

Two New Genera of the Tribe Ochyromerini (Coleoptera, Curculionidae) with Five Segments in the Funicle^{1,2)}

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Abstract In the fifth part of our systematic study on the tribe Ochyromerini from East Asia, two new genera and four new species are described as *Heterimerodes* gen. nov., *H. johkii* sp. nov. from East Malaysia, *H. karubei* sp. nov. from West Malaysia, *Eugryporrhynchus* gen. nov., *E. kinabalensis* sp. nov. from East Malaysia and *E. malayanus* sp. nov. from East and West Malaysia. The former genus is close to *Imerodes* MARSHALL and the latter to *Gryporrhynchus* ROELOFS, but both the genera are easily discriminated from the known genera of this tribe by the antennae, which have five segments in the funicle instead of six or seven in the other genera.

In the greatest number of species in the Curculionidae the funicle is composed of six or seven segments, and that with five-segments is much less numerous and known only in the following taxa: *Mecinus* (Meciniinae), Gymnetrinae, Cioninae, *Ergania* (Curculioninae), *Cylindrotrypates* and *Edaphotrypates* (Phoenicobatinae) and some genera of the Cossoninae. These facts suggest that the reduction of the number of segments occurs parallel in different taxa from the plesiomorphic condition with six or seven segments in the funicle.

In the continuation of our systematic studies on the tribe Ochyromerini of the subfamily Tychiinae, two new genera with five segments in the funicle are discovered for the first time, whereas all the known genera of the tribe have six or seven segments in the funicle. Both the new genera may have a close relationship with *Gryporrhynchus* ROELOFS, *Imerodes* MARSHALL, *Lepidimerodes* KOJIMA et MORIMOTO and *Heterochyromera* KOJIMA et MORIMOTO (*in press*) rather than the other genera in having the following common features: eyes widely separated and not close to each other on frons, antennal scape not touching eye in repose, elytra separately rounded at the apex, pygidium broadly exposed and nearly vertical in male, and front coxae located close to the base of prothorax.

Before going further, we express our gratitude to Mr. H. HATA, Dr. Y. JOHKI, Mr. H. KARUBE and Dr. T. YASUNAGA for their kind offer of materials for our study.

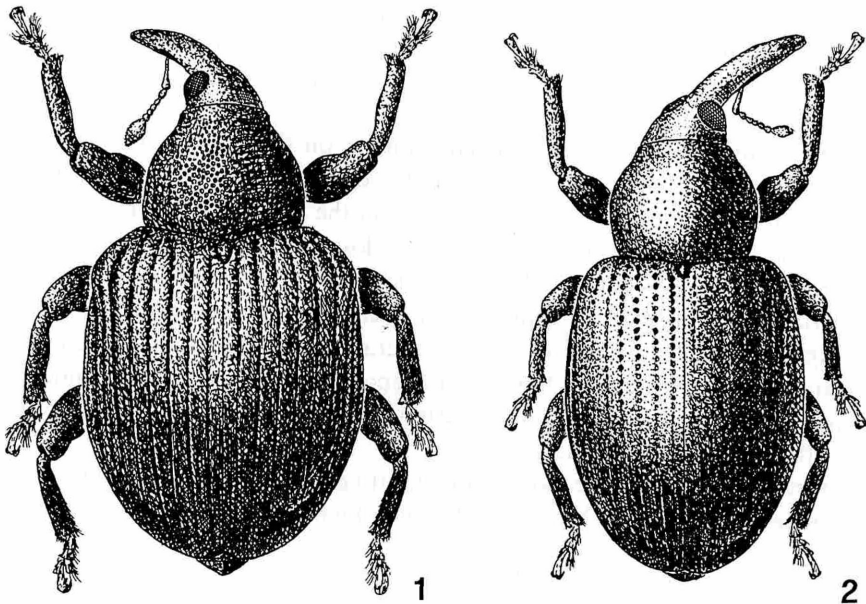
1) Study on the tribe Ochyromerini (Coleoptera, Curculionidae) from East Asia V.

2) Contribution from the Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka (Ser. 4, No. 103).

Heterimerodes gen. nov.

Type species: *Heterimerodes johkii* sp. nov.

Description. Head faintly constricted just behind eyes; forehead between eyes a little narrower than the base of rostrum. Eyes distant from each other, not convex from temples, ovate and large in lateral view. Rostrum parallel-sided, tapered dorso-ventrally to the apex in lateral view, without distinct groove or carina; antennal scrobes running obliquely to beneath the base of rostrum, dorsal edge almost reaching the ventral corner of eye. Antennae inserted at about the middle of rostrum; scape short, robust and not reaching eye; funicle five-segmented; club compact, first segment at least as long as the remaining segments combined. Prothorax with subapical constriction weak. Scutellum evident. Elytra with oblique shoulders, separately rounded at the apices, with ten regular striae, ultimate stria weakened behind the middle, tenth interval carinate. Pygidium broadly exposed, almost vertical. Legs with femora unarmed, clavate, front femora as great as posteriors; tibiae uncinatae from inner angle; tarsi robust, third segment a little wider than the preceding, bilobed; claws moderately divergent, each with broad, flat basal process. Prosternum with coxae located close to the base. Metasternum with a medial sulcus extending close to anterior margin. Venter with posterior margin of second ventrite more broadly curved posteriorly at sides than third and fourth ventrites, first ventrite behind coxae and second to fourth ventrites each subequal in length, fifth ventrite shorter than third and fourth ventrites combined.



Figs. 1-2. Habitus of *Heterimerodes* spp. — 1, *H. johkii* sp. nov.; 2, *H. karubei* sp. nov.

Phylogenetic consideration. This new genus is closely related to *Imerodes* MARSHALL in having thinly clothed derm with setae, unarmed femora, and broadly curved second ventrite at the sides, but is distinctive from all the genera of this tribe by the following points: rostrum tapered apically, antennal scrobe running obliquely towards beneath the base of rostrum, antennae inserted at about the middle of rostrum, scape short and robust, and funicle with five segments. The head of this genus is similar to that of a species of the Tychiini.

***Heterimerodes johkii* sp. nov.**

(Figs. 1, 3–5, 7–9)

Male. Derm black, dull, antennae and tarsi dark brown, unci of tibiae and claws brownish.

Head densely with fine punctures; forehead between eyes a little narrower than the base of rostrum. Rostrum as long as pronotum, parallel-sided on basal half, thence slightly narrowing to the apex; dorsum with dense punctures, which are more or less confluent longitudinally on basal half, and become smaller and thinner on apical half; antennal scrobes shortly extending anteriorly beyond antennal insertion. Antennae inserted at the middle of rostrum; scape as long as basal four segments of funicle combined; funicle with first segment robust, a little longer than broad, nearly as long as second, third and fourth subequal in length, 2/3 times as long as second, fifth just a little longer than fourth; club with vesture almost of the same color as derm on basal half, grayish on distal half from apical margin of first segment to apex.

Prothorax 1.2 times as wide as long, widest at the base, slightly narrowing to apical one-third, thence rapidly narrowing to weak subapical constriction; dorsum densely and reticulately punctured, the punctures becoming smaller in anterior area. Scutellum tongue-shaped. Elytra broadly ovate, about 1.2 times as long as wide, each elytron with a faint callus on declivity; intervals wider than striae, flat, densely punctate, clothed with fine recumbent dark setae, seventh and eighth intervals with small protuberances at the base; striae sulcate, with large punctures, which become smaller towards the apex. Propygidium with its apical margin narrowly exposed. Pygidium flat, densely with fine punctures, rugulose. Legs clothed with fine recumbent dark setae; tibiae dilated internally behind the middle.

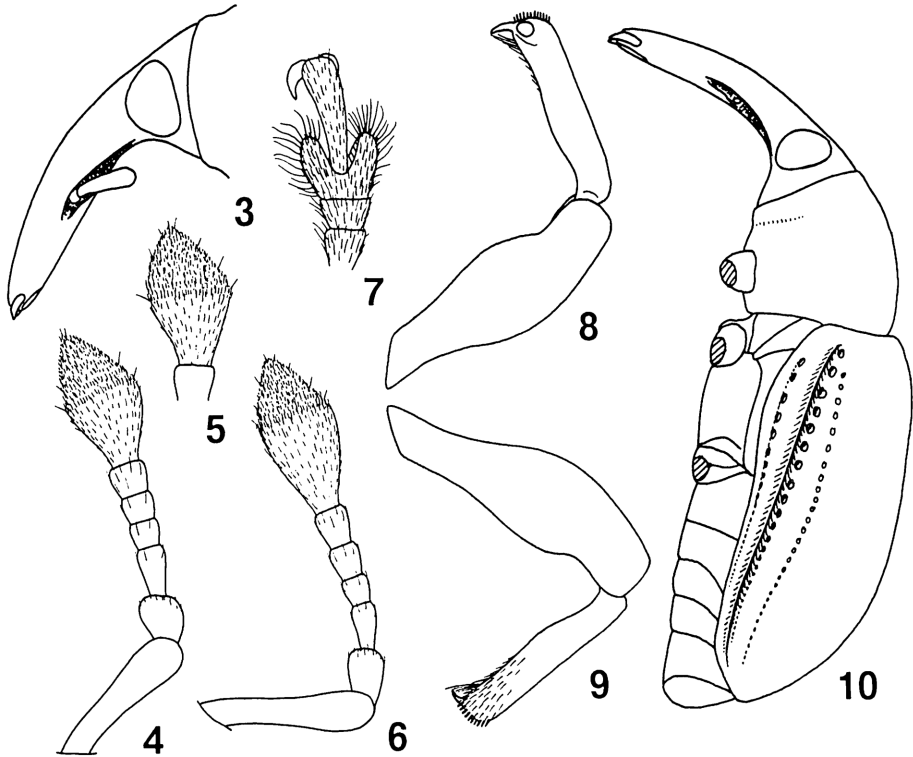
Underside clothed with fine recumbent dark setae. Prosternum with the distance between the coxa and submarginal sulcus greater than that between this sulcus and anterior margin. Mesosternal process a half as wide as a coxa. Venter with first ventrite flattened in the middle.

Female. Unknown.

Length. 4.0 mm.

Type series. Holotype: ♂ (Type No. 3015, Kyushu Univ.), Keningau, Sabah, East Malaysia, 6–VI–1981, Y. JOHKI leg.

Distribution. East Malaysia (Sabah).



Figs. 3–5, 7–9. *Heterimerodes johkii* sp. nov.; 6, 10, *H. karubei* sp. nov. — 3, Head, lateral view; 4–6, antenna (5, club, lateral view); 7, tarsus; 8, 9, femur and tibia (8, front leg; 9, hind leg); 10, habitus, lateral view.

Remarks. This large species is similar to a large weevil of *Sphincticraeropsis* Voss at first sight, but the funicle is different.

***Heterimerodes karubei* sp. nov.**

(Figs. 2, 6, 10)

Male. Derm shiny black, underside and legs dark brown, antennae and tarsi dark brown to brownish, unci of tibiae and claws brownish.

Head with fine and separate punctures; forehead between eyes 7/10 times as wide as the base of rostrum. Rostrum faintly widened at antennal insertion and apex; dorsum with small punctures, which are dense and longitudinally confluent at the base, and become finer and thinner apically; antennal scrobes shortly extending anteriorly beyond antennal insertion. Antennae inserted a little behind the middle of rostrum; scape as long as basal four segments of funicle combined; funicle with first segment 1.5 times as long as wide, nearly as long as second, third to fourth subequal

in length, $2/3$ times as long as second, fifth just a little longer than fourth; club with first segment more than a half the length of club, with grayish vesture on apical margins of basal two segments and whole apical segment.

Prothorax 1.2 times as wide as long, widest in front of the middle, weakly curved at sides, slightly narrowing to the base; dorsum separately provided with small punctures, their interstices about as wide as diameters, punctures becoming denser anteriorly and laterally. Scutellum tongue-shaped, flat, coriaceous. Elytra 1.3 times as long as wide, widest at the middle, each elytron without callus on declivity; intervals about as wide as striae, each interval with fine punctures, each of which bears fine seta, arranged irregularly on basal half and regularly in a row on apical half; striae with large punctures, septa almost of the same height as interval on basal half, punctures becoming smaller to the apex.

Legs clothed with fine, short recumbent pale setae; tibiae weakly dilated internally behind the middle.

Underside clothed with fine recumbent pale setae. Prosternum with the distance between the coxa and submarginal sulcus greater than that between this sulcus and anterior margin. Mesosternal process one-third as wide as coxa. Venter with first ventrite flattened in the middle.

Female. Unknown.

Length. 3.1 mm.

Type series. Holotype: ♂ (Type No. 3016, Kyushu Univ.), Templer Park, nr. Kuala Lumpur, West Malaysia, 10-III-1989, H. KARUBE leg.

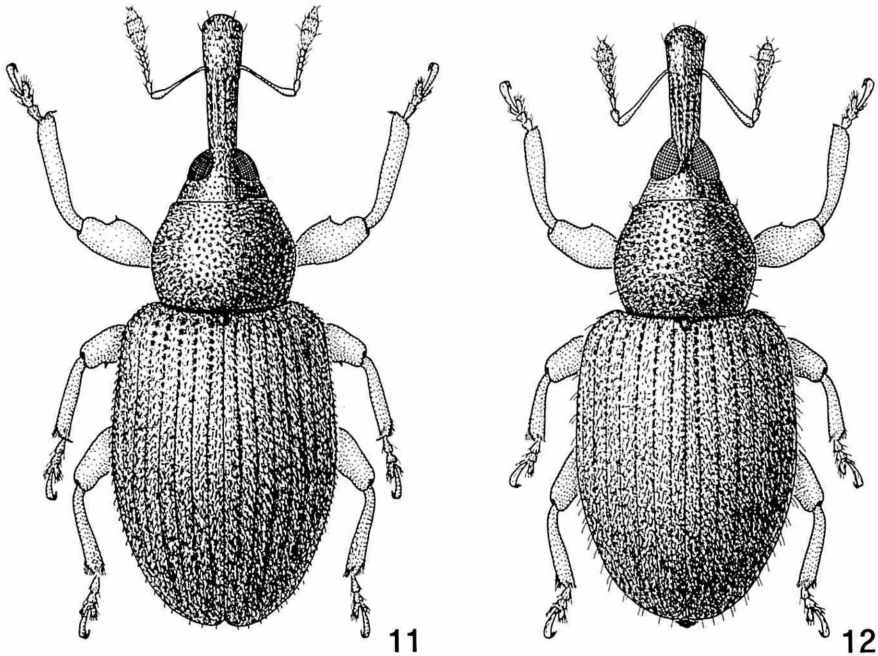
Distribution. West Malaysia.

Remarks. This is easily separable from *H. johkii* sp. nov. by the shiny and distantly punctate derm, and oblong ovate body.

Eugryporrhynchus gen. nov.

Type species: *Eugryporrhynchus kinabalensis* sp. nov.

Description. Body oblong ovate. Head not constricted behind eyes. Eyes weakly convex from temples, distant from each other. Rostrum weakly widening before antennal insertion; antennal scrobe with two dorsal carinae, upper carina distinct, directing to the middle part of eye, lower carina indistinct, directing to the lower part of eye, ventral carina running to beneath the base of rostrum; scape retracted between lower dorsal carina and ventral carina and not touching eye. Antennae with funicle five-segmented; club normal, visibly three-segmented, first segment shorter than the rest. Prothorax truncate at anterior margin, weakly arched posteriorly at the base, rounded laterally, weakly constricted at the apex, often with erect setae on anterior and lateral margins. Scutellum evident. Elytra with rounded shoulders, with ten regular striae, ultimate stria weakened behind the middle, interval with a row of suberect or erect setae or scales. Apical half of pygidium exposed and almost vertical in the male or oblique in the female. Legs with femora dentate, teeth of middle and hind femora



Figs. 11–12. Habitus of *Eugryporrhynchus* spp. — 11, *E. kinabalensis* sp. nov.; 12, *E. malayanus* sp. nov.

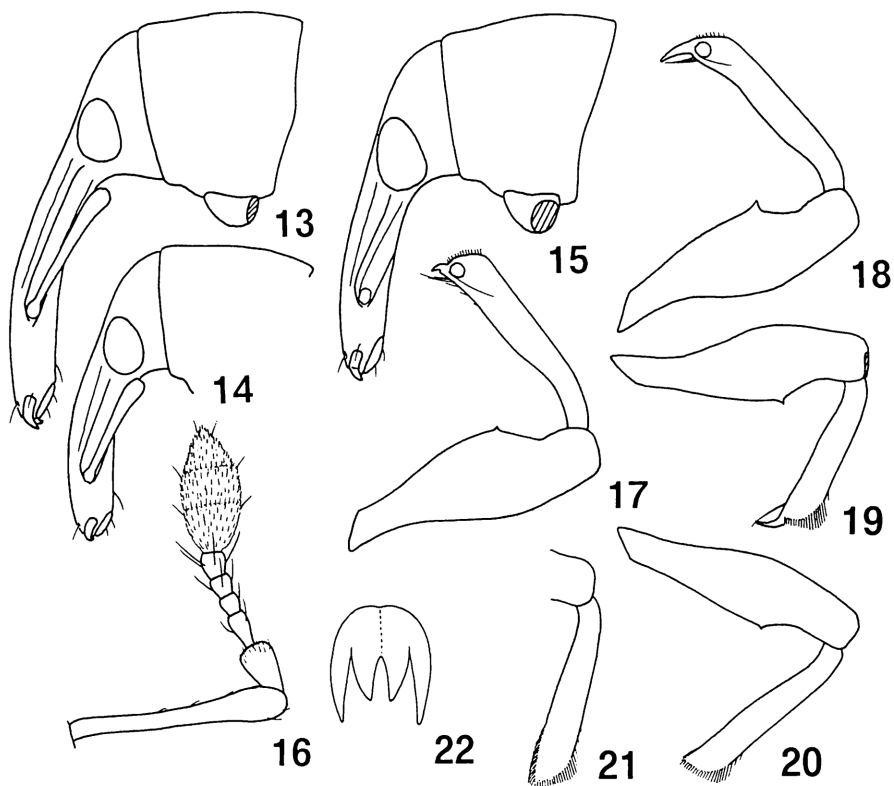
a little smaller than those of front femora; front and middle tibiae uncinatae from inner angle, but those of hind pairs not uncinatae; tarsal claws moderately divergent, each with a sharp tooth and fine seta. Prosternum with coxae located near the base. Venter with the posterior margin of second ventrite more broadly curved than third and fourth ventrites, first ventrite behind coxae and second to fourth ventrites each subequal in length, fifth ventrite shorter than third and fourth ventrites combined.

Phylogenetic consideration. This genus is closely related to *Gryporrhynchus* ROELOFS in having suberect or erect setae or scales on the elytra, and to *Lepidimerodes* KOJIMA et MORIMOTO on the narrow body and long rostrum, but the five-segmented funicle and sharp tooth at the base of each claw are characteristic. The latter character is unique in this tribe, which is broad and flat in the other known genera, but appears in the taxa of such out-groups as *Lignyodes* of the Lignyodini and most of the Tychiini. Consequently, this condition can be regarded as plesiomorphic.

***Eugryporrhynchus kinabalensis* sp. nov.**

(Figs. 11, 13, 14, 16, 18–22)

Male and female. Derm blackish, antennae and legs light reddish brown. Head densely punctured, each puncture with a pale recumbent seta; forehead



Figs. 13–14, 16, 18–22. *Eugryporrhynchus kinabalensis* sp. nov.; 15, 17, *E. malayanus* sp. nov. — 13–15, Head and prothorax, lateral view; 16, antenna; 17–21, femur and tibia (17, 18, front leg; 19, middle leg; 20, hind leg, female; 21, ditto, male); 22, claws.

between eyes a little narrower than the base of rostrum, wrinkled. Eyes weakly convex from temples. Rostrum a little longer than (male) or much longer than (3:2, female) pronotum, weakly curved; dorsum parallel-sided, confluent punctured, with an indefinite median and two rows of carinae on each side behind the antennal insertion, thence weakly widening, and punctures becoming smaller to the apex. Antennae inserted at apical one-third (male) or before the middle (female) of rostrum; scape reaching anterior part of eye (male) or not reaching eye (female), longer than funicle; funicle with first segment $\frac{3}{5}$ times as wide as long, a little longer than second, third and fourth subequal in length, fifth just a little longer than fourth.

Prothorax 1.3 times as wide as long, widest at the middle, rounded laterally, subapical constriction weak; dorsum strongly punctured, clothed with recumbent pale setae, without suberect or erect setae. Scutellum rounded, as long as wide, clothed with recumbent pale setae. Elytra 1.38 times as long as wide, widest at the middle; each interval clothed with recumbent pale setae and medially a row of suberect short

pale scales. Legs clothed with pale recumbent setae; femora each with a small tooth, of which the front pair is a little larger than that of the posteriors; front and middle tibiae each with a large uncus, each tibia weakly dilated internally a little behind the middle, hind tibiae densely fringed internally with short hairs at apical part in male.

Underside thinly clothed with pale recumbent setae. Prosternum with distance between the coxa and submarginal sulcus greater than that between this sulcus and anterior margin. Venter with first ventrite flattened in the middle in male.

Length. 2.3–2.6 mm.

Type series. Holotype: ♂ (Type No. 3017, Kyushu Univ.), Kinabalu P. H. Q., Sabah, Borneo Is., East Malaysia, 16~18-III-1993, H. KOJIMA leg. Paratypes: 2♂♂ and 1♀, same data as holotype.

Distribution. East Malaysia (Sabah).

Remarks. This is characteristic in having short suberect scales of the elytra and large unci of the front and middle tibiae.

Eugryporrhynchus malayanus sp. nov.

(Figs. 12, 15, 17)

Male. Derm dark brown, rostrum and elytra a little lighter, pronotum darker, scape and funicle of antennae and legs reddish brown.

Head finely and separately punctured, each puncture with a pale recumbent seta; forehead between eyes a half as wide as the base of rostrum, strongly punctured. Eyes subtriangular, slightly convex from temples. Rostrum as long as pronotum, slightly curved; dorsum parallel-sided, confluent punctured, with five rows of carinae behind antennal insertion, of which the median one does not reach antennal insertion and bears a short groove at this point, thence weakly widening to the apex and punctures becoming smaller. Antennae inserted a little before the middle of rostrum; scape reaching the median part of eye, longer than funicle; funicle with first segment $2/3$ times as wide as long, a little longer than second, third and fourth subequal in length, fifth just a little longer than fourth.

Prothorax 1.2 times as wide as long, widest at the middle, weakly rounded laterally, subapical constriction weak; dorsum strongly punctured, punctures becoming smaller towards anterior margin, clothed with recumbent pale setae, with a few erect setae on lateral and anterior margins. Scutellum rounded, clothed with pale recumbent setae. Elytra 1.38 times as long as wide, widest at the middle; each interval clothed with pale recumbent setae and medially a row of long erect setae. Pygidium exposed, oblique, emarginate at the apex. Legs clothed with pale recumbent setae; front femora each with a minute tooth, tooth of middle and hind femora vestigial; tibiae narrowed at the base, slightly dilated internally near the middle, thence weakly widening to the apex, front and middle tibiae each with a small uncus.

Underside thinly clothed with pale recumbent setae. Prosternum with the distance between the coxa and submarginal sulcus greater than that between this sulcus and

anterior margin. Venter with fifth ventrite bisinuate at the apex, strongly produced in the middle in correspondence with the emargination of pygidium.

Female. Unknown.

Length. 1.6–1.8 mm.

Type series. Holotype: ♂ (Type No. 3018, Kyushu Univ.), 19 miles from Tapha, Malaysia, 9–IV–1976, M. HATA leg. Paratypes: 1 ♂, Mamut, Sabah, East Malaysia, 11–14–VIII–1981, K. MORIMOTO leg.; 1 ♂, Bukit Larut, Malaysia, 14–VII–1989, T. YASUNAGA leg.; 1 ♂, Kinabalu P. H. Q., Sabah, Borneo Is., East Malaysia, 16–18–III–1993, H. KOJIMA leg.

Distribution. East Malaysia (Sabah), West Malaysia.

Remarks. This is easily separable from the previous species by the small-sized body, narrower forehead, subtriangular eyes, long erect setae of the elytra, and small unci of the front and middle tibiae.

要 約

小島弘昭・森本 桂：触角中間節が5節からなるアシプトゾウムシ族の2新属。——ゾウムシ科甲虫の触角中間節は通常6節か7節からなり、5節からなるものは非常に限られていて、ゾウムシ科のいくつかの異なる系統において平行的にでてくる特徴である。東アジア産のアシプトゾウムシ族を研究していく過程で、触角中間節が5節からなるゾウムシが見つかった。これは本族はもちろんのこと、近縁な族においても今までに知られていなかった特徴である。これらは、触角中間節の形態以外にも、いくつかの重要な形態的特徴で、今までに知られている本族の属とは識別できる2属が含まれていることがわかったので、*Heterimerodes* 属と *Eugryporrhynchus* 属を新設して、それぞれに2新種を記載した。*Heterimerodes* 属は、*Imerodes* 属に近縁であるが、触角中間節以外に、口吻が先に向かって細まること、触角溝が眼の下側に向かうことなどの特徴で識別できる。本属には *johkii* (東マレーシア)、*karubei* (西マレーシア) の2新種を含めた。*Eugryporrhynchus* 属は、上翅各間室に直立、あるいは半直立した一列の毛、あるいは鱗片を持つことから、おそらく *Gryporrhynchus* 属に近縁のものと思われるが、触角中間節以外に、爪が大きくは分岐せず、内側に鋭い歯を持つことで識別できる。本属には *kinabalensis* (東マレーシア)、*malayanus* (西、東マレーシア) の2新種を含めた。

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