto, 8. VI. 1965, B. C. CHANG leg.; 1 ex., ditto, 26. VI. 1965, T. SHIRÔZU leg.; 1 ex., ditto, 30. VI. 1965, T. SHIRÔZU leg.; 1 ex., ditto, 30. VI. 1965, S. KIMOTO leg.; 4 exs., ditto, 30. VI. 1965, Y. KUROSAWA leg.; 1 ex., ditto, 3. VIII. 1969, Y. HORI leg.; 1 ex., ditto, 22. IV. 1974, H. YOKOYAMA leg.; 1 ex., ditto, 26. V. 1975, K. AKIYAMA leg.; 3 exs., ditto, 15. V. 1976, K. AKIYAMA leg.; 2 exs., ditto, 24. V. 1976, K. AKIYAMA leg.; 40 exs., ditto, 11-14. IV. 1978, M. ITOH leg.; 5 exs., ditto, 7. VI. 1978, M. ITOH leg.; 2 exs., ditto, 11. V. 1980, A. SEKI leg.; 63 exs., ditto, V. 1981, C. LUO leg.; 3 exs., Jiuyuehtan, Nantou Hsien, 3. V. 1977, Y. KOMIYA leg.; 1 ex., ditto, 16. V. 1977, T. NIISATO leg.; 7 exs., ditto, 6. VI. 1978, M. ITOH leg.; 1 ex., Fenchifu, Chiayi Hsien, 14. IV. 1965, S. MIYAMOTO leg.; 1 ex., Tapan, Taitung Hsien, 7. VII. 1978, H. AKIYAMA leg.; 1 ex., Hongshuiken, Liukuei, Kaohsiung Hsien, 27. IV. 1978, Y. KOMIYA leg.; 1 ex., Liukuei, Kaohsiung Hsien, 1-3. V. 1982, M. ÔHARA leg.; 1 ex., Tienchi, Liukuei, Kaohsiung

Hsien, 29. VI. 1986, K. BABA leg.; 1 ex., Kaohsiung Hsien, 7. V. 1926, T. KANO leg.; 1 ex., ditto, 9. V. 1926, T. KANO leg.; 1 ex., Puli, Nantou Hsien, 22. V. 1927, T. KANO leg.; 1 ex., ditto, 11. VII. 1941, T. SATÔ leg.; 5 exs., ditto, 22. VIII. 1941, H. HASEGAWA leg.; 76 exs., Formosa, VI. 1965; 10 exs., Formosa, 1973.

Remarks. This new species is also allied to *N. komiyai* sp. nov., but can be distinguished from it by the following characteristics: 1) pronotum purple with reddish tinge, while in *N. komiyai*, it is deeply cyaneous; 2) vertex with feeble gibbosity on each side of median groove, while in *N. komiyai*, it is simply convex; 3) eyes ovate, while in *N. komiyai*, they are elliptical; 4) pygidium finely dentate-serrate at the apex, while in *N. komiyai*, the apex is armed with three acute spines.

*Nalanda toyamai* sp. nov.

(Figs. 13, 27, 38)

Male. Body small, fairly oblong, longitudinally convex; head and pronotum violaceous with bronzy tinge; elytra blackish-brown sometimes with bronzy tinge. Ventral surface and legs bronzy black with shining abdomen.

Head trapezoidal, convex forward; vertex simply convex, densely punctate; frons subtrapezoidal, with apical margin distinctly arcuate, transversely rugoso-punctate, sparsely clothed with short greyish-brown setae; eyes ovate, convergent below in frontal view; clypeus transverse, about 1.4 times as wide as long between antennal cavities, with elliptical and oblique depression between antennal cavities, anterior margin arcuately emarginate, densely clothed with short brown setae; antennae short and compact, with first and second segments stout, second 1.5 times as long as third, fourth subequal to third, fifth to terminal serrate.

Pronotum transverse, about 1.8 times as wide as long, widest at basal third, sides slightly sinuate near base, laterally slightly arcuate from apical third to apex; anterior angles feebly arcuate on each side; basal margin distinctly bisinuate; posterior angles narrowly pointed; disc strongly convex in middle, concave along anterior and lateral margins; surface rugoso-punctate, rugosities transverse, sides sparsely clothed with short greyish-brown setae. Scutellum subtrapezoidal in basal portion, fairly acutely triangular in apical portion, laterally emarginate, and more or less dentate in middle.

Elytra about 2.2 times as long as wide, about 3.7 times as long as pronotum, widest at middle; sides expanded behind humeri, gradually narrowed toward basal third, arcuately broadly expanded behind the middle, then arcuately narrowed toward apices; humeri rounded; disc uniformly transversely rugoso-punctate. Pygidium triangular, with a longitudinal carina; apex armed with three distinct projections of which

the more prominent median one is finely serrate and two distinct spines.

Prosternum short, imbricate, sparsely clothed with short yellow-greyish setae; prosternal process prolonged posteriorly, strongly punctate, densely clothed with long yellow-greyish setae. Meta- and mesosterna densely imbricate. Abdomen also imbricate, with anal abdominal sternite subtruncate at apex, clothed with long yellow-greyish setae. Legs short, with tibiae distinctly arcuate. Claws simply cleft.

Length: 3.5-4.0 mm; width: 1.2-1.4 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 5. V. 1979, M. TÔYAMA leg. Paratypes: 1 ex., same data as the holotype; 1 ex., ditto, 30 V. 1965, T. SHIRÔZU leg.; 1 ex., ditto, 27. V. 1965, T. SHIRÔZU leg.; 1 ex., ditto, 7. V. 1976, K. AKIYAMA leg.; 1 ex., Lienhwachi, Nantou Hsien, 15. VI. 1973, H. YOKOYAMA leg.; 1 ex., ditto, 30-31. V. 1980, H. MAKIHARA leg.; 1 ex., Mt. Habonshan, Nantou Hsien, 26. V. 1982, T. WAKEJIMA leg.; 1 ex., Karapin, near Mt. Alishan, Chiayi Hsien, 1. VI. 1947, Y. YANO leg.; 1 ex., Mt. Dayuanshan, Liukuei, Kaohsiung Hsien, 24. V. 1984, K. IKEDA leg.; 4 exs., Formosa, V. 1965; 5 exs., Formosa, VI. 1965; 3 exs., Formosa IV. 1966; 2 exs., Formosa, V. 1966; 1 ex., Formosa, 1973; 3 exs., Taiwan, V. 1973.

Remarks. This new species is allied to *N. shimomurai* sp. nov., but differs from it in the following characteristics: 1) head and pronotum violaceous with bronzy tinge and elytra blackish-brown sometimes bearing bronzy tinge, while in *N. shimomurai*, they are cupreous; 2) eyes ovate, while in *N. shimomurai*, they are elliptical; 3) pygidium armed with distinct spines at the apex, while in *N. shimomurai*, the apex is without spines.

### *Nalanda niisatoi* sp. nov.

(Figs. 12, 26, 37)

Similar to *N. toyamai* sp. nov., but differs from it in the following characteristics: 1) head and pronotum bright black, with sides of pronotum narrowly golden-green tinge, while in *N. toyamai*, they are violaceous with bronzy tinge; 2) vertex with a feeble gibbosity on each side of median groove, while in *N. toyamai*, it is simply convex; 3) antennae with the fourth segment shorter than the third, while in *N. toyamai*, the fourth segment is subequal to the third.

Length: 3.4 mm; width: 1.2 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 7. V. 1977, T. NIISATO leg.

### *Nalanda shimomurai* sp. nov.

(Figs. 14, 28, 39)

Similar to *N. toyamai* sp. nov., but differs from it in the following characteristics: 1) body rather longer; 2) elytra cupreous, while in *N.*

*toyamai*, they are blackish-brown sometimes with bronzy tinge; 3) pygidium finely serrate at the apex without spine, while in *N. toyamai*, the apex is armed with three distinct projections and two distinct spines.

Length: 3.6-5.6 mm; width: 1.2-1.5 mm.

Holotype: ♂, Nanshanchi, Nantou Hsien, 18. X. 1976, J. ITOH leg. Paratypes: 1 ex., ditto, 12. VI. 1970, S. FUKUDA leg.; 1 ex., ditto, 1. IV. 1976, H. SAKAINO leg.; 1 ex., ditto, 7. V. 1976, K. AKIYAMA leg.; 1 ex., ditto, 25. V. 1976, T. SHIMOMURA leg.; 1 ex., ditto, 24-26. III. 1977, Y. NOTSU leg.; 1 ex., ditto, 28. III. 1977, W. SUZUKI leg.; 1 ex., ditto, 17. IV. 1977, W. SUZUKI leg.; 1 ex., ditto, 27. IV. 1977, T. NISATO leg.; 1 ex., ditto, 29. IV. 1977, Y. KOMIYA leg.; 1 ex., ditto, 30. IV. 1977, Y. KOMIYA leg.; 1 ex., ditto, 4. V. 1977, W. SUZUKI leg.; 1 ex., ditto, 18. V. 1977, T. NISATO leg.; 1 ex., ditto, 20. V. 1977, T. NISATO leg.; 1 ex., ditto, 14. V. 1978, T. HATAYAMA leg.; 1 ex., ditto, 2. VIII. 1978, T. NISATO leg.; 2 exs., ditto, 28. IV. 1979, M. TÔYAMA leg.; 1 ex., ditto, 11. V. 1980, A. NISHIYAMA leg.; 1 ex., ditto, 11. V. 1980, A. SEKI leg.; 1 ex., Sulo, near Baling, Taoyuan Hsien, 30. IV. 1978, T. KOBAYASHI leg.; 1 ex., Sankuang, Taoyuan Hsien, 23. VII. 1978, T. SHIMOMURA leg.; 1 ex., Liukuei, Kaohsiung Hsien, 17. III. 1978, T. NISATO leg.; 1 ex., Shanping, Liukuei, Kaohsiung Hsien, 25. VII. 1986, K. BABA leg.; 1 ex., Formosa, V. 1965; 1 ex., Kenting Park, Pintung Hsien, 14-19. V. 1979, Y. KUSAKABE leg.; 2 exs., Taiwan, V. 1973.

Remarks. This new species is also allied to *N. niisatoi* sp. nov., but can be distinguished from it by the following characteristics: 1) dorsal surface cupreous, while in *N. niisatoi*, it is brightly black with sides of pronotum narrowly golden-green tinge; 2) vertex strongly convex, while in *N. niisatoi*, it is feebly gibbose on each side of median groove; 3) pygidium without spine at the apex, while in *N. niisatoi*, the apex is armed with distinct spines.

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#### Explanation of Plates 1-4

Pls. 1 & 2, Figs. 1-14. Dorsal outlines of *Nalanda* spp.

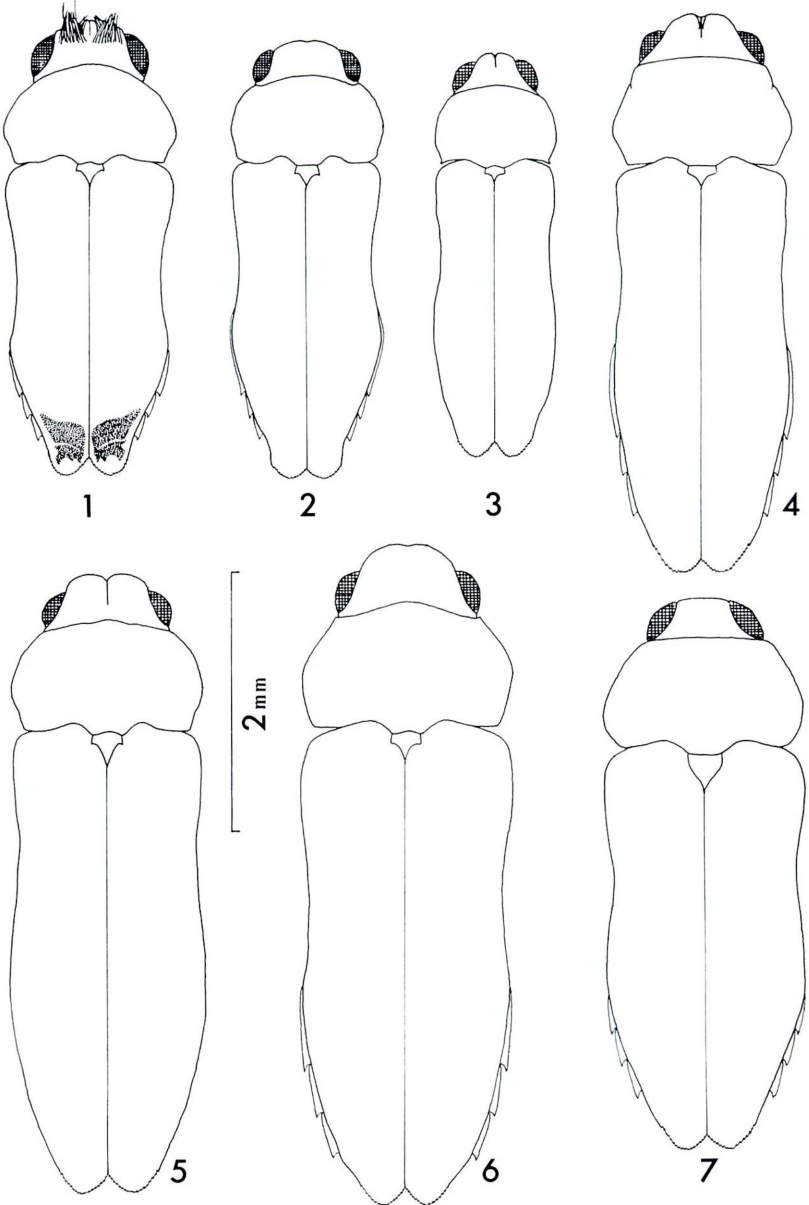
1, *N. kurosawana* sp. nov.; 2, *N. bilyi* sp. nov.; 3, 4, *N. pentacallosa* sp. nov.; 5, *N. takashii* sp. nov.; 6, *N. suzukii* sp. nov.; 7, *N. rutilicollis rutilicollis* (OENBERGER, 1914); 8, *N. formosana* (OENBERGER, 1944); 9, *N. hideoi* sp. nov.; 10, *N. komiyai* sp. nov.; 11, *N. lagerstraemiae* sp. nov.; 12, *N. niisatoi* sp. nov.; 13, *N. toyamai* sp. nov.; 14, *N. shimomurai* sp. nov.

Pl. 3, Figs. 15-28. Pygidia in *Nalanda* spp.

15, *N. kurosawana* sp. nov.; 16, *N. bilyi* sp. nov.; 17, *N. pentacallosa* sp. nov., ♂; 18, ditto, ♀; 19, *N. takashii* sp. nov.; 20, *N. suzukii* sp. nov.; 21, *N. rutilicollis rutilicollis* (OENBERGER, 1914); 22, *N. formosana* (OENBERGER, 1944); 23, *N. hideoi* sp. nov.; 24, *N. komiyai* sp. nov.; 25, *N. lagerstraemiae* sp. nov.; 26, *N. niisatoi* sp. nov.; 27, *N. toyamai* sp. nov.; 28, *N. shimomurai* sp. nov.

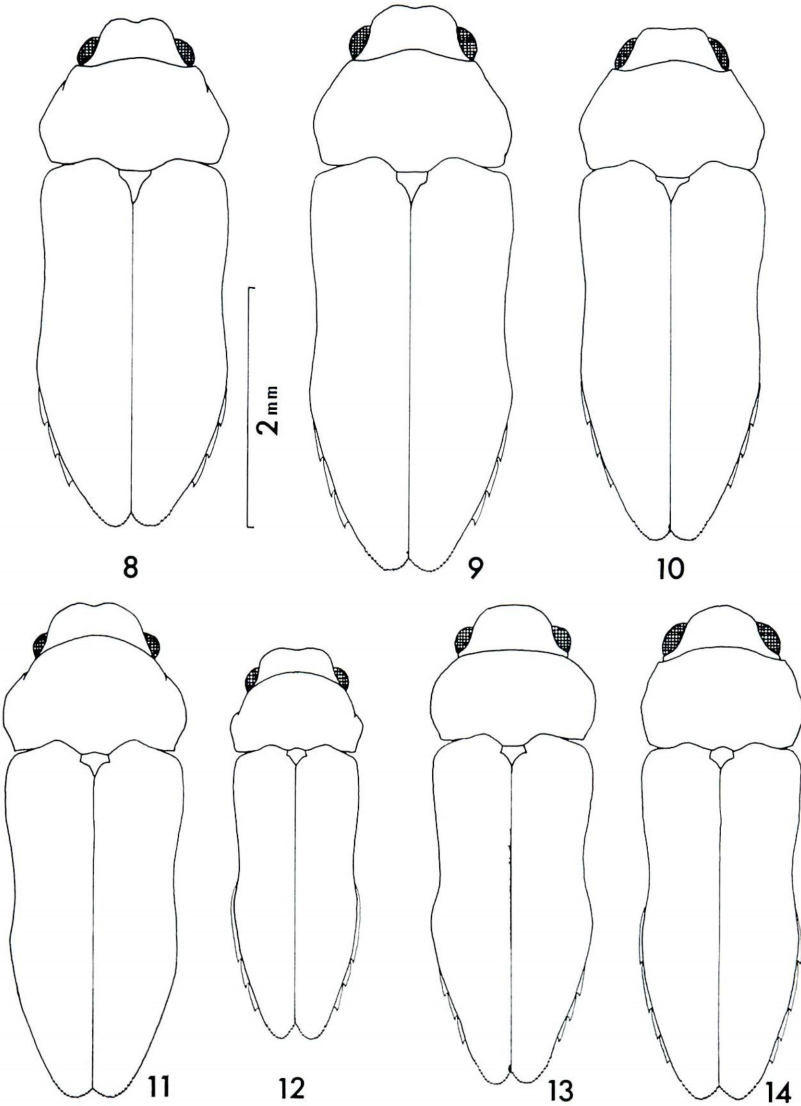
Pl. 4, Figs. 29-39. Male genital apparatus in *Nalanda* spp.

29, *N. kurosawana* sp. nov.; 30, *N. bilyi* sp. nov.; 31, *N. pentacallosa* sp. nov.; 32, *N. rutilicollis rutilicollis* (OENBERGER, 1914); 33, *N. formosana* (OENBERGER, 1944); 34, *N. hideoi* sp. nov.; 35, *N. komiyai* sp. nov.; 36, *N. lagerstraemiae* sp. nov.; 37, *N. niisatoi* sp. nov.; 38, *N. toyamai* sp. nov.; 39, *N. shimomurai* sp. nov.



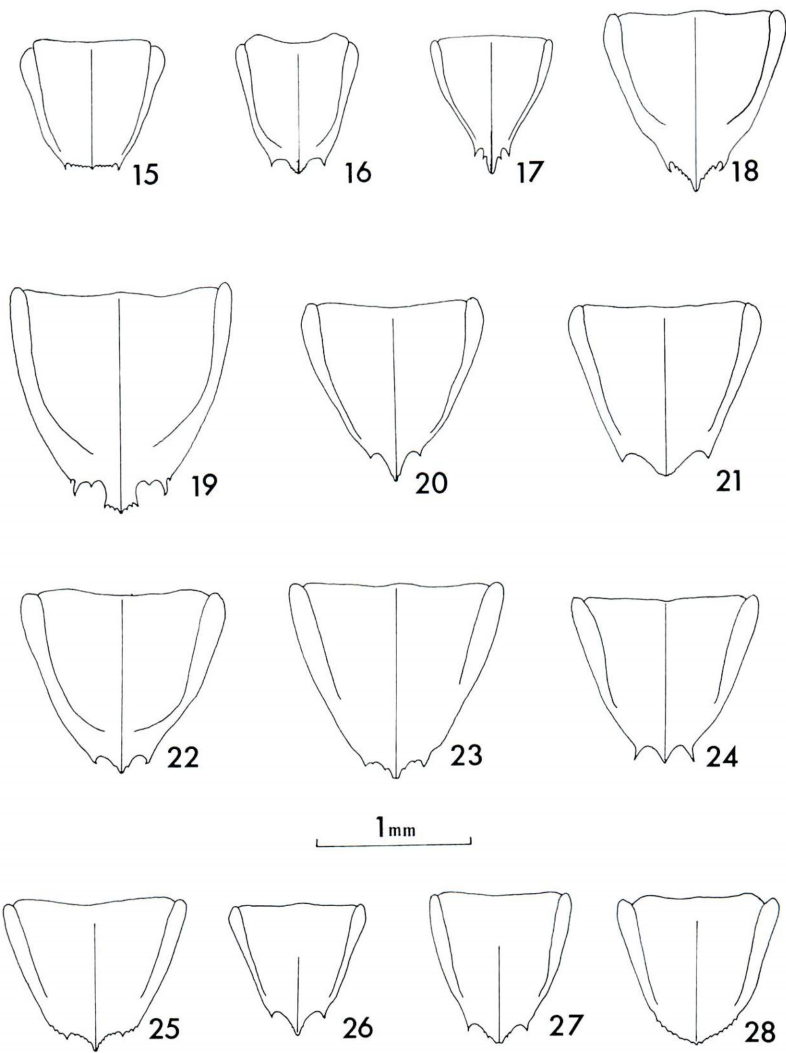
(S. OHMOMO & K. AKIYAMA del.)





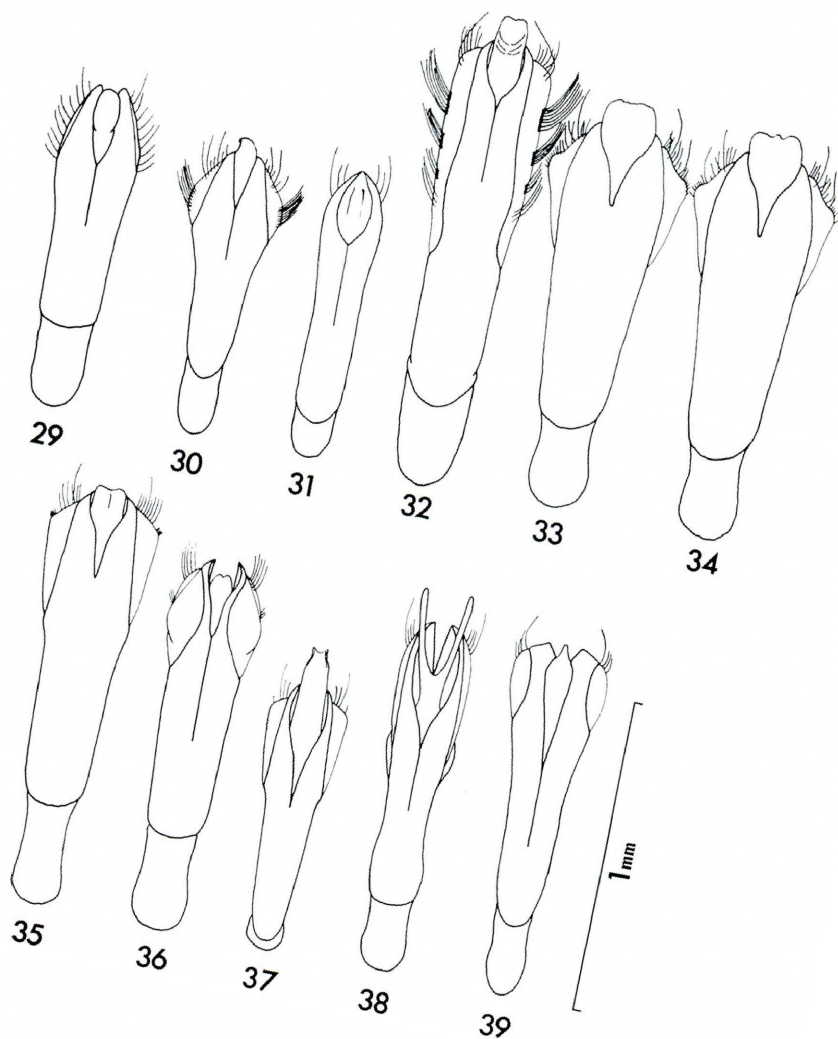
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(S. OHMOMO & K. AKIYAMA del.)



# Revisional Study on the Japanese Species of Genus *Argopus* FISCHER (Col., Chrysomelidae, Alticinae)

By SHINSAKU KIMOTO

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This is a revisional work on the Japanese species of genus *Argopus*, previously reported by KIMOTO (1965), under the title of "Chrysomelidae of Japan and the Ryukyu Is."

## Genus *Argopus* FISCHER VON WALDHEIM

*Argopus* FISCHER, 1824, Entomogr. Imp. Ross., 2: 184 (type: *Argopus bicolor* FISCHER VON WALDHEIM, SW Russia). — HEIKERTINGER, 1912, REITTER, Fauna Germ., 4: 148, 200; 1924, Kol. Rundsch., 11 (1-2): 36; 1925, *ibid.*, (3-4): 53. — MAULIK, 1926, Fauna India, Chrys. & Halt.: 429. — CHEN, 1933, Sinensia, 3 (9): 222; 1934, *ibid.*, 5 (3-4): 232, 318. — CHÛJÔ, 1935, Trans. Nat. Hist. Soc. Formosa, 25: 356; 1936, *ibid.*, 26: 110. — CHEN, 1936, Sinensia, 7 (6): 631. — GRESSITT & KIMOTO, 1963, Pac. Ins. Mon., 1B: 746, 815. — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3): 438. — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 35. — SCHERER, 1969, Pac. Ins. Mon., 22: 5, 14, 221.

*Dicherosis* FOU DRAS, 1859, Ann. Soc. Linn. Lyon, n. ser., 6: 147.

## Key to Japanese species of *Argopus*

1. Body entirely reddish brown ..... 2  
— Entirely shining black; anterior margin of clypeus widely and triangularly notched; pronotum distinctly but not closely punctate; length 4.0-4.2 mm .....  
..... *nigripennis*
2. Anterior margin of clypeus triangularly notched ..... 3  
— Anterior margin of clypeus subquadrately notched, distinctly so in male and less distinctly so in female; entirely reddish brown; length 4.2-5.0 mm ..... *balyi*
3. Rather large in size; larger than 4.0 mm in length ..... 4  
— Rather small in size; triangular notch of clypeus minute; generally reddish brown; in some specimen ventral surfaces, together with part of dorsal surfaces,

- dark piceous; length 3.2–3.8 mm.....*punctipennis*
4. Legs at least partly blackish ..... 5
- Legs entirely reddish brown; antenna black with basal four segments brownish; generally reddish brown, anterior margin of pronotum deeply emarginate; length 4.2–5.0 mm .....*unicolor*
5. Reddish brown, antenna black with three basal segments reddish brown; legs reddish brown with tibiae and tarsi black; triangular notch of anterior margin of clypeus large; length 4.2–5.0 mm .....*clypeatus*
- Pale fulvus, antenna black with three basal segments reddish brown; legs black; triangular notch of anterior margin of clypeus small; length 4.2 mm.....*clarki*

### *Argopus nigripennis* JACOBY

*Argopus nigripennis* JACOBY, 1885, Proc. Zool. Soc. London, 1885 : 734 (Japan : Shimonosuwa; BM). — CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26 : 110, 111 (Honshu). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3) : 438 (Honshu). — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7 : 36, 46 (Honshu).

Distribution : Japan (Honshu).

### *Argopus balyi* HAROLD

*Argopus balyi* HAROLD, 1878, Dtsche Ent. Z., 22 (1) : 88 (Japan : Tokyo). — CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26 : 111, 113 (Honshu). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3) : 438, 439 (Honshu, Shikoku, Kyushu). — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7 : 36, 47 (Honshu, Shikoku, Kyushu).

Distribution : Japan (Honshu, Shikoku, Kyushu).

Host : *Clematis* spp.

### *Argopus punctipennis* (MOTSCHULSKY)

*Dicherosis punctipennis* MOTSCHULSKY, 1866, Bull. Soc. Imp. Nat. Moscou, 39 (2) : 178 (Japan).

*Argopus orientalis* BALY, 1874, Trans. Ent. Soc. London, 1874 : 206 (Japan : Nagasaki; BM). — OGLOBLIN, 1930, Eos, 6 (1) : 107 (= *punctipennis*).

*Sphaeroderma unicolor* JACOBY, 1885, Proc. Zool. Soc. London, 1885 : 736 (nec MOTSCHULSKY, 1860) (Japan : Nikko; BM). — CHÛJÔ & KIMOTO, 1961, Pac. Ins., 3 (1) : 175 (= *punctipennis*).

*Argopus punctipennis* : CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26 : 111 (Kyushu). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3) : 438, 439 (Kyushu, Honshu, Hokkaido). — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7 : 36, 39 (Rebun, Rishiri, Hokkaido, Honshu, Shikoku, Kyushu).

*Argopus unicolor* : CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26 : 111, 112 (S. Saghalien; Hokkaido, Honshu).

*Argopus univestis* HEIKERTINGER, 1940, Col. Cat. JUNK, 169 : 514 (new name for *Sphaeroderma unicolor* JACOBY, 1885) (Japan : Hokkaido, Honshu).

*Argopus punctipennis amagianus* OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 42 (Japan: Mt. Amagi; OHNO).

*Argopus punctipennis* f. *univestis*: OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 41 (Honshu: Tanigawadake).

Distribution: S. Sachalin, Japan (Hokkaido, Honshu, Awa-shima, Sado Is., Oki Is., Shikoku, Kyushu).

Host: *Cirsium* spp., *Aconitum* spp.

### *Argopus unicolor* MOTSCHULSKY

*Argopus unicolor* MOTSCHULSKY, 1860, SCHRENCK's Reisen Amurl., 2: 235, pl. 11, fig. 24 (E. Siberia). — GRESSITT & KIMOTO, 1963, Pac. Ins. Mon., 1B: 816, 821 (E. Siberia, Korea). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3): 438, 439 (Kyushu, Shikoku, Honshu). — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 36, 42 (Sado Is., Honshu, Kyushu).

Distribution: E. Siberia, Korea, Japan (Honshu, Shikoku, Kyushu).

Host: *Clematis terniflora*, *Ranunculus japonicus*.

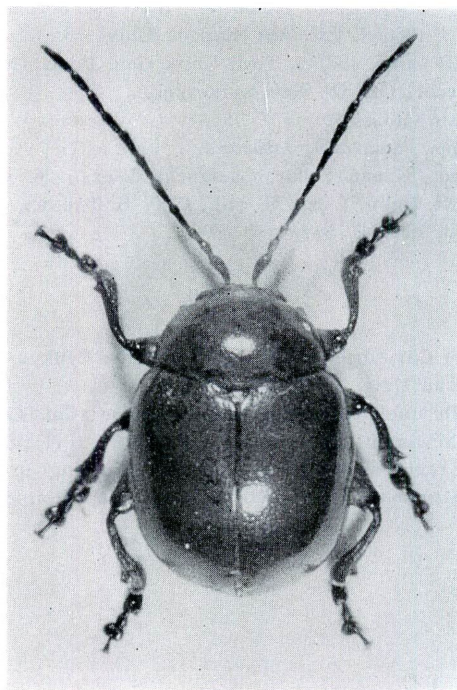


Fig. 1. *Argopus clypeatus* BALY

*Argopus clypeatus* BALY, Good species (Fig. 1)

*Argopus clypeatus* BALY, 1874, Trans. Ent. Soc. London, 1874: 206 (Japan: Nagasaki; BM). — CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26: 111, 113 (Honshu, Kyushu). — OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 37, 45 (Honshu, Shikoku, Kyushu).

*Argopus nigritarsis*: MOTSCHULSKY, 1860, Etud. Ent., 9: 27 (Japan). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3): 438, 439 (Kyushu, Shikoku).

Distribution: Japan (Honshu, Sado Is., Oki Is., Shikoku, Kyushu, Tsushima).

Host: *Clematis terniflora*.

MOTSCHULSKY (1860) recorded *Argopus nigritarsis* (GEBLER) from Japan. In KIMOTO (1965), *Argopus clypeatus* BALY was treated as a synonym of *Argopus nigritarsis* (GEBLER). I could not examine the type series of *Argopus nigritarsis* (GEBLER) nor any Siberian material. However, the Japanese specimens are slightly larger than ones from Northern China. In this paper, I treat *clypeatus* BALY as a good species.

*Argopus clarki* JACOBY

*Argopus clarki* JACOBY, 1885, Proc. Zool. Soc. London, 1885: 734 (Japan: Miyazaki; BM). — CHÛJÔ, 1936, Trans. Nat. Hist. Soc. Formosa, 26: 110, 111 (Honshu). — KIMOTO, 1965, J. Fac. Agr. Kyushu Univ., 13 (3): 438, 440 (Honshu).

*Argopus hasegawai* OHNO, 1967, J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 37, 49 (Japan: Kamikochi; OHNO). **New synonym.**

Distribution: Japan (Honshu).

Host: *Clematis* spp., *Ranunculus japonicus*.

Material examined. Nagano: Shirahone-guchi, 5 exs., 26. vii. 1973, S. KIMOTO. Ishikawa: Ichinose, Mt. Haku, 1 ex., 29. viii. 1960, S. TAKABA. Fukui: Koike, Mt. Haku, 1 ex., 20–24. vii. 1964, H. SASAJI.

References

- KIMOTO, S., 1965; The Chrysomelidae of Japan and the Ryukyu Is. IX (Alticinae II). J. Fac. Agr. Kyushu Univ., 13 (3): 431–459.  
 OGLOBLIN, D., 1930; De quelques espèces de Halticinae (Col. Chrysomelidae) de la collection de V. MOTSCHULSKY. Eos, Rev. Esp. Ent., 6 (1): 83–112, 1 pl.  
 OHNO, M., 1967; A revision of *Argopus*-species occurring in Japan (Coleoptera, Chrysomelidae, Alticinae). J. Toyo Univ., Gen. Educ. (Nat. Sci.), 7: 35–51.

# Notes on the Species of *Othius* from Taiwan (Coleoptera, Staphylinidae)

By TATEO ITO

In this paper three new species of *Othius* from the mountainous district in central Taiwan, *Othius taiwanus* sp. nov., *O. shibatai* sp. nov. and *O. yushanus* sp. nov. are described, and the aedeagi of *O. medius* SHARP and *O. parvipennis* (SHIBATA) are firstly figured.

The author wishes to express his hearty thanks to Mr. T. SHIBATA and Dr. K. SAWADA for their constant guidance and many useful suggestions of studying on Staphylinidae and also to the members of the Osaka Coleopterological Society for their kindness in literature and materials.

## *Othius taiwanus* sp. nov. (Fig. 1)

Body large, subdepressed above, shiny black, pronotum, elytra, under-side of head, pronotal epipleura and prosternum more or less lightened, mouth parts, antennae, frons and legs reddish brown, insides of mandibles and basal segments of antennae partly, femora and coxae wholly darkened, abdomen apically with 7th segment narrowly and 8th widely yellowish brown, pubescence of body brownish to greyish black, those of mouth parts, apical segments of antennae and legs light-yellow. Length: 14.0-15.0 mm.

Head subquadrate, longer than wide (1.14 : 1), slightly widened behind, sparsely and irregularly punctate except frons, and faintly microsculptured throughout, the punctures rather large and becoming sparser toward median smooth line, the microsculpture fine and transversely line-

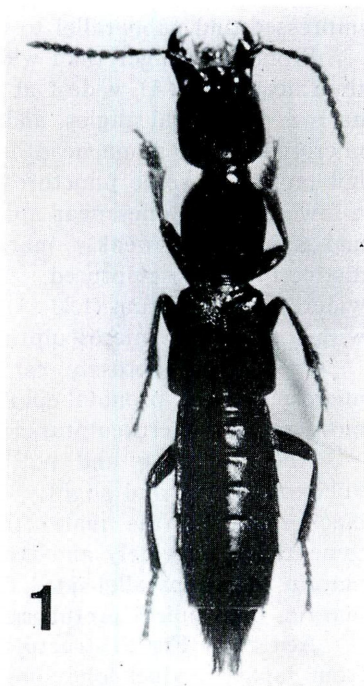


Fig. 1. *Othius taiwanus* sp. nov.

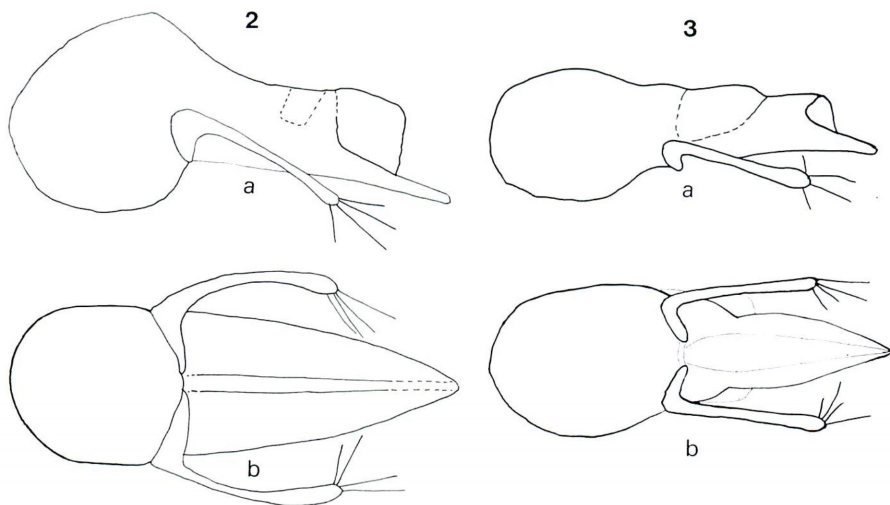
olate but that on frons somewhat reticulate, mandibles robust and long, the right one with a dull tooth near middle of inner side, the left with two teeth, one at middle and the other at apical third, frons distinctly depressed, frontal sulci defining the depression on both sides, convergent behind and terminating in three to five large setiferous punctures, clypeo-frontal suture clearly visible and arcuate, antennae robust and short, scarcely reaching to middle of pronotum, all segments longer than wide, 1st as long as the following two segments together, 2nd about a half length of 3rd, 4th to 10th gradually shortened distally and 10th scarcely longer than wide, eyes moderate-sized, nearly 0.4 times as long as postgenae, which subparallel-sided but slightly widened behind. Under-side of head more clearly microsculptured and less coarsely and more sparsely punctate and also more clearly iridescent than on the upper side, ultimate segments of labial and maxillary palpi gradually narrowed to apical dull tips, mentum reflexed on both sides, distinctly arcuate on apical margin and reticulately microsculptured, submentum weakly and gular plate rather strongly microsculptured, gular sutures distinctly impressed and subparallel to each other in hind half.

Pronotum longer than wide (1.25 : 1), as wide as and a little longer than head (1.08 : 1), widest at apical third, from which sides substraightly narrowed to basal angles, and arcuate to apical angles, disc similarly microsculptured as on head and slightly iridescent, almost impunctate but only with some punctures on marginal and submarginal areas and a few scattered ones near apical angles, lateral and basal sides strongly and apical side weakly marginate. Scutellum sparsely punctate and distinctly microsculptured. Elytra flattened, slightly dilated behind, wider than pronotum (1.23 : 1), coarsely and rather closely punctate, and with a scratched microsculpture; wings developed.

Prosternum obtusely carinate medianly, distinctly and lineolately microsculptured, pronotal epipleura very weakly so, meta- and mesosterna more weakly microsculptured than on prosternum.

Abdomen finely and not closely punctate, weakly and lineolately microsculptured and slightly iridescent, each sternite with some long black setae. In the male 5th and 6th sternites each with a golden tomentum, 7th widely and 8th very weakly sinuate in middle of apical margin, 9th subparallel-sided, deeply and subtriangularly excised at apical margin, both apical protuberances beside the excision acutely pointed.

Aedeagus (Fig. 2) structurally different from that of *O. medius* SHARP from Japan, median lobe simple, without any distinct constrictions on lateral sides, tapering evenly toward apex, its top blunter, ventral depression narrower and shallower, ill-defined backward from subapical part, lateral lobes thinner and slenderer, ventrally and internally curved,



Figs. 2, 3. Aedeagi of *Othius* spp. a, in lateral view; b, in ventral view.  
2, *O. taiwanus* sp. nov. 3, *O. medius* SHARP from Riv. Yodo, Osaka Pref.

all apical four setae much longer, while in *O. medius*, median lobe (Fig. 3) comparatively narrow, laterally constricted at apical third, ventral depression fusiform and well-defined to apex, lateral lobes rather robust and substraight, each lobe with four setae inclusive of two shorter ones.

Holotype: ♂, Alishan, Chiayi Hsien, Taiwan, 17. V. 1981, T. ITO leg. (T. SHIBATA coll.). Paratypes: 1 ♀, ditto, 17. V. 1981, N. ITO leg.; 1 ♀, ditto, 22. VII. 1970, T. KOBAYASHI leg.

The present new species resembles *O. medius* in the secondary sexual feature, that is, the male abdominal sternites of both species are furnished with similar golden tomenta, but the new species is easily distinguished from the latter by the following points: The body wider and robuster, the head much wider and subdepressed, the frontal sulci of head deeper and distincter, the pronotum smoother and more shining, and the elytra more coarsely punctate.

### *Othius parvipennis* (SHIBATA)

*Othiellus parvipennis* SHIBATA, 1973, Trans. Shikoku ent. Soc., 11 (4): 128.

*Othius parvipennis*: SHIBATA, 1986, Ann. Bull. Nichidai Sanko, 24: 114.

In the male the 4th abdominal sternite not characterized, 5th and 6th sternites furnished with subcircular tomenta consisting of rather sparse and greyish pubescence, 7th and 8th very slightly sinuate in

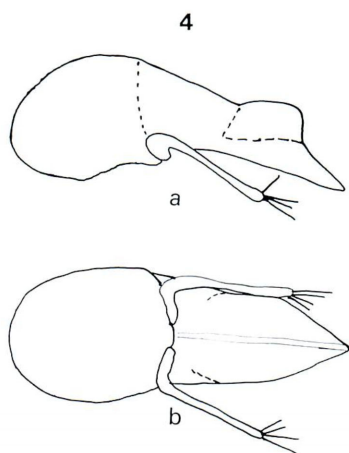


Fig. 4. Aedeagus of *Othius parvipennis* (SHIBATA). a, in lateral view; b, in ventral view.

middle of apical margin. Aedeagus (Fig. 4) relatively large, median lobe subparallel-sided and rapidly narrowed distally from apical fifth, its apex not sharply pointed, ventral depression narrow and distinctly defined, lateral lobes with four long setae at each apex.

Specimen examined: 1 ♂, Alishan, Chiayi Hsien, Taiwan, 17. V. 1981, N. Ito leg.

*Othius shibatai* sp. nov.

Body subdepressed above, narrow, a little shiny, reddish brown, mandibles, frons and vertex of head partially darkened, pubescence light-yellow to brown, setae dark brown to black. Length: 9.0 mm.

Head subquadrate, longer than wide (1.17 : 1), slightly widened behind, sparsely and rather coarsely punctate except frons and median line, and distinctly with a reticulate microsculpture, eyes very small, only one-ninth as long as postgenae, frons clearly with a trapezoidal depression and frontal sulci connected with about three setiferous punctures, clypeo-frontal suture invisible, antennae short and robust, crassate distally, 1st to 4th segments and 11th longer than wide, 2nd slightly shorter than 3rd, 5th to 7th as wide as long and 8th to 10th distinctly wider than long. Underside of head finely and sparsely punctate, and distinctly microsculptured, ultimate segment of maxillary palpi conical, straightly narrowed to apex, mentum clearly and submentum weakly microsculptured, apical margin of the former weakly sinuate.

Pronotum longer than wide (1.36 : 1), slightly narrowed behind, a little longer (1.06 : 1) and a little narrower (1 : 1.09) than head, widest at apical third, disc with series of large punctures except marginal and submarginal setiferous punctures, and wholly with a weak lineolate microsculpture, the second puncture of discal series situated at apical fifth and separating equally from apical and lateral margins, but first and third punctures near margins, a median short impression present on base. Scutellum triangular, not punctate but clearly microsculptured. Elytra short, slightly widened toward apex, a little wider than pronotum (1.09 : 1), coarsely, not closely and somewhat obsoletely punctate, spaces among the punctures coarsened owing to an irregular and rather deep

punctulate-microsculpture, shoulders angled and pointed, with two or three conspicuous long setae; wings degenerate and unfunctional. Prosternum distinctly carinate along middle and strongly microsculptured, pronotal epipleura slightly iridescent.

Abdomen finely and rather sparsely punctate, finely and closely microsculptured, the microsculpture almost reticulate, excepting that on apical areas of all tergites and 7th to 9th sternites lineolate. In the male 5th and 6th sternites bearing respectively a central callosity which slightly and circularly convex, its surface closely microsculptured and little shiny, 7th and 8th very slightly sinuate in middle of apical margin, apical excision of 9th subcircular and relatively shallow.

Aedeagus (Fig. 5) small, median lobe gradually narrowed distally and not pointed at apex, ventral longitudinal depression narrow and shallow, lateral lobes substraight, apically with four rather long setae.

Female unknown.

Holotype: ♂, Alishan, Chiayi Hsien, Taiwan, 3. V. 1983, T. ITO leg. (T. SHIBATA coll.). Paratype: 1 ♂, same data as holotype.

The present new species is similar in the degeneration of wings to *O. parvipennis* (SHIBATA), but different by the eyes extremely smaller, the body lighter in color and much slenderer, the elytral punctures finer and obsolete, the abdominal sternites of the male with distinct callosities, while in *parvipennis* the 5th and 6th sternites of the male each with an obscure tomentum.

### *Othius yushanus* sp. nov.

The present species is closely allied in general appearance to the preceding species. Body more convex above, smaller in size, 6.7–7.3 mm.

Head with frontal depression shallower, eyes larger, one-fifth as long as postgenae, antennae shorter and robuster, 1st to 3rd segments and 11th longer than wide, 2nd as long as 3rd, 4th as wide as long, 5th to 10th distinctly wider than long, gular sutures less close to each other in hind half. Pronotum as wide as head, discal punctures coarser and larger, another punctures placed near apical angles. Scutellum perceptibly punctate. Shoulders of elytra more obtusely angled. Abdominal

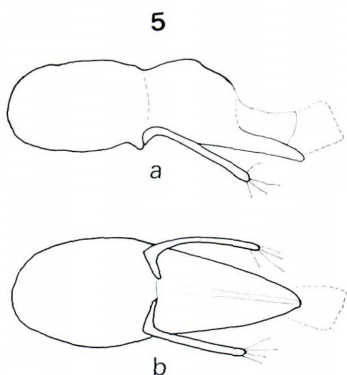


Fig. 5. Aedeagus of *Othius shibatai* sp. nov. a, in lateral view; b, in ventral view.

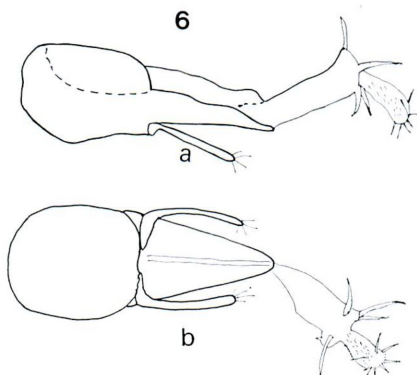


Fig. 6. Aedeagus of *Othius yushanus* sp. nov. a, in lateral view; b, in ventral view.

segments wholly with a lineolate microsculpture, 5th and 6th sternites of the male without any distinct callosities. Aedeagus (Fig. 6) with apical setae of lateral lobes shorter.

Holotype: ♂, Mt. Yushan, Chiayi Hsien, Taiwan, 20. V. 1981, N. ITO leg. (T. SHIBATA coll.). Paratypes: 1 ♂, ditto, 9. VI. 1980, N. ITO leg.; 1 ♀, ditto, 19. V. 1981, T. ITO leg.; 1 ♀, ditto, 2. VIII. 1974, N. ITO leg.; 1 ♀, ditto, 4. VIII. 1974, Y. KIYOYAMA leg.

### *Othius arisanus* (SHIBATA)

*Othiellus arisanus* SHIBATA, 1973, Trans. Shikoku ent. Soc., 11 (4): 126.

*Othius arisanus*: SHIBATA, 1986, Ann. Bull. Nichidai Sanko, 24 : 113.

Specimens examined: 5 ♂♂, 6 ♀♀, Alishan, Chiayi Hsien, Taiwan, 17 & 18. V. 1981, T. ITO and N. ITO leg.; 2 ♂♂, 1 ♀, ditto, 14 & 16. V. 1968, Y. HAYASHI leg.; 2 ♂♂, Mt. Hohuan, Nantou Hsien, Taiwan, 21. VII. 1984, F. KIMURA leg.

The specimens in Mt. Hohuan are darker in color and the elytral and abdominal punctures are a little distincter than those in the type locality.

# Coprophagid-beetles from Northwest Thailand (III)

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**Abstract** This is the third part of a series of papers concerning the research on coprophagid-beetles from Northwest Thailand. Nine new species of the family Scarabaeidae are described: *Cassolus pongchaii* sp. nov., *Phacosoma thailandicum* sp. nov., *P. fallacilaetum* sp. nov., *Onthophagus* (*Paraphanaeomorphus*) *punneeae* sp. nov., *O. (Indachorius) doisuthepensis* sp. nov., *O. (I.) arai* sp. nov., *O. (s. str.) doiinthanonensis* sp. nov., *O. (s. str.) doipuiensis* sp. nov., and *O. (s. str.) lindaee* sp. nov.

*Cassolus pongchaii* sp. nov.

(Fig. 1)

Blackish brown, with outer margin of head, antero-lateral portions of pronotum, mouth parts, and legs yellowish brown, antennal funicles pale yellow; each surface fairly strongly shining. Shortly oval and strongly convex above.

Male: Head rather transverse elliptic, closely punctate; clypeus 4-dentate; genae obtusely but evidently produced laterad, with outer margin slightly angulate at borders of clypeus.

Pronotum rather transverse, closely punctate, the punctures nearly same size as cephalic ones; apical margin feebly bisinuous; base widely arcuate; sides gently rounded; front angles obtuse; hind angles obtusely angulate.

Elytra finely punctate-striate, the punctures in striae small though weakly notching intervals, distance between punctures about 3-4 times their diameter; intervals weakly convex, scattered with minute punctures.

Pygidium convex, rather closely punctate.

Metasternum finely and rather sparsely punctate in middle, rather coarsely and closely so in lateral portions.

Profemur with antero-upper margin feebly angulate at apical  $\frac{2}{5}$ ; protibia widened towards apex and feebly curved, obliquely truncate at apex, armed with three outer teeth, the fore tooth gently bent downwards, the hind one set a little far from the two anteriors, underside of anterior portion armed with small teeth along inner edge; metafemur noticeably dilated in its apical part, the posterior flange forming obtuse angle near knee; metatibia rather remarkably curved and gently thickened towards apex, which is briefly and obliquely truncate at inner corner.

Female: Front angles of pronotum feebly angulate; legs shorter and less strongly curved than in male; outer teeth of protibia simply, strongly pointed; metafemur rather fusiform and simple.

Body length: 3.7–4 mm.

Holotype: ♂, Doi Suthep/ Pui, Chiang Mai Prov., 30. VII. – 5. VIII. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 9 exs., same data as the holotype; 1 ex., Doi Pui, Chiang Mai Prov., 23. X. 1987, MANIT Y. leg.; 2 exs., Doi Inthanon, Chiang Mai Prov., 30. VII. – 3. VIII. 1988, K. MASUMOTO leg.; 1 ex., Phrao-Chiang Dao, Chiang Mai Prov., 9. X. 1988, MANIT Y. leg.; 3 exs., Doi Inthanon, 12. XI. 1988, MANIT Y. leg.; 1 ex., Doi Suthep, Chiang Mai Prov., 20. XI. 1988, K. MASUMOTO leg.

Notes. This new species resembles *Cassolus humeralis* ARROW, 1907 (Fig. 2), from India. Compared with the lectotype of the latter, preserved in the British Museum (Nat. Hist.), the new one is easily distinguishable by the body smaller, the outer margin of head notched at the borders between the clypeus and the genae, the pronotum more closely punctate, the elytral striae finer with much sparser punctures, and the posterior flange of male metafemur less angulate.

This new species is dedicated to Mr. PONCHAI COMEMERU, Deputy Superintendent of Education, Phrao District, Chiang Mai Province, who has been supporting my field survey in the district.

*Phacosoma thailandicum* sp. nov.

(Fig. 3)

Blackish brown, with dorsal surface darker, antennae, mouth parts and gula yellowish brown, hairs on surface pale yellow; dorsal surface gently shining, ventral surface moderately so; elytra clothed with extremely fine and bent hairs. Very broadly oval and gently convex above.

Male: Head somewhat transverse elliptic, closely punctate, the punctures shallow, becoming smaller towards outer portion; clypeus bidentate in front; genae obtusely produced laterad.

Pronotum transverse; apical margin widely arcuate though slightly bisinuous; base simply arcuate; sides gently convergent towards apical  $\frac{1}{3}$ , then rounded, gradually declined to lateral margins; front angles obtuse though rather distinctly produced forwards; hind angles obtuse;

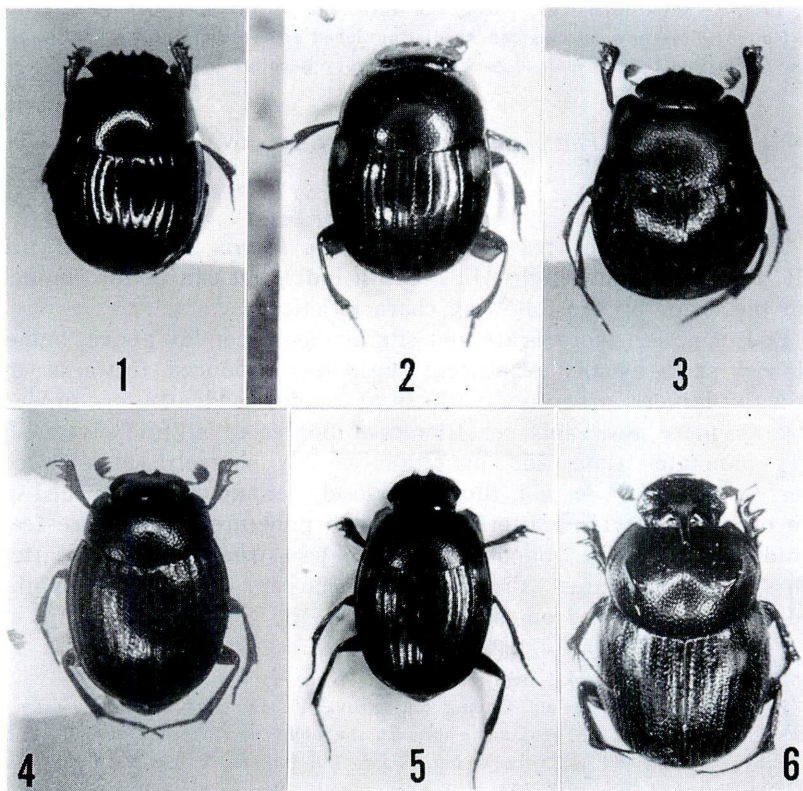
disc moderately, transversely convex, closely punctate, the punctures becoming larger and slightly sparser towards base.

Elytra very shallowly punctate-striate, the punctures set their own diameter apart, notching intervals; intervals very feebly convex, rather closely punctate, the punctures shallow and about half size of pronotal ones.

Pygidium convex, closely and shallowly punctate.

Metasternum fairly closely and shallowly punctate.

Protibia rather broad, armed with three external teeth, the apical two being close with each other; mesotibia gently bent in middle;



Figs. 1-6. 1, *Cassolus pongchaii* sp. nov., ♂, holotype; 2, *C. humeralis* ARROW, ♂, lectotype, in British Museum (Nat. Hist.); 3, *Phacosoma thailandicum* sp. nov., ♂, holotype; 4, *P. fallacilaetum* sp. nov., ♂, holotype; 5, *P. laetum* ARROW, ♂, holotype, in British Museum (Nat. Hist.); 6, *Onthophagus* (*Paraphanaeomorphus*) *punneeae* sp. nov., ♂, holotype.

metafemur strongly thickened and angulate at apical  $\frac{2}{5}$  of hind margin; metatibia noticeably bent in middle, strongly thickened in apical  $\frac{2}{5}$  of inner side, armed with small teeth along inner margin.

Female: Protibia broader though less strongly curved; mesotibia simply curved and gently thickened towards apex; metafemur moderately thickened and not angulate; metatibia gradually thickened towards apex from basal  $\frac{2}{5}$ .

Body length: 4.1-5.3 mm.

Holotype: ♂, Doi Inthanon, Chiang Mai Prov., 30. VII. - 3. VIII. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 45 exs., same data as the holotype; 1 ex., Doi Inthanon, 11. VI. 1988, MANIT Y. leg.; 5 exs., Doi Pui, Chiang Mai Prov., 30. VII. - 5. VIII. 1988, K. MASUMOTO leg.; 4 exs., Doi Inthanon, 15. IX. 1988, K. MASUMOTO leg.

Notes. This new species can be distinguished from other known species of the genus *Phacosoma* by the male legs which are very peculiar in shape.

*Phacosoma fallacilaetum* sp. nov.

(Fig. 4)

This new species resembles *Phacosoma laetum* ARROW, 1931, originally described from Nilgiri Hills, South India, but can be discriminated from the latter by the following characteristics:

Body smaller, more ovate and slightly more convex above, humeral yellowish spots usually evanescent; head less produced forwards; eyes distinctly larger; pronotum with front angles evidently less produced forwards, more noticeably constricted at border of elytra; elytra shallowly punctate-striate, the punctures clearly sparsely set with each other (in case of *P. laetum*, those are closely set and almost touched with each other); intervals scattered with small punctures, which are feebly granulate; sides more rounded; pygidium less strongly convex, scattered with shallow punctures. Protibial teeth sharper; ratio of the length of hind tarsal segments from basal to apical: 1.1, 0.6, 0.4, 0.3, 0.5 (in case of *P. laetum*: 1.2, 0.6, 0.4, 0.3, 0.65).

Body length: 3.7-4.2 mm.

Holotype: ♂, Doi Suthep, Chiang Mai Prov., 16. IX. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 24 exs., same data as the holotype; 3 exs., Doi Pui, Chiang Mai Prov., 27. IX. 1987, MANIT Y. leg.; 1 ex., Doi Pui, 23. X. 1987, MANIT Y. leg.; 1 ex., Doi Pui, 1-2. XII. 1987, MANIT Y. leg.; 2 exs., Phrao-Chiang Dao, Chiang Mai Prov., 14-16. IX. 1988, MANIT Y. leg.

Notes. In the preceding part, I tentatively determined this species as *Phacosoma laetum* ARROW. Through the courtesy of Mr. LES JESSOP, British Museum (Nat. Hist.), I had the opportunity to examine the holotype of ARROW's species (Fig. 5). I express my gratitude to him for his constant assistance to my research project.

This new species also resembles *Phacosoma nitidum* PAULIAN, 1983, from Anai-

malai Hills, South India, but can be distinguished from the latter by the body a little smaller and more ovate, the dorsal surface more closely punctate, the eyes comparatively larger, and the inner side of apex of male protibia gently produced and bent downwards.

It may be noteworthy that PAULIAN (1987) described a subspecies, *Phacosoma tristoides thai*, and also recorded the species, *P. obscurum* BOUCOMONT, both from Doi Suthep, the same type locality as of the present new species.

*Onthophagus (Paraphanaeomorphus) punneeae* sp. nov.

(Fig. 6)

Brownish black, with outer margin of head, mouth parts, tibiae, tarsi and also apical portions of elytra in some individuals more or less lighter in colour; each elytron decorated with reddish yellow patches: larger one occupying basal part of 6th, 7th and 8th intervals, the other smaller occupying 4th and 5th intervals at basal  $\frac{1}{3}$ ; fore body above bearing coppery lustre, elytra gently, rather alutaceously shining, ventral surface moderately so; hairs on dorsal surface pale yellow. Ovate, moderately convex though gently flattened posteriorly, moderately constricted between pronotum and elytra.

Male: Head slightly wider than long, with outer margin feebly reflexed; clypeus moderately arcuate and rugoso-punctate; frons gently dilated and separated by a feeble elevation from clypeus, scattered with larger and smaller punctures intermixed, armed with a fairly long horn, curving backwards; genae rounded.

Pronotum rather closely, finely punctate, clothed with short hairs; apical margin widely arcuate; base rounded; sides moderately produced laterad, with outer margin rounded in anterior half, obliquely and almost straightly narrowed towards base; front angles subrectangular; disc fairly strongly convex, armed with an oblique, feebly curved carina on each side.

Elytra finely punctate-striate, the punctures in striae rather sparsely set, gently notching intervals; intervals fairly wide and feebly convex, finely punctate and haired, the punctures about  $\frac{1}{3}$  times size of pronotal ones, the hairs twice length of pronotal ones.

Pygidium fairly closely punctate, finely haired.

Metasternum coarsely punctate and haired laterally.

Protibia rather stout, with four outer teeth, of which the apical two are fairly noticeable; ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.3, 0.2, 0.15, 0.35; 0.8.

Female: Body a little less convex; head more coarsely rugoso-punctate; clypeus truncate at apex; fronto-clypeal border arcuately

carinate; hind margin of frons straightly carinate; pronotum more closely, rather evenly punctate.

Body length: 5.5–7 mm.

Holotype: ♂, Doi Suthep/ Pui, Chiang Mai Prov., 30. VII. – 5. VIII. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 6 exs., same data as the holotype; 5 exs., Doi Pui/ Doi Suthep, 26. VII. – 1. VIII. 1987, K. MASUMOTO leg.; 1 ex., Maesa Vil., Chiang Mai Prov., 26. VII. – 1. VIII. 1987, K. MASUMOTO leg.; 2 exs., Maesa Vil., 30. VIII. 1987, MANIT Y. leg.; 2 exs., Doi Pui, 23. X. 1987, MANIT Y. leg.; 3 exs., Phrao-Chiang Dao, Chiang Mai Prov., 14–16. IX. 1988, K. MASUMOTO leg.; 14 exs., Doi Suthep, 16. IX. 1988, K. MASUMOTO leg.; 2 exs., Doi Suthep, 20. XI. 1988, K. MASUMOTO leg.; 9 exs., Chiang Dao, 24. XI. 1988, K. MASUMOTO leg.

Notes. In small male individuals, the head is armed with a conical tubercle instead of a horn between the eyes and the anterior margin of pronotum is abruptly declivous, with the posterior edge of declivity feebly sinuous on each side.

This new species is quite peculiar in the subgenus *Paraphanaeomorphus* in having distinct lateral carinae on the pronotum.

*Onthophagus (Indachorius) doisuthepensis* sp. nov.

(Fig. 7)

Blackish brown, with legs lighter in colour, antennal funicles and mouth parts yellowish brown, fore body above bearing coppery metallic lustre, elytron with reddish bands: the basal one extending from 3rd interval to lateral margin and the apical one so from 1st (sutural) interval to lateral margin, and also with a patch at apical  $\frac{2}{5}$  from 7th interval to lateral margin; fore body strongly metallically shining, elytra moderately so, ventral surface moderately shining; body noticeably clothed with rather pale long hairs. Oblong oval, strongly convex though gently flattened posteriorly, moderately constricted between pronotum and elytra.

Male: Head rather parabolically produced forwards, feebly raised posteriorly; clypeus scattered with large and small punctures intermixed, transversely rugose apically, separated from frons by indistinct arcuate carina, with apical margin gently reflexed and briefly truncate at apex, each side of truncate portion slightly angulate; frons weakly dilated, rather closely scattered with punctures; genae gently rounded; vertex armed with a slender horn a little behind eyes, which is slightly pointing backwards, the horn becoming one, or in some cases two, small protuberances in small individuals.

Pronotum rather closely, strongly punctate; apical margin rather steeply inclined, though there is neither excavation nor carina; base gently arcuate, with row of punctures along margin; front angles noticeably acute, gently projecting forwards; sides rather strongly

produced laterad, feebly sinuous before base.

Elytra punctate-striate, the punctures in striae set about 1.5 times their own diameter apart, notching intervals; intervals gently convex, with rows of small punctures along striae, each puncture provided with a microscopic granule.

Pygidium with basal carina, punctate and fairly densely clothed with long hairs.

Metasternum rather closely punctate and fairly densely haired.

Protibia rather elongate, with three sharp outer teeth; ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.3, 0.25, 0.2, 0.3; 0.6.

Female: Body broader; clypeus more produced forwards, more coarsely rugoso-punctate, clearly separated from frons by gently arcuate carina; vertex armed with two small protuberances; pronotum a little more strongly punctate.

Body length: 4-5 mm.

Holotype: ♂, Doi Suthep/ Pui, 1,250 m. alt., Chiang Mai Prov., 30. VII. - 5. VIII. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 42 exs., same data as the holotype; 1 ex., Doi Suthep, 28. V. 1983, Y. KOMIYA leg.; 1 ex., Doi Suthep, 29. V. 1983, Y. KOMIYA leg.; 1 ex., Phuping Palace, Chiang Mai Prov., 31. V. 1983, H. AKIYAMA leg.; 1 ex., Meo Vil.-Doi Suthep, 2. V. 1985, K. MASUMOTO leg.

Notes. In the preceding part I recorded the occurrence of *Onthophagus (Indachorius) koshunensis* BALTHASAR, 1941, originally described from Taiwan. In describing this new species, I have carefully re-examined the former. Although the present species is quite peculiar in having a slender horn on the male vertex, it is very difficult to discriminate in small males from *O. (I.) koshunensis*.

### *Onthophagus (Indachorius) arai* sp. nov.

(Fig. 8)

This new species closely resembles the preceding, but can be distinguished from the latter in following points:

Body slightly darker in colour, each elytron with pale orange patches at humeral portion, postero-lateral portion and also near apex, dorsal surface less shining and more distinctly clothed with pale long hairs; body larger (4.7-5.3 mm), less convex above.

Male: Head more produced forwards, closely rugoso-punctate, with outer margin reflexed; clypeus noticeably emarginate at apex, separated from frons by very slightly arcuate carina; frons longer; genae less produced; vertex armed with thin, slender horn, pointing obliquely backwards, whose basal portion is clearly wider than the remaining portion.

Pronotum a little more strongly and closely punctate; apical margin feebly sinuous on each side; base more strongly produced posteriad; front angles more acute.

Elytron decorated with patches: the humeral one extending from 6th interval to lateral margin, the postero-lateral one so from 7th to lateral margin at apical  $\frac{2}{5}$ , and the apical one on 4th interval at upper edge of apical declivity; intervals weakly depressed along striae, the depressions microshagreened, the remaining portions feebly convex, provided with small granulate punctures along borders.

Pygidium more strongly and a little closely punctate.

Metasternum less closely punctate.

Ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.3, 0.18, 0.16, 0.28; 0.65.

Female: Compared with female of the preceding species, head less convex posteriorly, less produced forwards, more coarsely rugoso-punctate, clypeus more noticeably emarginate at apex, pronotum more closely punctate, and front angles more acutely produced.

Holotype: ♂, Doi Inthanon, Chiang Mai Prov., 30. VII. – 3. VIII. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 10 exs., 15. IX. 1988, same locality and collector as the holotype.

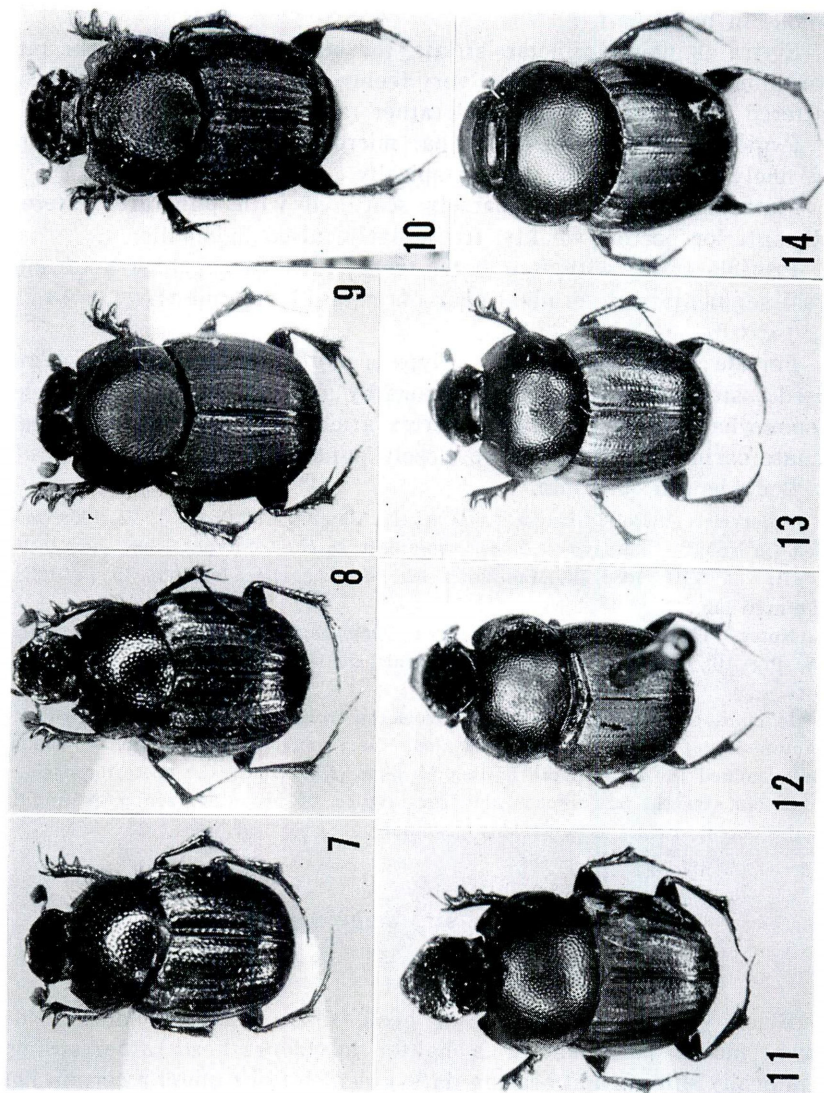
*Onthophagus* (s. str.) *doiinthanonensis* sp. nov.

(Fig. 9)

Piceous, with tibiae and tarsi blackish brown, antennae, mouth parts pale yellowish brown, fore body above often bearing feeble metallic lustre; head and apical and also lateral portions of pronotum weakly shining, large part of pronotum and elytra opaque, ventral surface moderately shining; body clothed with pale fine setae, which are rather noticeable in lateral portions. Oblong oval, rather strongly convex, though gently flattened in middle, moderately constricted between bases of pronotum and elytra.

Male: Head arcuate forwards, gently raised posteriorly; clypeus scattered with large and small punctures intermixed, separated from frons by arcuate carina; frons weakly dilated, scattered with punctures, which are a little smaller than clypeal ones; genae feebly, roundly produced; vertex armed with a short, erect conical horn.

Pronotum rather closely punctate, the punctures small and slightly granulate, somewhat rasp-like in anterior portion, those in posterior portion becoming shallower and annular; apical margin steeply inclined and smooth; base roundly produced; front angles subrectangular with corners blunt; sides roundly produced laterad though very feebly



Figs. 7-14. 7, *Onthophagus (Indachorius) doisuthepensis* sp. nov., ♂, holotype; 8, *O. (I.) arai* sp. nov., ♂, holotype; 9, *O. (s. str.) dointhanonensis* sp. nov., ♂, holotype; 10, *O. (s. str.) sikkimensis* GILLET, ♀, in British Museum (Nat. Hist.); 11, *O. (s. str.) doipuiensis* sp. nov., ♂, holotype; 12, *O. (s. str.) mirandus* ARROW, ♂, paralectotype, in British Museum (Nat. Hist.); 13, *O. (s. str.) lindae* sp. nov., ♂, holotype; 14, *O. (s. str.) waterstradi* BOUCOMONT, ♀, in British Museum (Nat. Hist.).

sinuous in basal half.

Elytra shallowly punctate-striate, the striae finely ridged, the punctures almost obsolete; intervals very feebly convex and microshagreened, scattered with fine granules, and rather rasp-like.

Pygidium without basal carina, microshagreened basally, punctate and finely haired, gently shining apically.

Metasternum smooth, sparsely scattered with punctures laterally, with anterior portion weakly, triangularly raised in middle.

Protibia stout, with four outer teeth; ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.4, 0.25, 0.2, 0.4; 0.8.

Female: Body more robust; clypeus more produced forwards, more raised posteriorly, separated from frons by a more distinct carina, which is somewhat widely triangular; vertex armed with a transverse, feebly arcuate carina; pronotum more closely punctate.

Body length: 5-6 mm.

Holotype: ♂, Doi Inthanon, 1,650 m. alt., Chiang Mai Prov., 4. VI. 1988, MANIT Y. leg. (in NSMT). Paratypes: 2 exs., same data as the holotype; 1 ex., same locality, 30. VII. - 3. VIII. 1988, K. MASUMOTO leg.; 7 exs., same locality, 15. IX. 1988, K. MASUMOTO leg.

Notes. This new species resembles *Onthophagus* (s. str.) *sikkimensis* GILLET, 1925 (Fig. 10), but can be easily distinguished from the latter by the following points:

In male, the clypeus is separated from the frons by an arcuate carina, and the pronotum is not armed with a carina along the front declivity. In female, though I have examined the type in the British Museum (Nat. Hist.), the posterior carina on head is not straight but arcuate, the front angles of pronotum are more angulate, and the dorsal surface is noticeably granulate.

*Onthophagus* (s. str.) *doipuiensis* sp. nov.

(Fig. 11)

Black, with outer margin of head, tibiae and tarsi dark reddish brown, mouth parts and gula lighter in colour; head rather strongly, metallically shining and bearing dark greenish tinge under a certain light, pronotum moderately and elytra feebly shining though the former bears slight metallic lustre, ventral surface moderately shining. Broadly oval, convex, gently constricted between pronotum and elytra.

Male: Head produced forwards, sparsely scattered with small punctures; clypeus triangular in dorsal view with rounded apex, which are produced and reflexed above; genae rounded; frons gently dilated, with fronto-clypeal border gently ridged; vertex raised and produced backwards,

forming outwardly directed angles, which continue a triangular lamina, the middle of lamina is narrowed and produced upwards as a short, slender erect horn.

Pronotum fairly closely punctate; apical margin widely emarginate; base moderately arcuate; sides rounded; front angles rather acute; anterior margin of disc almost vertical and impunctate, feebly hollowed behind cephalic horn.

Elytra shallowly punctate-striate, the punctures feebly notching intervals; intervals slightly convex, feebly microshagreened, with rows of granules.

Pygidium moderately shining, rather closely punctate and haired.

Metasternum scattered with rather strong punctures.

Protibia rather slender, with four outer teeth; ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.3, 0.25, 0.2, 0.3; 0.8.

Female: Body a little less convex; head semicircular, more coarsely and a little more closely punctate, with fronto-clypeal border more noticeably, roundly ridged; vertex with transverse carina; pronotum with anterior margin feebly produced medially.

Body length: 6.5–6.7 mm.

Holotype: ♂, Doi Suthep, Chiang Mai Prov., 1–2. XII. 1987, MANIT Y. leg. (in NSMT). Paratypes: 8 exs., same data as the holotype.

Notes. As this new species resembles *Onthophagus* (s. str.) *mirandus* ARROW, 1931 (Fig. 12), I have compared the former with the paralectotype of the latter, preserved in the British Museum (Nat. Hist.). The male of the present species can be distinguished from that of the latter by the smaller and darker body, the head narrower with the apex not bilobed but simply parabolic, and the cephalic horn not spatulate but slender. Although females of the two species resemble each other more closely than males, *O.* (s. str.) *doipuiensis* can be distinguished from *O.* (s. str.) *mirandus* by the outer margin of head evenly rounded (in case of the latter, the clypeus is weakly excised medially with each side of the excision roundly produced, and the genae are obtusely produced laterad).

*Onthophagus* (s. str.) *lindaee* sp. nov.

(Fig. 13)

Blackish brown, with outer margins of head and pronotum, tibiae, tarsi, mouth parts, gula, sometimes apical portions of elytra, etc. lighter in colour, antennae and hairs on surfaces yellow; head moderately shining, bearing dark greenish metallic lustre, pronotum and elytra moderately shining though anterior declivity of pronotum rather gently so, ventral surface moderately shining; elytron decorated with yellowish

patches, occupying 2nd, 3rd and 4th, and also 6th, 7th and 8th intervals basally. Ovate, rather strongly convex though gently flattened posteriorly; moderately constricted between pronotum and elytra.

Male: Head rather triangular with rounded apex, which is gently reflexed, scattered with minute punctures; clypeus and frons not separated by any carina or groove but feebly, roundly raised at the middle of border; hind margin of frons armed with low transverse carina; genae obtuse.

Pronotum closely punctate and rather noticeably haired; apical margin widely emarginate; base rounded; sides moderately, roundly produced laterad; front angles subrectangular; disc fairly strongly convex, with a shallow median groove in posterior half, a rather steep declivity in anterior  $\frac{1}{3}$ , which is rather alutaceously, dimly shining and sparsely, finely punctate, and also with an oblong glabrous part just before each hind angle.

Elytra finely punctate-striate, the punctures small though gently notching intervals; intervals nearly flat or feebly convex, fairly closely, finely punctate, each puncture with a fine hair.

Pygidium fairly closely punctate, finely haired.

Metasternum rather closely and coarsely punctate, haired laterally.

Protibia rather stout, with four outer teeth, apical thorn rather noticeably bold; ratio of the length of metatarsal segments and terminal spur of metatibia as follows: 1.0, 0.33, 0.2, 0.15, 0.35; 0.75.

Female: Body less convex, more ovate; head less produced forwards, more closely punctate; clypeus rugoso-punctate and separated from frons by arcuate carina; vertex with transverse carina, which lies between eyes; pronotum almost evenly convex, a little more strongly punctate.

Body length: 6.2-8.2 mm.

Holotype: ♂, Doi Suthep, Chiang Mai Prov., 16. IX. 1988, K. MASUMOTO leg. (in NSMT). Paratypes: 54 exs., same data as the holotype; 1 ex., Meo Vil.-Doi Suthep, 2. V. 1985, K. MASUMOTO leg.; 9 exs., Doi Pui/ Doi Suthep, 26. VII. - 1. VIII. 1987, K. MASUMOTO leg.; 2 exs., Phrao Distr., Chiang Mai Prov., 10. VIII. 1987, MANIT Y. leg.; 1 ex., Doi Pui, 27. IX. 1987, MANIT Y. leg.; 5 exs., Doi Suthep, 28. IX. 1987, MANIT Y. leg.; 10 exs., Doi Suthep, 29. V. 1988, MANIT Y. leg.; 2 exs., Phrao Dist., 1. VI. 1988, MANIT Y. leg.; 10 exs., Doi Suthep, 13. IX. 1988, MANIT Y. leg.

Notes. This new species resembles *Onthophagus* (s. str.) *waterstradi* BOUCOMONT, 1914 (Fig. 14), originally described from Borneo, but can be distinguished from the latter by the following points:

In male, the posterior carina of head is not acute at the middle but just gently raised and the pronotum is strongly convex with the anterior margin fairly abruptly inclined. In female, compared with the specimen which was determined by BOUCOMONT himself, the body is a little more elongate and less convex, the clypeus is less produced forwards, and the pronotum is almost evenly, moderately convex.

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## 国際動物命名委員会からのお願い (9)

The following applications were published on 16 December 1988 in Vol. 45, Part 4 of the Bulletin of Zoological Nomenclature. Comment or advice on these applications is invited for publication in the Bulletin and should be sent to the Executive Secretary, I. C. Z. N., British Museum (Natural History), Cromwell Road, London SW7 5BD, U. K.

## Case No.

- 2651 *Aleuropteryx* Löw, 1885 (Neuroptera): proposed designation of *Aleuropteryx loewii* Klapálek, 1894 as the type species.
- 2655 *Sialis* Latreille, 1802 (Megaloptera): proposed conservation by the confirmation of *Phryganea phalaenoides* Linnaeus, 1758 as the type species of *Semblis* Fabricius, 1775 (Trichoptera).
- 2585 *Ophonus* Dejean, 1821 and *Tachys* Dejean, 1821 (Coleoptera): proposed designation of type species.
- 2623 *Papilio carthami* Hübner, [1813] and *Syrichthus serratulae major* Staudinger, 1879 (currently both in *Pyrgus*; Lepidoptera): proposed conservation of the names *carthami* and *major*.
- 2654 Rapport sur les Myodaires du Docteur Robineau Desvoidy, (1826): proposed nomenclatural suppression.
- 2629 *Physcus* Howard, 1895 (Hymenoptera): proposed conservation.

A New Species of the Genus *Chrysochroa* SOLIER  
from Malaysia  
(Coleoptera, Buprestidae)

By KÔYÔ AKIYAMA

15-10, Daidô 2-chôme, Kanazawa-ku, Yokohama 236

**Abstract** A beautiful new species of the genus *Chrysochroa* from Malaysia is described under the name of *C. maruyamai*, with keys and figures to the allied species.

Through the courtesy of my friend, Mr. KIYOSHI MARUYAMA, I was able to examine specimens of beautiful buprestid beetles belonging to the genus *Chrysochroa* collected in Cameron Highland, Malaysia. After careful study, it was determined that it is an undescribed species closely related to *C. edwardsi* HOPE, from Sikkim and Assam, *C. saundersi* SAUNDERS, from Thailand and Laos, *C. rondoni* DESCARPENTRIES, from Laos, Thailand and Cochin-China, *C. tonkinensis* DESCARPENTRIES, from Tonkin, and *C. deyrollei* SAUNDERS, from India.

In this paper, the above mentioned species is described, and keys are presented to all the allied species. The holotype will be deposited in the National Science Museum (Nat. Hist.), Tokyo.

I wish to express my sincere gratitude to Dr. YOSHIHIKO KUROSAWA, Tokyo, for his constant guidance, to Prof. GAYLE H. NELSON, head of the Department of Anatomy, College of Osteopathic Medicine of the Pacific, Pomona, California, for his kindness in reading the original manuscript and many invaluable suggestions, to Mr. KIMIO MASUMOTO, Yokohama City, for his invaluable advice, to Dr. SVATOPLUK BÍLÝ, Department of Entomology, National Museum, Prague, and Mr. TIERI LANDER, Genève, for loaning me specimens in their care, to Mr. KIYOSHI MARUYAMA, Kawasaki City, and Dr. SADAHIRO OHMOMO, National Grassland Research Institute, for their kind offer of the materials, and to Mr. KAORU SAKAI, Tokyo, for taking excellent photographs.

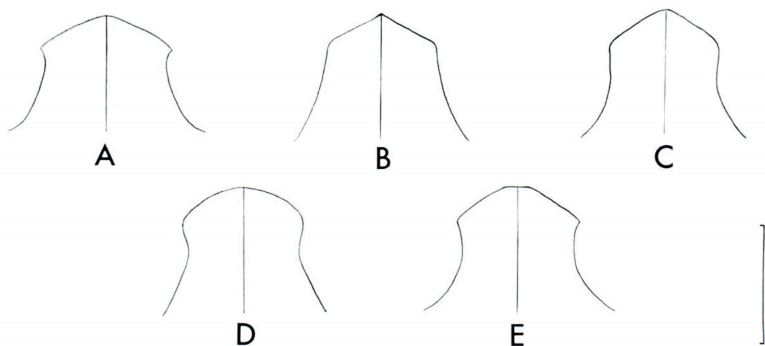
*Chrysochroa maruyamai* sp. nov.  
(Figs. 4, 8, 14, D, I, N)

Male. Body large, shining; head deeply metallic either greenish-blue or bluish-green with part of frons golden cupreous; eyes chocolate brown; mandibles and around the antennal cavities deeply metallic

blue; labrum black; antennae coppery black except first segment obscure coppery green; pronotum metallic golden green with sides of pronotum metallic purplish-red; elytra with transverse ivory bands at middle (Fig. 4), general color metallic greenish-blue with parts of basal, lateral, and sutural margins and around the ivory bands deeply purplish-blue; ventral surface metallic golden green with cupreous tinge, except sides of pro-, meso- and metasterna deep blue; coxae, trochanters, femora and tibiae deeply metallic greenish-blue; tibial spurs black; tarsi bronzy-blue except last segment and claws coppery.

Head deeply sulcate between eyes, with deep median groove running from vertex to just above clypeus; surface sparsely punctate on vertex, strongly, irregularly, confluent rugoso-punctate on frons; clypeal suture absent; clypeus coarsely punctate, with anterior margin deeply arcuately emarginate, densely clothed with long golden-brownish setae on each side; antennal cavities large; antennae long, coarsely clothed with semirecumbent white brown setae on inner margins, and short inconspicuous semirecumbent setae on outer margins; first segment the largest, second the shortest, subglobular, third stout, fourth to terminal segments serrate, ratio of the length of each segment:—16 : 4 : 11 : 12 : 10 : 10 : 9 : 9 : 9 : 8 : 9.

Pronotum transverse, subtriangular, about 1.45 times as wide as long, widest near base; sides moderately arcuate and attenuate from base to apex; anterior margin shallowly emarginate with median lobe obsolete and feebly bisinuate; anterior angles subrectangular, posterior margin bisinuate, with median lobe arcuately produced; posterior angles blunt, with corners acutely pointed; disc flat at middle, depressed on

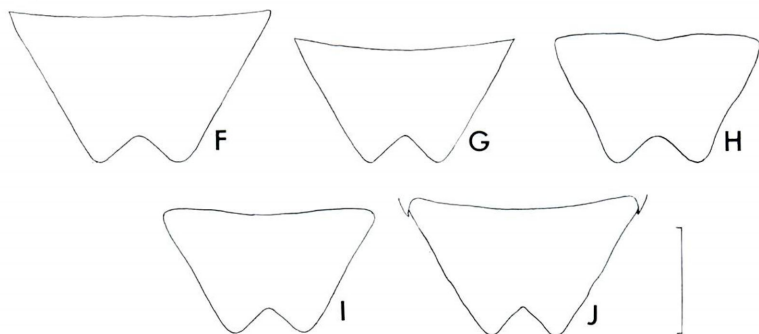


Figs. A-E. Metasternal processes, males: A, *C. deyrollei*; B, *C. edwardsi*; C, *C. saundersi*; D, *C. maruyamai*; E, *C. tonkinensis*. Scale: 2 mm.

each side, with median carina from apex to base; surface irregularly punctate, punctures sparse at middle, becoming strongly rugose and confluent towards the sides.

Elytra about 2.57 times as long as wide, about 5.14 times as long as pronotum, and widest just past middle; sides obliquely expanding to humeri, feebly concave to middle, then arcuately attenuate to apices, which are serrate with sutural angles sharply dentate; disc with four inconspicuous costae, which are slightly elevated and run from basal third to apex; surface finely punctate, with intervals feebly rugoso-reticulate.

Ventral surface coarsely punctate, densely clothed with short semi-recumbent silver-whitish setae on each side except prosternum. Prosternum feebly rugoso-punctate around the prosternal process, with anterior margin almost straight and median lobe feebly emarginate; prosternal process flattened or slightly convex and sides slightly narrowed by anterior coxal cavities. Metasternal process flat and subobcordate (Fig. D). First visible abdominal sternite flattened between posterior coxae; last visible abdominal sternite deeply, broadly and triangularly emarginate (Fig. I).

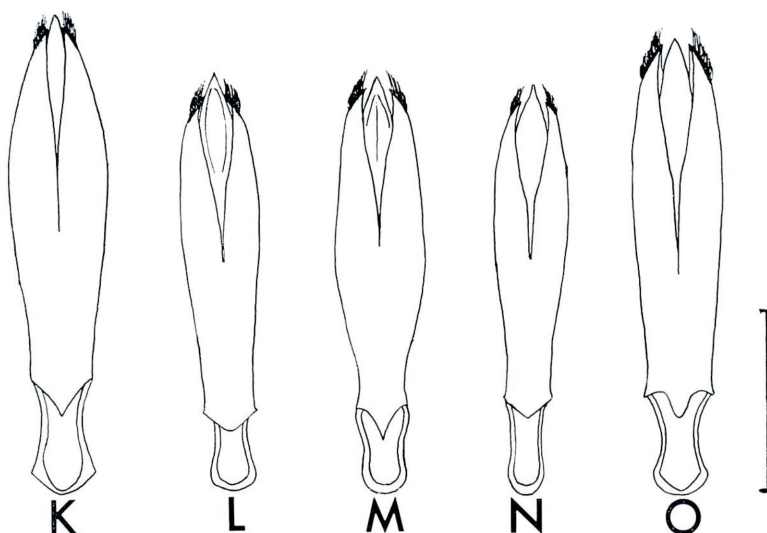


Figs. F-J. Last visible abdominal sternites, males: F, *C. deyrollei*; G, *C. edwardsi*; H, *C. saundersi*; I, *C. maruyamai*; J, *C. tonkinensis*.  
Scale: 2 mm.

Legs simple, coarsely punctate, and coarsely clothed with semirecumbent silver-whitish setae; protibiae slightly arcuate, clothed with light brown coarse setae on inner side at apical half; mesotibiae slightly arcuate; metatibiae almost straight, coarsely clothed with light brown coarse setae on outer side.

Male genitalia (Fig. N).

Female. More robust than male, the bands of elytra more transverse



Figs. K-O. Male genitalia (dorsal view): K, *C. deyrollei*; L, *C. edwardsi*; M, *C. saundersi*; N, *C. maruyamai*; O, *C. tonkinensis*. Scale: 2 mm.

(Fig. 8) and last visible abdominal sternite rounded with a small incision at middle.

Length: 43.5-54.0 mm; width: 13.5-16.5 mm.

Holotype: ♂, Tana Rata, Cameron Highland, Malaysia, V. 1985. Allotype: ♀, 19 miles or Tana Rata, Cameron Highland, late April 1987, WONG TET FATT leg. Paratypes: 2 ♂ 1 ♀, same data as the holotype; 1 ♂, same locality as the holotype, 1979; 4 ♂ 5 ♀, same data as the allotype.

Notes. This new species is closely allied to *C. saundersi* SAUNDERS, from Laos and Thailand, but can be distinguished from it by the coloration of the body, more transverse bands of the elytra, the shape of the metasternal process, sparser setae on ventral surface at each side, and the shape of the male genitalia.

It differs from the other species as indicated in the following keys.

#### Key to males of *C. maruyamai* AKIYAMA and allied species<sup>1)</sup>

1. Each elytron with a transverse spot (Figs. 1-2) ..... 2

<sup>1)</sup> I have not seen *C. rondoni* ♂ and *C. deyrollei* ♀. *C. rondoni* and *C. tonkinensis* were described by DESCARPENTRIES, both as subspecies of *C. edwardsi*. However, I have examined these, and have concluded that they represent valid species based on features included in the keys.

- Each elytron with a transverse band (Figs. 3-5)..... 3
- 2. Elytra light green with golden tinge; anterior margin of pronotum with a small incision at middle (Fig. 1); sides of metasternal process strongly arcuately emarginate (Fig. 1); sides of metasternum and each abdominal sternite densely clothed with long recumbent velvety golden setae (Fig. 11).....  
..... *C. deyrollei* SAUNDERS (India, E. Pakistan)
- Elytra dark green; anterior margin of pronotum without a incision at middle (Fig. 2); sides of metasternal process feebly arcuately emarginate (Fig. B); sides of metasternum and each abdominal sternite sparsely, coarsely clothed with inconspicuous recumbent silver-whitish setae (Fig. 12).....  
..... *C. edwardsi* HOPE (Assam, Sikkim)
- 3. Body robust (Fig. 5); each elytral transverse band narrow (Fig. 5); elytra deep green; metasternal process truncate at tip (Fig. E).....  
..... *C. tonkinensis* DESCARPENTRIES (Tonkin)
- Body long and slender (Figs. 3-4); each elytral transverse band broad (Figs. 3-4); elytra deep blue or light green with golden red tinge; metasternal process arcuately rounded at tip (Figs. C, D)..... 4
- 4. Elytra deep blue; pronotum coarsely punctate (Fig. 4); each elytral band broader (Fig. 4); metasternal process flat; anterior margin of metasternal process moderately arcuate (Fig. D); sides of metasternum and each abdominal sternite sparsely, coarsely clothed with short recumbent silky silver-whitish setae (Fig. 14); basal piece long and slender (Fig. N).....*C. maruyamai* sp. nov. (Malaysia)
- Elytra light green with golden rose tinge; pronotum densely punctate (Fig. 3); each elytron narrower (Fig. 3); metasternal process convex; anterior margin of metasternal process strongly arcuate (Fig. C); sides of metasternum and each abdominal sternite densely clothed with long recumbent velvety golden setae (Fig. 13); basal piece robust (Fig. M).....*C. saundersi* SAUNDERS (Laos, Thailand)

### Key to females of *C. maruyamai* AKIYAMA and allied species<sup>1)</sup>

- 1. Each elytron with a transverse spot (Fig. 6); anterior margin of pronotum without an incision at middle ..... *C. edwardsi* HOPE
- Each elytron with a transverse band (Figs. 7-10); anterior margin of pronotum with an incision at middle ..... 2
- 2. Elytra dark metallic green with blue; the bands of elytra very broad (Fig. 8).....  
..... *C. maruyamai* sp. nov.
- Elytra dark metallic green with purplish tinge; the bands of elytra narrow (Figs. 7, 9, 10) ..... 3
- 3. Body robust (Fig. 9); ventral surface cupreous red .....  
..... *C. tonkinensis* DESCARPENTRIES
- Body long and slender (Figs. 7, 10); ventral surface golden-red or purplish-blue... 4
- 4. Elytra green with generally purplish tinge; ventral surface golden-red; metasternal process convex at tip; sides of metasternum and abdominal sternites with recumbent silky silver-whitish setae ..... *C. saundersi* SAUNDERS
- Elytra green with purplish tinge at basal margin and apical margin; ventral surface purplish-blue; metasternal process flat at tip; sides of metasternum and

abdominal sternites with recumbent powdery white setae .....  
 ..... *C. rondoni* DESCARPENTRIES

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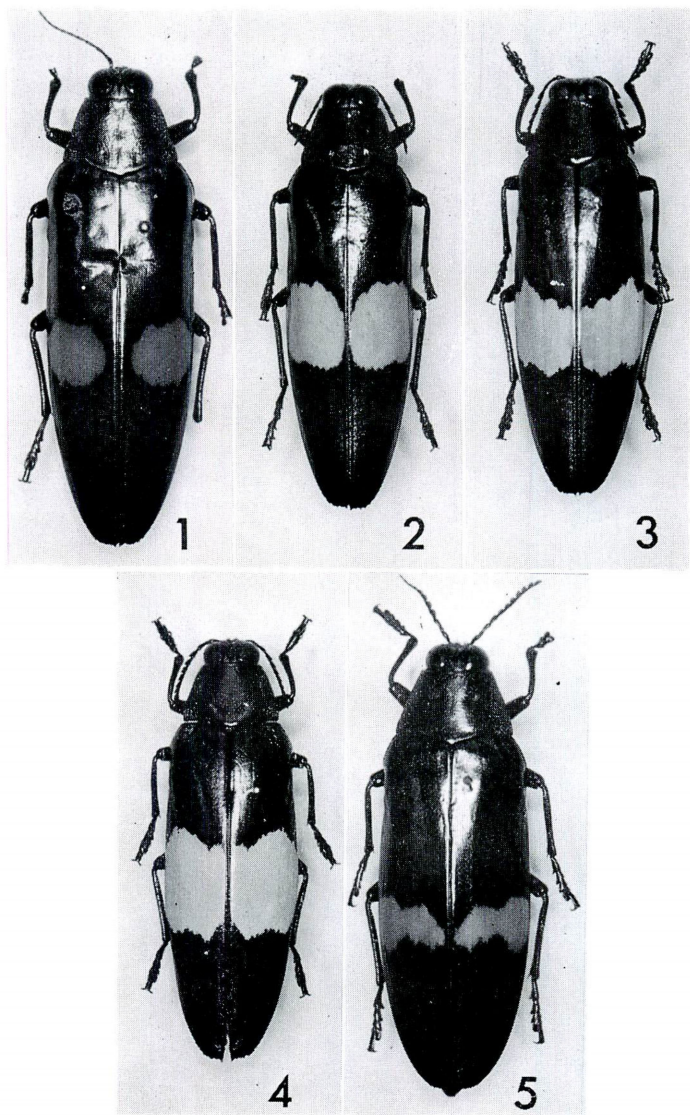
#### Explanation of Plates 5-7

Pls. 5 & 6, Figs. 1-10. Dorsal views:

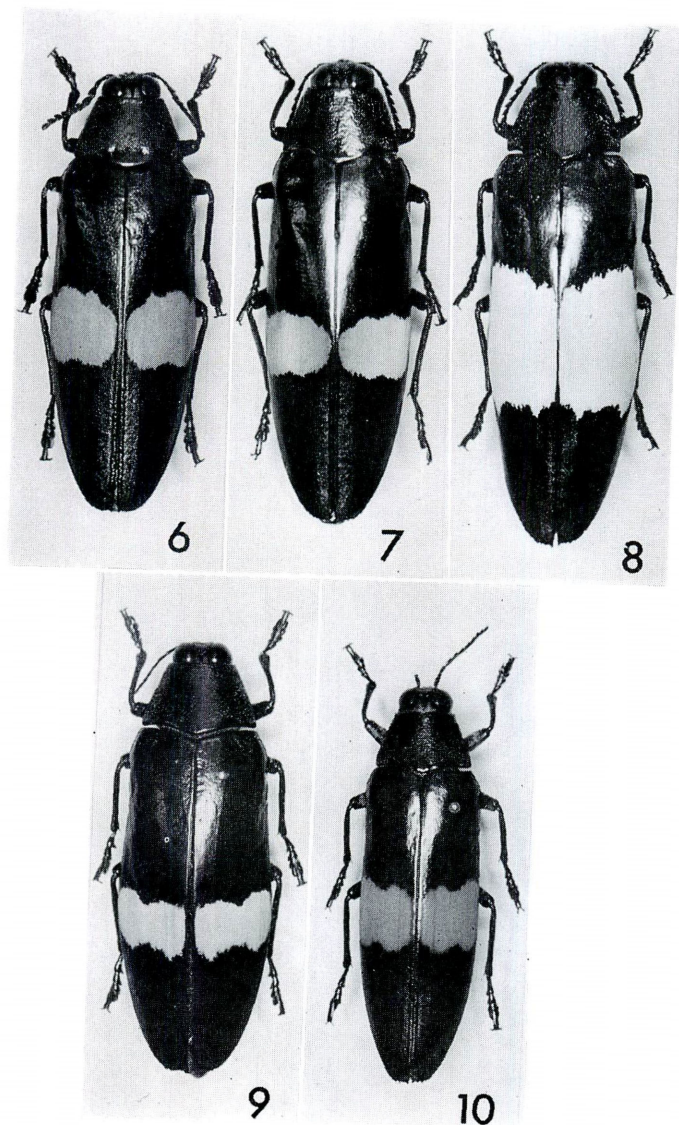
- 1, *C. deyrollei* SAUNDERS, ♂; 2, 6, *C. edwardsi* HOPE, 2, ♂, 6, ♀; 3, 7, *C. saundersi* SAUNDERS, 3, ♂, 7, ♀; 4, 8, *C. maruyamai* sp. nov., 4, ♂ (holotype), 8, ♀ (allotype); 5, 9, *C. tonkinensis* DESCARPENTRIES, 5, ♂, 9, ♀; 10, *C. rondoni* DESCARPENTRIES, ♀.

Pl. 7, Figs. 11-15. Ventral views, males:

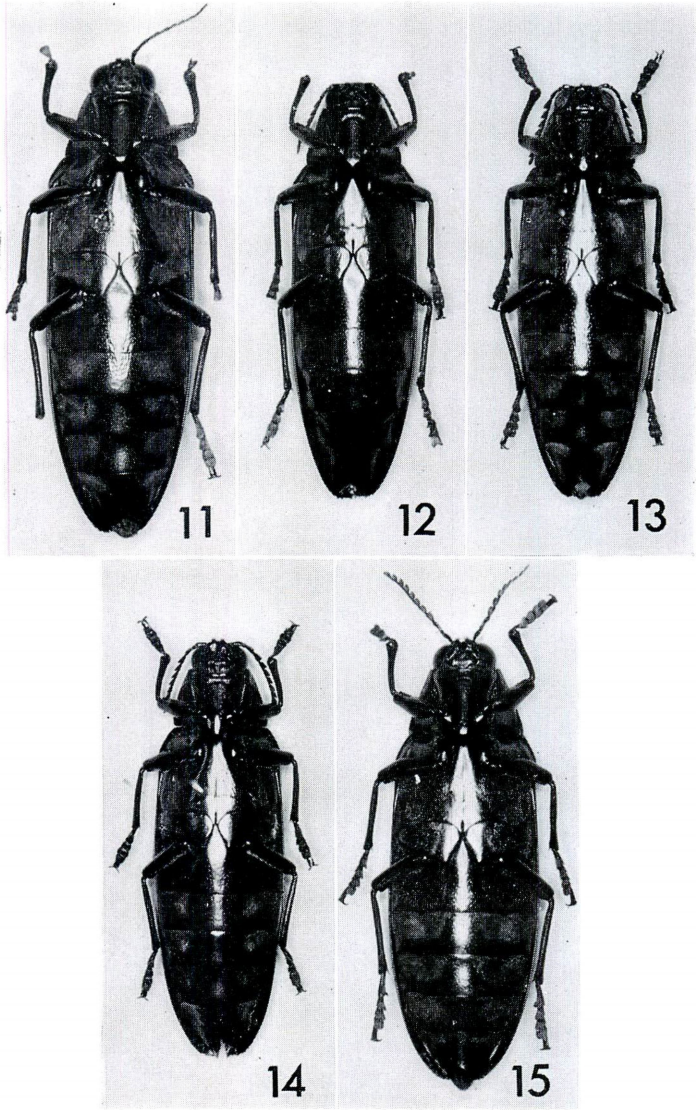
- C. deyrollei*; 12, *C. edwardsi*; 13, *C. saundersi*; 14, *C. maruyamai*; 15, *C. tonkinensis*.











(K. SAKAI photo.)



# Two New Species of *Gonioctena* (*Brachyphytodecta*)

CHEVROLAT (Coleoptera, Chrysomelidae :  
Chrysomelinae) from South Asia and a Note  
on *Gonioctena issikii* CHÛJÔ, 1958

By BLAGOY GRUEV

University of Plovdiv, Bulgaria

The subgenus *Brachyphytodecta* BECHYNÉ, 1948 has been known till now with 6 species from E. Siberia, China, Korea, Japan and Vietnam (GRESSITT & KIMOTO, 1963; KIMOTO & GRESSITT, 1981). The species *G. coccinella* CHEN was transferred by KIMOTO & GRESSITT (1981) from *Asiphytodecta* to *Brachyphytodecta*, then MEDVEDEV (1987) returned it to *Asiphytodecta* again.

In the present paper two new species for science and the species *G. issikii* CHÛJÔ are added to this subgenus.

I am grateful to Dr. P. BERON of the National Natural History Museum in Sofia and to Mrs. S. SHUTE of the British Museum (Natural History) in London for the loan of the material of both new species, and to Prof. Dr. S. KIMOTO of the University of Kurume for the loan of a specimen of *G. issikii*, for the confirmation of the new species and for other valuable assistance.

## Key to species of subgenus *Brachyphytodecta*

- 1 (2) Femora red, tibiae and tarsi black; general color of body red; length 12 mm.  
N. Vietnam. .... *G. lesnei* (CHEN)
- 2 (1) Femora black or partly black.
- 3 (6) Pronotum and elytron concolorous, reddish to brownish.
- 4 (5) Scutellum black; length 5-6 mm. E. Siberia, China, Korea, N. Vietnam. ....  
..... *G. fulva* (MOTSCHULSKY)
- 5 (4) Scutellum brown or dark brown; general color reddish to yellowish brown;  
legs entirely or almost entirely black; length 5.5-7.0 mm. China, Vietnam. ....  
..... *G. fulvipennis* (JACOBY)
- 6 (3) Pronotum and elytron not concolorous.
- 7 (12) Elytra nearly as broad as long.
- 8 (11) Pronotum reddish.
- 9 (10) Dorsum dark red; scutellum and lateral portion of elytron black; length

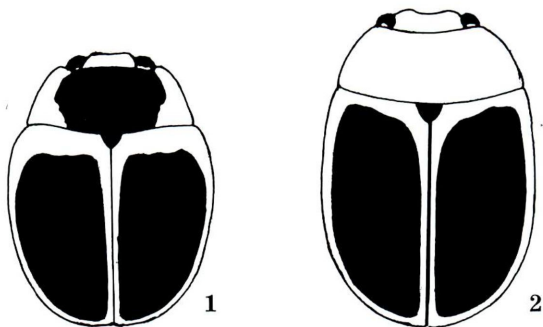
- 5.5 mm. SW China. .... *G. semiglobosa* (ACHARD)
- 10 (9) Head and pronotum red or yellowish red; elytron black; length 5-6 mm. SW China. .... *G. melanoptera* (CHEN et YUNG)
- 11 (8) Pronotum black with sides reddish; elytron black with periphery reddish (Fig. 1); length 3.05-3.25 mm. Nepal. .... *G. nepala* sp. n.
- 12 (7) Elytra distinctly longer than broad.
- 13 (16) Elytron black with periphery reddish.
- 14 (15) Body moderately elongate (Fig. 2); femora black with basis reddish; head and pronotum reddish; black area of elytron sharply delimited; scutellum less than two times as broad as long; length 5.85 mm. SE China. .... *G. foochowensis* sp. n.
- 15 (14) Body more elongate with nearly parallel sides; femora entirely black; head black; pronotum with basal margin narrowly tinged with black or black with sides reddish; black area of elytron not sharply delimited; scutellum two times broader than long; length 5-6 mm. Taiwan. .... *G. issikii* (CHÛJÔ)
- 16 (13) Elytron not so colored.
- 17 (18) Head and prothorax pitchy or black, their sides and undersides generally reddish; elytron black or pitchy; length 4.5-5.0 mm. E. Siberia, China, Korea, N. Vietnam. .... *G. fulva* (MOTSCHULSKY)
- 18 (17) Head (except appendages) and prothorax entirely black; elytron reddish, sometimes stained with black; length 5.5 mm. Japan, ? N. China. .... *G. rubripennis* BALY

*Gonioctena (Brachyphytodecta) nepala* sp. n.

*Type localities.* Nepal: National Park Sagarmatha, 2,900-3,200 m, from Jorsale to Namche Bridge, 13. X. 1987, leg. P. BERON, ♀, holotype (National Natural History Museum, Sofia); Jiri-Namche trek, both sides of Taksindu Pass, 2,900-3,070 m, 13. XI. 1987, leg. P. BERON, 1 ♀, paratype (author's collection).

*Description.* Body convex, hemispherical, smooth and shining (Fig. 1). Head reddish with labrum blackish brown; antennae with apical 3-4 segments black; pronotum with disc black and sides reddish; scutellum black; elytron black with periphery reddish; black parts of pronotum and elytra slightly brassy shining; femora brownish black with basis reddish; tibiae reddish; tarsi reddish brown or darkened; underside of body (except sides of prothorax) black.

Head unclearly or finely and not closely punctate; clypeus distinctly separated from frons with V-shaped darkened line. Antennae nearly as long as half length of body; last 3 segments much thicker than those of flagellum and not flattened. Pronotum  $2\frac{1}{2}$  times as broad as long, strongly narrowed anteriorly, with slightly curved sides and without setigerous punctures; lateral margins fine and not visible from above; punctures delicate but clear, not dense. Elytron without humeral tubercles, with 8 regular rows of small punctures, with a row of punc-



Figs. 1, 2. 1. *Gonioctena nepala* sp. n.  
2. *Gonioctena foochowensis* sp. n.

tures close to epipleura, and with a short (5-6 punctures) scutellar row; interstices wide and unclearly punctulate. Scutellum triangular almost as long as broad, with 5-6 punctures in front. Tibiae not excavated at the apex and not armed with a spine. Claws simple.

Length 3.05-3.25 mm; width 2.45-2.70 mm.

*Gonioctena (Brachyphytodecta) foochowensis* sp. n.

*Type locality.* China: Foochow, leg. C. R. KELLOQQ, "Field No. 980, Brit. Mus., 1981-315", ♀, holotype (British Museum/Natural History).

*Description.* Body moderately elongate, smooth and shining (Fig. 2). Head, pronotum and 3 basal segments of antennae reddish; scutellum black; elytron black with periphery reddish; underside of body reddish; legs brownish black, basal part of femora reddish.

Head with strong and close punctures near eyes and on vertex; frons almost impunctate; clypeus distinctly separated from frons with V-shaped line. Pronotum without setigerous punctures, thrice as broad as long, narrowed anteriorly and with sides broadly rounded; centre of disc finely and closely punctured; sides of disc with large stripe of strong and deep punctures; lateral areas with 5-8 big punctures; lateral margins thin and not visible from above. Elytron with very slightly raised humeral tubercles, with 9 regular rows of moderately strong punctures, with one row of punctures close to epipleura, and with scutellar row of 10-11 punctures; interstices finely punctulate. Scutellum as broad as long, triangular with rounded sides, without punctures. Tibiae excavated at the apex and strongly triangularly toothed on the outer face near the apex. Claws appendiculate.

Length 5.85 mm; width 3.85 mm.

The new species differs from *G. issikii* in having: Body more rounded; rows of punctures and punctures of interstices of elytron finer; black area of elytron sharply delimited; punctures of sides of pronotal disc more compact; scutellum not two times as broad as long; femora with basis reddish.

*Gonioctena (Brachyphytodecta) issikii* (CHÛJÔ, 1958), New combination

*Phytodecta (Asiphytodecta) issikii* CHÛJÔ, 1958, Quart. Journ. Taiwan Mus., 11 : 69-71.

Material examined: "Lienhwachi, Formosa, 29. VI. 1972, leg. Y. KIYOYAMA," det. S. KIMOTO, 1 ex.

The specimen examined has all the characters of subgenus *Brachyphytodecta*: Pronotum without setigerous punctures on sides of anterior and posterior corners; elytra with well-defined longitudinal rows of punctures; pronotum with lateral margins not visible from above.

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# ムネダカアカコメツキの形態について

大 平 仁 夫

## Notes on the Morphological Structure of *Ampedus convexicollis* (Coleoptera: Elateridae) from Japan

By HITOO ÔHIRA

*Ampedus (Ampedus) convexicollis* (LEWIS, 1894) ムネダカアカコメツキは, G. LEWIS が日光において自身で採集(1880年6月)した2頭の標本にもとづいて 1894 年に *Elater* 属の新種として記載した種である。

本種については原記載以降長い間よくわかっていなかったが, 大平 (1973) によりタイプ標本の検討がなされ, その実体が明らかになったので, 同定は比較的容易になったが, 日本には本種の近似種が他にも分布しているため, ここではより詳しい形態を明らかにしておきたいと思う。

### 1. 分布・生態の概要

本種は前述のように日光がタイプ標本の基準産地である。MIWA (1934) のモノグラフには, 日光産と埼玉県秩父地方からの個体が記録され, 日光産 (G. LEWIS の採集品) のは体長 10 mm の個体が図示されている。また, 同氏は 1935 年に上高地からの採集標本を記録している。最近では馬場・岸井 (1979) は秋田県の鳥海山と栗駒山 (東成瀬村) からの個体を記録, 大平・下山 (1984) は青森県の青荷からの 1 雌個体を記録した。

以上のように, 本種は大平 (1973) によりタイプ標本の実体が明らかになってからも, 本種の分布はきわめて断片的にしか判明していなく, 生態については全く不明である。しかし, 本種は主として関東~中部山岳地以北の青森県に至る地域に広く分布しているように判断される。北海道及び近畿以南の分布は今後の調査に待たねばならない。

### 2. 一般形態

雄は体長 8-9 mm. 体は幅広く, 両側は平行状 (Pl. 9, G). 黒色で光沢を有し, 触角 (第 2, 3 節はやや暗褐色) と肢 (跗節は褐色) は黒褐色を呈するが, 触角と肢の色彩は個体により変異がみられる。上翅はやや暗黄褐色で, 翅底部や会合線部は多少とも黒褐色。体下面は黄褐

色毛を、頭部や前胸背板には黒色毛を混生し、上翅は黒色～黒褐色毛を生ずるが、周辺部は主として黄褐色毛を生ずる。

頭部はやや粗雑な点刻を一樣に分布し、前頭横隆線の前縁中央部は鈍く角ばり、周辺部はやや扁平状である。触角は細長く、前胸背板の後角より末端1節ほど後方に伸長する。第2節は短小で幅よりやや長く、第3節は倒円錐形状 (Pl. 8, E), 第4節から鋸齒状を呈し、第4節は第3節の約1.7倍の長さである (Pl. 8, D)。第5節は第4節より短い。小髭ひげの末節は細長く、両側は末端に弱く扇状に拡大する (Pl. 9, F)。

前胸背板は梯形状で、幅と長さはほぼ等しく、背面からみたとき、両側の後半部は平行状で、中央部から前方に顕著に細まる (Pl. 8, A)。背面は膨隆し、小点刻をまばらに一樣に分布する (Pl. 8, G)。後角部には明瞭な1隆起線を有する (Pl. 9, C)。前胸腹板突起は前肢基節腔を越えて弱く内方へ湾曲し、末端近くで直角状に段刻されて細まる (Pl. 8, F)。小楯板は舌状で、末端はスムーズに湾曲する。

上翅の長さは幅の約2.4倍。両側は平行状で、末端 $\frac{1}{2}$ ほどから漸次細まる (Pl. 9, G, H)。條線は浅く印し、深い点刻を規則的に印する。間室部はやや扁平状、不規則な横しわを弱く生ずる (Pl. 9, B)。腰板は図示したよう (Pl. 9, A)、内方部は幅広く、外縁中央部 (図の↑印) は角ばらない。

交尾器の末端部 (背面) は図示したようで、中央突起は細長く、末端に漸次細まる (Pl. 8, G, H)。側突起の末端の三角形部は幅より長く (Pl. 8, I)、外角部は外方に突出し、数個の段刻を生ずる (Pl. 8, J)。

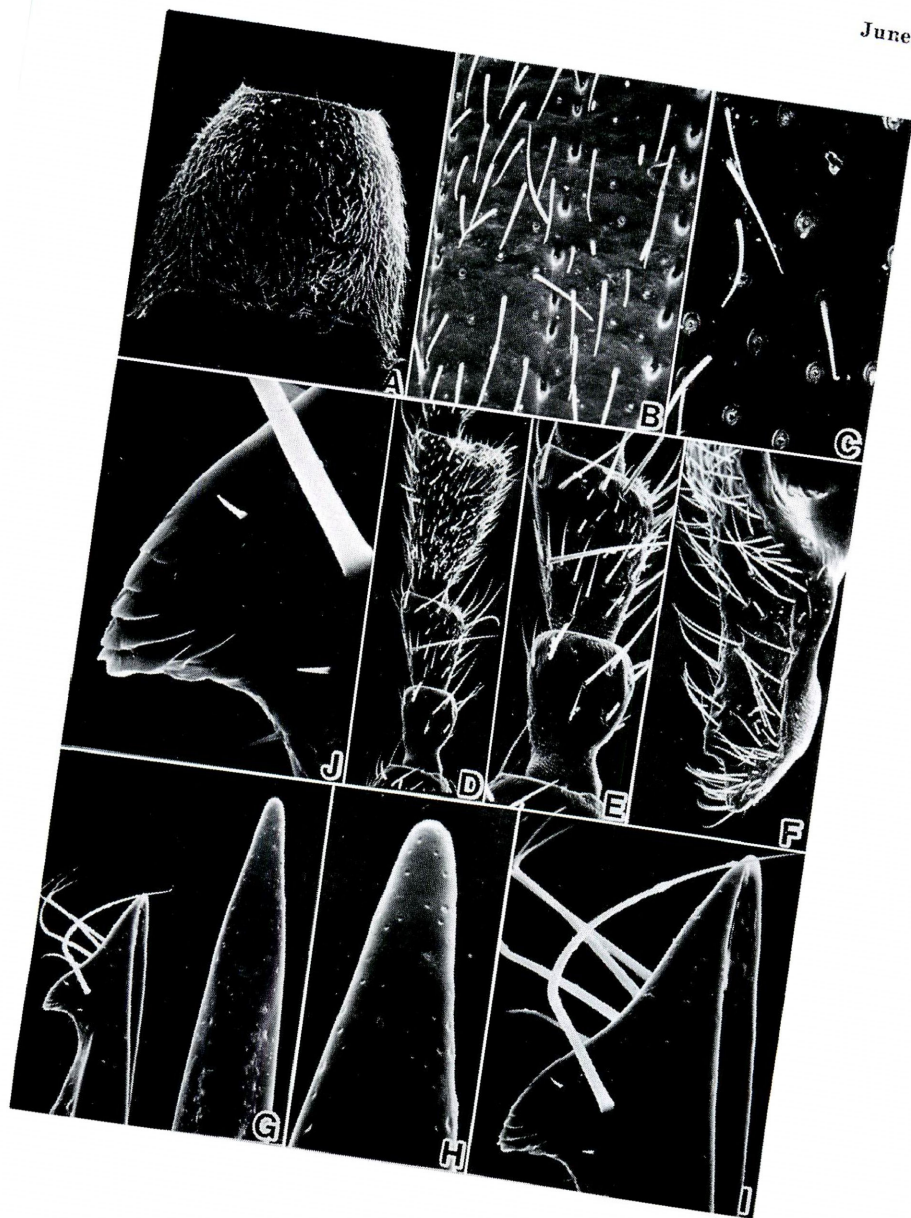
雌は雄に比して一般にやや大形で体長は 9-10 mm 内外。体はより幅広く、前胸背板は顕著に膨隆する。触角は短く、末端は前胸背板の後角よりやや短い (Pl. 9, H)。また、触角の第3節はより短大である (Pl. 9, D)。内部生殖器の *bursa copulatrix* の袋内には 30-40 本の棘状毛を生ずる。各棘状毛は細長く、やや軟弱である (Pl. 9, E)。

### 3. そ の 他

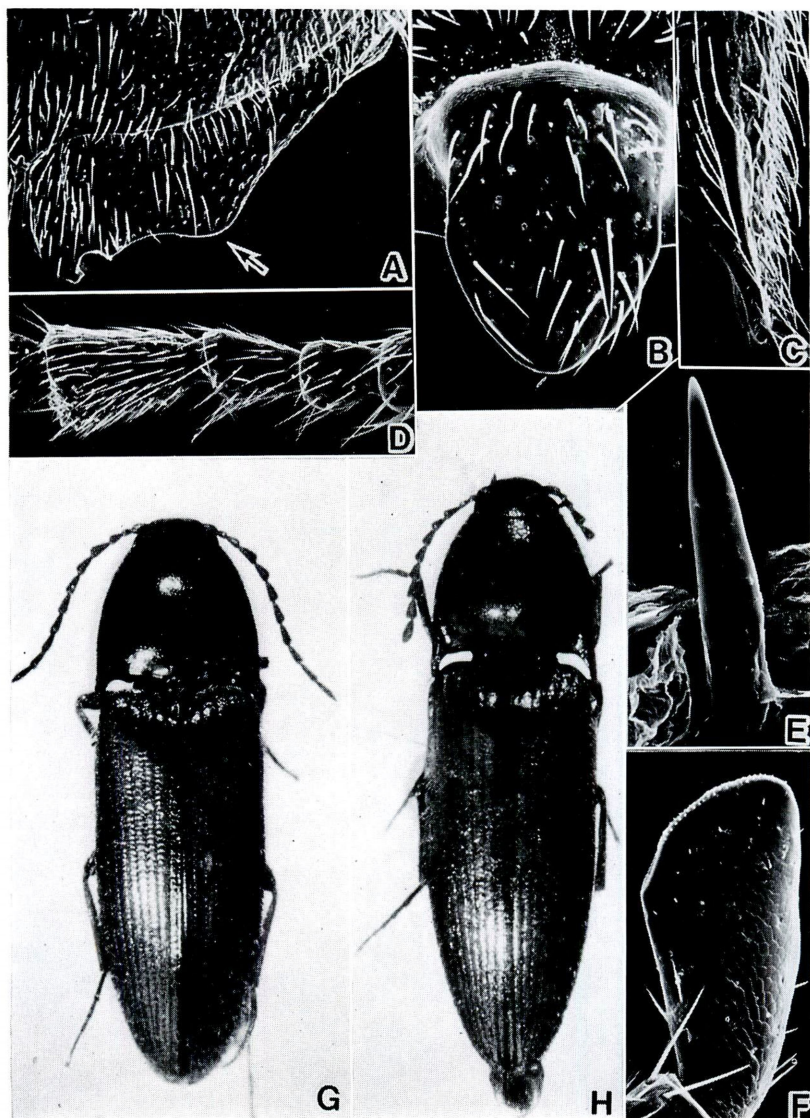
本種は山地森林性の種で、個体数はあまり多くないように思われる。一般外形や上翅の色彩などは *Ampedus* (*Ampedus*) *tokugoensis* W. SUZUKI, 1985 (= *Elater longipennis* Miwa, 1934) ミヤマホソチャバネコメツキにやや類似しているが、体はより短大で、前胸背板上の点刻や体毛の分布状態などによって識別できる。本種は今後、幼虫も含めてより詳しい生態の究明と、近畿地方より南部と北海道に分布するかどうかについての調査が必要と思われる。

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### Summary

*Ampedus* (*Ampedus*) *convexicollis* (LEWIS, 1894) was originally described from Nikko, Honshu, by G. LEWIS, as the name of *Elater convexicollis* (Annls. Mag. nat. Hist., 6 (13) : 34).

In the present study, the author has examined some important structures of this species by SEM-images as shown in the Pl. 8 and Pl. 9 to facilitate its recognition in the fauna of Elateridae from Japan.

### Explanation of Plates 8-9

Pl. 8. *Ampedus* (*Ampedus*) *convexicollis* (LEWIS, 1894) (male) (Asama-kôgen, Nagano-ken, Honshu).

A, pronotum, dorsal aspect ; B, 2nd and 3rd intervals of right elytron ; C, some punctures on the disc of pronotum ; D, 2nd to 4th segments of antenna ; E, 2nd and 3rd segments of antenna (enlarged) ; F, prosternal process, lateral aspect ; G, apical portion of aedeagus, dorsal aspect ; H, ditto, median lobe (enlarged) ; I, ditto, left lateral lobe (enlarged).

Pl. 9. *Ampedus* (*Ampedus*) *convexicollis* (LEWIS, 1894) (male, except for D, E, H which are females) (Asama-kôgen, Nagano-ken, Honshu).

A, basal plate ; B, scutellum ; C, right hind angle of pronotum ; D, 2nd to 4th segments of antenna ; E, spine-like seta in bursa copulatrix ; F, apical segment of maxillary palpus ; G, H, adults in dorsal aspect.

## 中国遼寧省營口地方のアリモドキ科甲虫 (1)

李 景 科<sup>1)</sup>・高 井 泰<sup>2)</sup>

## Records of Anthicid-beetles from North-East China (I)

By JINGKE LI<sup>1)</sup> and YASUSHI TAKAI<sup>2)</sup>

中華人民共和国東北部からのアリモドキ科甲虫の最近の記録はないようである。筆者のひとり李は、1980年以降この地方で本科の採集を行ってきたので、これまでの知見を報告する。なお、採集者はすべて李であるので省略する。

1. *Notoxus monoceros* (LINNÉ) クロモンイッカク

大石橋：1 ex., 16. vii. 1980 ; 7 exs., 25. viii. 1984.

ヨーロッパから朝鮮、日本まで広く分布する種のようなのである。高井が実検した1980年採集の1頭は前方の側紋が消失している。前胸背板前方は黒ずまない。

灯火に飛来したものが採集された。

2. *Anthicus confucii* MARSEUL ウスモンホソアリモドキ

大石橋：1 ex., 5. vii. 1984 ; 52 exs., 6. ix. 1987.

灯火に飛来したものが採集された。

3. *Anthicus baicalicus* MULSANT クロホソアリモドキ

鮫魚圈海浜（勃海沿岸）：1 ex., 6. viii. 1988.

波打ち際1メートルの所で採集された。

1) 中華人民共和国遼寧省營口県農技推广中心鞘翅目昆虫研究室。

2) 岐阜県関市本郷町1-74.

# 熊本市立田山において灯火で採集されたキクイムシ科

野 淵 輝・竹 谷 昭 彦

## Scolytidae (Coleoptera) Collected by Light Trap at Tatsutayama, Kumamoto

By AKIRA NOBUCHI and AKIHIKO TAKETANI

キクイムシを採集するトラップは、普通餌木、アルコール、カイロモン、フェロモンなどの誘引物質が用いられているが、採集データの中にライト・トラップによったという種類がかなり報告されている。日本において、ライト・トラップで採集されたキクイムシは行徳<sup>1)</sup>により9種(ナガキクイムシ1種を含む)、野淵<sup>2)</sup>により10種が報告されている。

今回筆者の1人竹谷が熊本市立田山にある農林水産省林業試験場九州支場構内に2段式ライト・トラップを設置し、1986年5月～1987年2月の間連夜点灯し、延34頭のキクイムシを採集したので、それらについて報告する。この2段式ライト・トラップは白色ネオライン・ノイズレス蛍光灯20Wと誘蛾灯用ブラック蛍光灯20Wをそなえ、その下部の受け箱に大形、小形昆虫が分離して入るように作られたものである。

### 捕獲されたキクイムシ

1. *Phloeosinus lewisi* CHAPUIS ヒバノコキクイムシ

1 ex., 1986年9月2日.

2. *Phloeosinus perlatus* CHAPUIS ヒバノキクイムシ

1 ex., 1986年9月2日.

前種と同様にスギ、ヒノキ、ヒバ、ビャクシンなどの樹皮下に穿入する普通種で、ヒバノコキクイムシは枝条に、ヒバノキクイムシは幹に好んで穿入する。両種ともに行徳<sup>1)</sup>の報告がある。

3. *Nipponopolygraphus kaimochii* NOBUCHI カイモチキクイムシ

1 ♀, 1986年7月23日; 2 ♀♀, 1986年8月29-30日.

本種は貝持仁志氏によって和歌山県で採集された標本に基づき新属新種で記載されたもので、今回は2回目の記録である。これは外形的には複眼が2分割されていないことを除き *Polygraphus* と全く同じであるが、前胃はこれと全く異なり *Hylesininae* 亜科の *Hylesine-Phloeotribine* 型であり、従来、触角、複眼、前胃などの形態から孤立した属と

して取り扱われてきた *Polygraphus* の位置関係を明らかにした貴重な種類である。

4. *Cryphalus fulvus* NIIJIMA キイロコキイムシ

1 ex., 1986年7月24日; 1 ex., 1986年8月2日; 1 ex., 1986年8月19日.

マツ類の枝条など薄皮部に好んで穿入する普通種.

5. *Hypothenemus erditus* WESTWOOD チビコキイムシ

1 ♀, 1986年8月25日.

世界共通種. 日本でも普通種であり, これまで村山醸造博士は, これを *Cryphalus* のいずれかの種として記録あるいは記載しているようである. 彼のいずれの種類が本種であるかは標本を検鏡しなければわからない.

6. *Cyrtogeneus brevior* (EGGERS) フィリピンキイムシ

2 ♀♀, 1986年7月18日; 1 ♂, 1986年7月19日; 1 ♂, 1986年7月22日; 1 ♀, 1 ♂, 1986年7月23日; 1 ♀, 3 ♂♂, 1986年7月24日; 2 ♂♂, 1986年7月26日; 1 ♀, 1986年7月27日; 1 ♀, 1986年8月13日.

本種は東南アジア各地に分布し, タイ, フィリピンのケシアマツには普通に発見される. 日本では1959年に沖縄から初めて発見され, 九州のマツ類には多く, 近年は静岡市の海岸クロマツ林からも発見されている.

7. *Xyleborus atratus* EICHHOFF クワノキイムシ

1 ♀, 1986年9月10日.

行徳<sup>1)</sup>によっても記録されている.

8. *Xyleborus saxeseni* (RATZBURG) サクセスキイムシ

1 ♀, 1986年8月11日; 1 ♀, 1986年8月13日; 1 ♀, 1986年8月17日; 1 ♀, 1986年8月19日; 1 ♀, 1986年8月20日; 1 ♀, 1986年9月6日.

野淵<sup>2)</sup>によっても記録されている.

9. *Acanthotomicus spinosus* BLANDFORD シラカシノキイムシ

1 ♀, 1986年7月4日; 1 ♀, 1986年7月19日; 1 ♂, 1986年7月23日; 1 ♀, 1986年8月2日; 1 ♂, 1986年8月4日.

上翅先端に長い歯状突起を持った種類であるが, 関東以西のシラカシの樹皮下に稀ではない.

以上の種類のうち材中に穿入し菌を食う ambrosia beetles は 7, 8 の *Xyleborus* 属の種類だけで, あとの全部は bark beetles である.

現在まで灯火に飛来し捕獲された日本の種類は Scolytinae 亜科では *Scolytus* (1種), Hylesininae 亜科では *Tomicus* (2種), *Phloeosinus* (2種), *Nipponopolygraphus* (1種), Ipinae 亜科では *Cryphalus* (1種), *Hypothenemus* (1種), *Cyrtogeneus* (1種), *Xyleborus* (9種), *Ips* (1種), *Orthotomicus* (1種), *Acanthotomicus* (1種), Scolytoplatypodinae 亜科では *Scolytoplatypus* (1種) であって, 全亜科に及び, 広範囲の種類のキイムシが灯火で採集されている.

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- 2) 野淵 輝 (1967) : ライト・トラップに集ったキクイムシについて, 第78回日本林学会大会講演集 : 192-193.

## 第40回 (昭和63年度) 大会記録

昭和63年度の第40回大会は, 同年12月11日午前10時30分から大阪市立自然史博物館集会室において開催された. 午前中は例年どおり自由懇談並びに各グループにわかれて甲虫の同定が行われた.

午後1時から林幹事の司会により, まず大倉幹事から会務会計報告の後, 著作権の委譲について提案を行なったところ出席全員の賛同があった. 引続き, 穂積俊文氏から“ミツノエンマコガネの分布その他”について講演があり, 同種はジャワから記載され, 海外ではインド・ビルマ・マレー半島・インドシナ半島・中国・台湾に, また我国では北九州・大山・知多半島に分布しているが, この分布域を見ると海流によるものと考えられるとの意見であったが, 食糞コガネの分布拡大が海流によるというのは無理ではないか等々の質疑応答が行われた. 次に, 佐藤正孝氏から“水生昆虫研究の最近の動向”と題し, 欧米における最近の研究は或る属を世界的に纏める傾向が強い, 例えばツブゲンゴロウのモノグラフやモンキマメゲンゴロウのモノグラフ等が発表されている旨の話があり, 午後4時すぎに閉会した.

終って, 場所を天王寺駅前に移し, 懇親会が開催され午後7時ころ盛会裡に解散した. なお, 当日の出席者 (敬称略・\*は懇親会出席者) は下記のとおりである.

有本久之・\*林 匡夫・\*林 靖彦・平田信夫・\*穂積俊文・\*生谷義一・\*今村隆一・\*岩崎博・岩田隆太郎・岸井 尚・北山 昭・\*松田 潔・松田 島・水野弘造・\*奈良 一・\*生川展行・\*野村 全・\*大川親雄・\*大倉正文・奥田則雄・\*佐々治寛之・\*佐藤正孝・澤田高平・\*高羽正治・田村 保・\*田中昭太郎・\*遠山雅夫・豊嶋亮司・渡辺昭彦・\*渡辺 崇・\*八木正道・山地 治・吉原一美.

(大倉)

## 国際動物命名委員会からのお願い (10)

The following applications were published on 29 March 1989 in Vol. 46, Part 1 of the Bulletin of Zoological Nomenclature. Comment or advice on these applications is invited for publication in the Bulletin and should be sent to the Executive Secretary, I. C. Z. N., c/o British Museum (Natural History), Cromwell Road, London SW7 5BD, U. K.

## Case No.

- 2603 *Gryllacridoidea* STÅL, 1874 (Orthoptera): proposed precedence over *Stenopelmatoidea* BURMEISTER, 1838.
- 2646 *Ptochus* SCHÖNHERR, 1826 (Coleoptera): proposed conservation by confirmation of MARSHALL'S (1916) designation of *Ptochus porcellus* BOHEMAN in SCHÖNHERR, 1834 as the type species.
- 2680 *Euribia jaceana* HERING, 1935 (currently *Urophora jaceana*; Diptera): proposed precedence over *Euribia conyzae* HERING, 1933.

The following opinions were published on 29 March 1989 in Vol. 46, Part 1 of the Bulletin of Zoological Nomenclature.

## Opinion No.

- 1523 *Corisa germari* FIEBER, 1848 (currently *Acrocorisa germari*; Hemiptera): neotype designated.
- 1524 *Corisa distincta* FIEBER, 1848 (currently *Sigara (Subsigara) distincta*; Hemiptera): specific name conserved.
- 1525 *Phymatodes* MULSANT, 1839 and *Phymatestes* PASCOE, 1867 (Coleoptera): conserved.
- 1526 *Nanophyes* SCHOENHERR, 1838 (Coleoptera): conserved.
- 1527 *Polyommatus emolus* GODART, [1824] (currently *Anthene emolus*; Lepidoptera): specific name conserved.
- 1528 *Pyralis nigricana* FABRICIUS, 1794 (currently in *Cydia* or *Laspeyresia*; Lepidoptera): specific name conserved.
- 1529 *Ceutorhynchus* GERMAR, 1824, *Rhinoncus* SCHOENHERR, 1825 and *Curculio assimilis* PAYKULL, 1792 (Coleoptera): conserved, and *Curculio assimilis* PAYKULL, 1792 and *Curculio pericarpus* LINNAEUS, 1758 designated as the type species of *Ceutorhynchus* and *Rhinoncus* respectively.
- 1530 *Coeloides* WESMAEL, 1838 (Hymenoptera): *Coeloides scolyticida* WESMAEL, 1838 designated as the type species.
- 1531 *Disophrys* FOERSTER, 1862 (Hymenoptera): *Agathis caesa* KLUG, 1835 designated as the type species.

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# 「百いれば、 くすり博士。」

（エーザイの「くすり博物館」には約27,000点の資料、約23,000冊の蔵書があります。）

木曽川の中州にひろがる、緑豊かな自然林に囲まれたエーザイ川島工園。公園のような工場という意味で「エーザイ」と名づけられた14万坪の敷地の一隅に、日本で唯一の総合的な薬の博物館があります。ここには、薬や医学の歴史を物語る貴重な、珍しい資料がたくさん展示されているほか、付属の薬用植物園もあり、楽しく見ているうちに薬や健康に関する知識を深めることができます。

- 開館時間：9時～16時
- 休館日：月曜日 ● 入場料：無料



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