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The Tribe Ochyromerini (Coleoptera, Curculionidae)
of Japan III. Genera with Seven Segments
in the Funicle and Key to Genera¹⁾

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Abstract This is the third and final part of our systematic studies on the tribe Ochyromerini of Japan treating 4 species in the genera *Heterendaeus* MORIMOTO, *Parendaeus* gen. nov., *Nipponochyromera* gen. nov. and *Heterochyromera* gen. nov. New taxa described in this paper are *Parendaeus abietinus* gen. et sp. nov., *Nipponochyromera gracilipes* gen. et sp. nov. and *Heterochyromera imerodeus* gen. et sp. nov. Key to Japanese genera is provided.

Key words: Ochyromerini; Tychiinae; Curculionidae; revision; Japan.

Genus *Heterendaeus* MORIMOTO

Heterendaeus MORIMOTO, 1962, J. Fac. Agric., Kyushu Univ., **11**: 384 (Type species: *Heterendaeus miyamotoi* MORIMOTO, by original designation). — MORIMOTO, 1962, J. Fac. Agric., Kyushu Univ., **12**: 50.

Diagnosis. Rostrum straight, shiny, shorter than pronotum. Antennae inserted behind the middle in both sexes; funicle seven-segmented; scape much shorter than funicle. Front femora not thicker than the posteriors. Pygidium often partly exposed in the male. Prosternum with submarginal sulcus contiguous with front coxal cavities.

Note. This is easily distinguishable from the other genera having seven-segments in the funicle by the short and straight rostrum, and the antennal insertion behind the middle of rostrum.

Heterendaeus miyamotoi MORIMOTO

(Fig. 18)

Heterendaeus miyamotoi MORIMOTO, 1962, J. Fac. Agric., Kyushu Univ., **11**: 384–385 (Type locality: Amami-Oshima Is., by monotypy). — MORIMOTO, 1984, *Coleopt. Jpn. Col.*, Osaka, **4**: 299.

Derm light reddish to yellowish brown, head and middle part of prosternum

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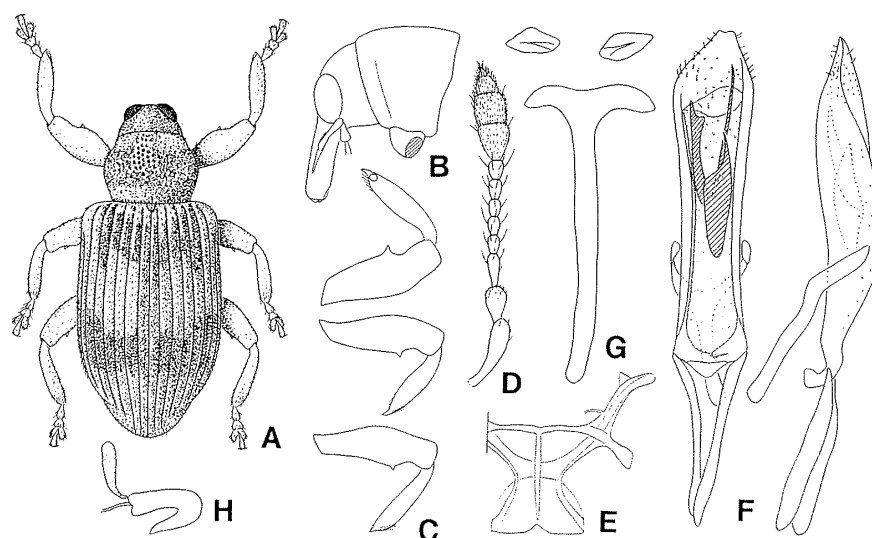


Fig. 18. *Heterendaeus miyamotoi* MORIMOTO. — A, Male; B, head and prothorax, lateral view; C, legs; D, antenna; E, metendosternite; F, penis; G, spiculum gastrale; H, spermatheca.

darker transversely, meso- and metathoraces, abdomen, scutellum, two transverse bands of elytra dark brown to blackish.

Forehead between eyes a little narrower than the base of rostrum, flat. Eyes oblong oval, convex from temples. Rostrum parallel-side, with fine sparse punctures; antennal scrobe extending anteriorly from the socket to apical one-third of rostrum. Antennae inserted a little behind the middle (male) or basal one-third (female) of rostrum; scape reaching eye, as long as basal two segments of funicle combined; funicle with first segment robust, almost as long as second, third to seventh subequal in length, a little more than half the length of second, seventh 1.2–1.3 times as long as broad; club oblong oval, twice as long as broad, almost as long as distal five segments of funicle combined.

Prothorax 1.2–1.3 times as wide as long, shiny, widest at the middle, subapical constriction weak, more (female) or less (male) rounded laterally, with shallow punctures, with pale recumbent setae. Scutellum tongue-shaped, as long as wide, with recumbent pale setae.

Elytra oblong-ovate, shiny, 1.55–1.70 times as long as wide, widest a little behind the middle, with slight subapical calli; each interval with fine recumbent pale setae and a row of suberect pale setae.

Legs clothed sparsely with pale recumbent setae. Each femur with a small triangular tooth. Front and middle tibiae gently widening from the base to a little beyond the middle, thence narrowing toward the apex.

Prosternum with front coxae located a little before the middle. Mesosternal process one-fourth as wide as the middle coxa.

Length: 2.0–2.5 mm.

Specimens examined. [Ryukyus] 1 ♀, Shinmura-Yuwan, Amami-Oshima, 4, iv. 1956, S. MIYAMOTO leg (holotype). 2♂2♀, Nangawa-rindo, Amami-Oshima Is., 20. iii. 1990, H. KOJIMA leg. 2♂2♀, Mt. Yonahadake, Okinawa Is., 1. xi. 1991, H. KOJIMA leg.; 1 ♀, 16. iv. 1991, H. KOJIMA leg. 3♂, Mt. Nishinedake (360 m), Kunigami, Okinawa Is., 19. x. 1989, M. SAKAI leg. 1 ♀, Mt. Darumayama, Gushikawa-mura, Okinawa Is., 18–19. vii. 1987, T. UENO leg.

Distribution. Japan (Ryukyus: Amami-Oshima and Okinawa-hontô Isls.).

Biological note. Some specimens were captured on the leaves of *Shiia* sp.

Genus *Parendaeus* nov.

Type species: *Parendaeus abietinus* sp. nov.

Rostrum shiny, curved, much longer than pronotum. Antennae inserted behind the middle of rostrum in both sexes; funicle seven-segmented; scape shorter than funicle. Front femora not thicker than the posteriors. Front and middle tibiae with rectangular inner apical edge. Pygidium often exposed partly in the male. Prosternum with submarginal ditch not contiguous with front coxal cavities.

Note. This genus is closely related to *Heterendaeus* MORIMOTO by having antennal funicle seven-segmented and antennae inserted behind the middle of rostrum, but easily separable from the latter by long and curved rostrum, and slender legs.

Parendaeus abietinus sp. nov.

(Fig. 19)

Derm black, with antennal scape and claw segments yellowish brown, apical part of rostrum, antennal funicle, apices of femora, and apical and basal parts of tibiae brown to dark brown, tarsi blackish.

Forehead between eyes slightly narrower than the base of rostrum, flat. Eyes oblong oval, convex from temples. Rostrum parallel-sided from the base to the antennal insertion, then gently widening toward apex; antennal scrobes running toward the lower part of eyes. Antennae with scape clavate, curved inwards at the apex, reaching eye, as long as basal four segments of funicle combined; funicle with first segment a little longer than second, third and fourth subequal in length, fifth to seventh subequal in length, slightly shorter than third, seventh a little broader than long; club twice as long as broad, almost as long as basal three segments of funicle combined.

Prothorax 1.30–1.45 times as wide as long, widest at the middle, constricted near apical one-third, rounded laterally; disk coriaceous, clothed with pale

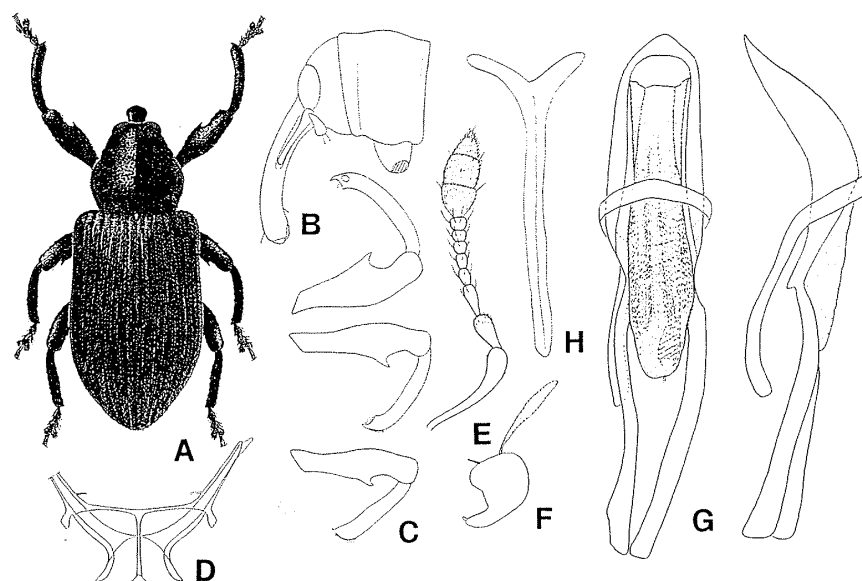


Fig. 19. *Parendaeus abietinus* gen. et sp. nov. — A, Male; B, head and prothorax, lateral view; C, legs; D, metendosternite; E, antenna; F, spermatheca; G, penis; H, spiculum gastrale.

recumbent setae. Scutellum subtriangular, as long as wide, with pale recumbent setae.

Elytra oblong-ovate, 1.55–1.60 times as long as wide, widest a little behind the middle, with faint subapical calli, with fine recumbent pale setae.

Legs sparsely clothed with pale recumbent setae; each femur with a curved sharp tooth; front and middle tibiae curved inward, not dilated.

Prosternum with front coxae located a little behind the middle, the distance between the procoxae and submarginal sulcus as long as that between this sulcus and anterior margin. Mesosternal process one-fourth as wide as middle coxa. First and second ventrites weakly depressed in the middle (male) or slightly convex (female). Underside clothed with pale recumbent setae sparsely.

Length: 2.0–2.7 mm.

Holotype: ♂ (Type No. 2941, Kyushu Univ.), Mt. Ishizuchi, Ehime Pref., 17. vii. 1993, H. KOJIMA leg.

Paratypes: [Honshu] 1 ♀, Masutomi, Yamanashi Pref. S. KIMOTO leg. 6 exs., Inago, Koumi-machi, Minamisaku-gun, Nagano Pref., 25. vi. 1961, Y. ARIGA leg. 1 ♀, Mt. Gamanodan, Kii-Hidaka (Wakayama Pref.), 17. vii. 1976, H. HIRAMATSU leg. 2 ♀, Ohdaigahara, Nara Pref., 23. vii. 1954, Y. SHIBATA leg.; 14 exs., A. AMAHARU leg.; 4 exs., viii. 1972, F. KOBAYASHI leg. [Shikoku] 18 exs., same data as holotype. 109 exs., Mezurudaira-Tengukohgen, Ehime Pref., 20. vii. 1993, H. KOJIMA leg. 1 ♀, Komenono, Ehime Pref., 12. vi. 1976, Y. NOTSU leg. 1 ♀, Omogokei, Ehime Pref., 18. vii. 1993, H. KOJIMA leg. 6 exs.,

Mt. Tsurugisan, Tokushima Pref., 31. vii. 1993, H. KOJIMA leg. 1 ♀, Kuroson, Tosa (Kochi Pref.), 29. iv. 1956, T. HIDAHA leg.

Distribution. Japan (Honshu, Shikoku).

Biological note. The adults are captured on *Picea jezoensis*, *Abies homolepis* and *Larix leptolepis* (Touhi, Urajiromomi, Karamatsu in Japanese) and larvae mine the leaves of *Abies homolepis*.

Genus *Nipponochyromera* nov.

Type species: *Nipponochyromera gracilipes* sp. nov.

Rostrum more or less curved. Antennae inserted before the middle of rostrum; funicle seven-segmented. Front femora not thicker than the posteriors, with a minute tooth, without a row of erect setae. Pygidium often exposed partly in the male. Venter with first ventrite behind the coxae shorter than second, third and fourth subequal in length, shorter than second, and fifth shorter than third and fourth combined.

Note. This genus may be closely related to *Nesendaeus* MARSHALL and *Ochyromera* PASCOE, but the front femora are similar to the posteriors and the teeth are minute.

Nipponochyromera gracilipes sp. nov.

(Fig. 20)

Endaenidius ikezakii MORIMOTO, 1984, Coleopt. Jpn. Col., Osaka, 4: 299, pl. 59, fig. 2 (misident.).

Derm brown to dark brown, with antennae and legs yellowish brown.

Forehead between eyes half (male) or 3/4 times (female) as wide as the base of rostrum, with a slight median fovea. Eyes oblong oval, convex from temples. Rostrum weakly curved, shiny, almost parallel-sided, shorter than (male) or as long as (female) pronotum, with confluent punctures on basal half; antennal scrobe running obliquely to the lower part of eyes. Antennae inserted a little before the middle of rostrum; scape barely reaching eye, much shorter than funicle, slightly longer than basal three segments of funicle combined; funicle with first segment a little shorter than twice the length of second, third and fourth subequal in length, a little shorter than second, fifth to seventh subequal in length, just a little shorter than third, seventh a little broader than wide; club twice as long as broad, as long as basal three segments of funicle combined.

Prothorax 1.25–1.40 times as wide as long, widest a little before or often at the middle, subapical constriction weak, slightly constricted before the base, rounded laterally, disk coriaceous, finely punctured, with pale recumbent setae. Scutellum tongue-shaped, a little longer than wide, with pale recumbent setae.

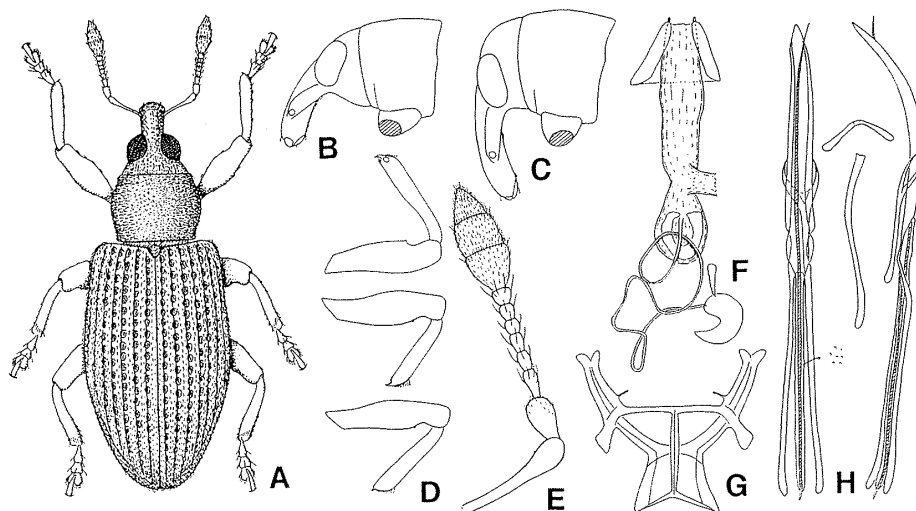


Fig. 20. *Nipponochyromera gracilipes* gen. et sp. nov. — A, Male; B, head and prothorax, lateral view, male; C, ditto, female; D, legs; E, antenna; F, ovipositor; G, metendosternite; H, penis.

Elytra oblong-ovate, 1.7 times as long as wide, widest at the middle (male) or a little behind the middle (female), without subapical calli, clothed with pale recumbent setae.

Legs sparsely clothed with pale recumbent setae. Each femur with a minute or often indefinite tooth. Front tibiae slightly dilated from the base to the middle, then nearly parallel-sided.

Prosternum with front coxae located a little before the middle, and with submarginal sulcus only a little before the axal cavities, the distance between the procoxae and submarginal sulcus as great as that between this sulcus and anterior margin. Underside sparsely clothed with pale recumbent setae.

Length: 2.1–2.6 mm.

Holotype: ♂ (Type No. 2942, Kyushu Univ.), Mt. Daisen, Kuju, Oita Pref., 19. vii. 1978, K. MORIMOTO leg.

Paratypes: [Houshu] 1♂, Mt. Gomanodan, Kii-Hidaka, 20. vii. 1974, H. HIRAMATSU leg. 1♂, Ohda, Ihna-Gun, Mie Pref., 24. vii. 1957, H. ICHIHASHI leg. [Kyushu] 2♀, Gokanoshou, Kumamoto Pref., 9. viii. 1992, H. KOJIMA leg. 1♂, same data as holotype.

Distribution. Japan (Honshu, Kyushu).

Biological note. Some specimens were captured on *Alnus firma* (Yashabushi in Japanese).

Genus *Heterochyromera* nov.

Type species: *Heterochyromera imerodeus* sp. nov.

Forehead between eyes as wide as the base of rostrum. Rostrum curved. Antennae inserted before the middle of rostrum; funicle seven-segmented. Front femora not thicker than posteriors, with a minute tooth, without erect setae beyond it. Pygidium exposed in the male. Venter with first ventrite behind the coxae nearly as long as second, third and fourth subequal in length, just a little shorter than second, fifth ventrite as long as third and fourth ventrites combined. Metendosternite with anterior tendon arisen from the base of anterior arm.

Note. This genus is similar to *Nipponochyromera* and *Nesendaeus* MARSHALL, but the forehead between eyes is as wide as the base of rostrum and the fifth ventrite is as long as third and fourth ventrites combined. *Nesendaeus monochrous* from Fukien described by VOSS (1953) is seemed to be congeneric with this genus.

Heterochyromera imerodeus sp. nov.

(Fig. 21)

Derm yellowish brown, often light reddish brown, with antennae and legs lighter.

Eyes oval, strongly prominent from temples. Rostrum weakly curved, coriaceous, weakly carinate on each side of basal half, parallel-sided, shorter (male) or a little shorter (female) than pronotum, with antennal scrobes running to beneath the base of rostrum. Antennae inserted before the middle of rostrum; scape as long as funicle; funicle with first segment a little longer than second, third to seventh subequal in length, half the length of second, seventh nearly as long as broad; club twice as long as broad, almost as long as basal three segments of funicle combined.

Prothorax 1.1–1.2 times as wide as long, widest at the middle, subapical constriction weak, and slightly rounded laterally, disk with dense shallow punctures and without setae. Scutellum tongue-shaped, a little longer than wide, clothed with silvery setae.

Elytra 1.4–1.5 times as long as wide, almost parallel-sided or slightly widened toward the middle; each puncture of striae with a fine silvery seta, with slight subapical calli.

Legs nearly bare, very sparsely with fine recumbent silvery setae; each femur with a minute tooth; front tibiae weakly curved at the base, slightly bisinuate internally, broadest before the middle.

Prosternum with front coxae located a little behind the middle, with indistinct submarginal sulcus in the middle between the anterior margin and the coxae. Mesosternal process one-third as wide as the middle coxa. Underside clothed with very fine recumbent silvery setae sparsely.

Length: 1.8–2.3 mm.

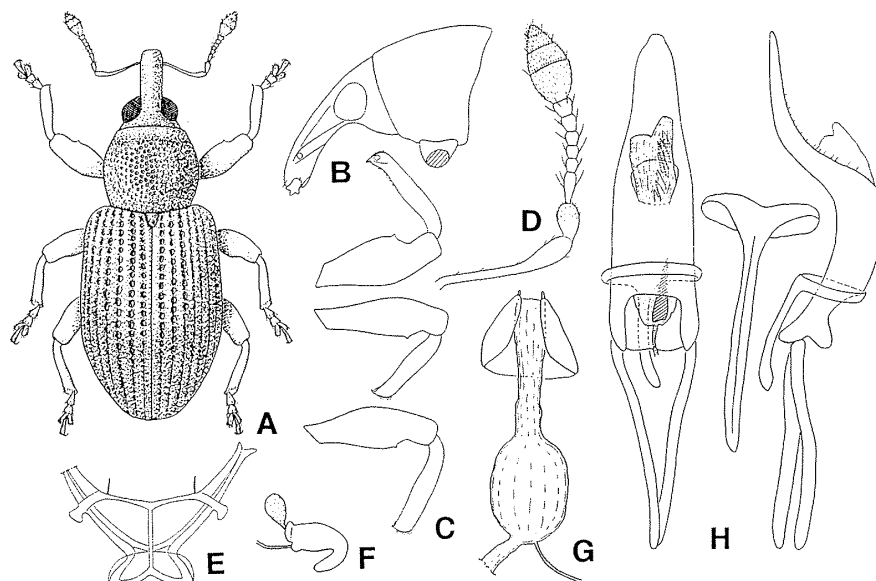


Fig. 21. *Heterochyromera imerodeus* gen. et sp. nov. — A, Male; B, head and prothorax, lateral view; C, legs; D, antenna; E, metendosternite; F, spermatheca; G, ovipositor; H, penis.

Holotype: ♂ (Type No. 2943, Kyushu Univ.), Madara-jima Is., Saga Pref., 24. ix. 1993, H. KOJIMA leg.

Paratypes: [Kyushu] 45 exs., same data as holotype. 1♂, Hirashima Is., Nagasaki Pref., 3. viii. 1978, M. EJIMA leg.; 2♀, 4. viii. 1978, M. EJIMA leg. 1♂, Teuchi, Koshiki-jima Is., Kagoshima Pref., 27–29. viii. 1960, K. MORIMOTO leg. [Ryukyus] 1♂, Nakanoshima Is., Tokaras, Kagoshima Pref., 1–2. iv. 1975, H. IRIE leg. 1♂, Mikyo, Tokunoshima Is., Kagoshima Pref., 27. viii. 1963, Y. HIRASHIMA leg.

Distribution. Japan (Kyushu: Madara-jima, Hirashima and Koshiki-jima Isls., Ryukyus: Nakanoshima and Tokunoshima Isls.).

Biological notes. This species was captured on *Eurya emarginata* (Hama-hisakaki in Japanese) on Madara-jima Is.

Remarks. This species is closely related to *Nesendaeus monochrous* VOSS, but easily distinguishable from it by the relatively shorter elytra with conjointly rounded apices.

Key to Japanese Genera

- 1 (6) Antennae with six segments in funicle
- 2 (3) Front femora much thicker than posteriors, with a large triangular tooth, which is larger than the posteriors, and with a row of erect setae beyond it *Endaeus* SCHOENHERR

- 3 (2) Front femora not thicker than the posteriors, with a minute tooth, and without erect setae beyond it.
- 4 (5) Front and middle tibiae with a minute uncus at inner angle. Antennal scape much shorter than funicle. Pygidium concealed
.....*Endaenidius* MORIMOTO
- 5 (4) Front and middle tibiae with uncus at outer angle. Antennal scape as long as funicle. Pygidium exposed in both sexes
.....*Gryporrhynchus* ROELOFS
- 6 (1) Antennae with seven segments in funicle.
- 7(10) Antennae inserted behind the middle of rostrum. Front femora not thicker than the posteriors, with a small tooth and without erect setae beyond it.
- 8 (9) Rostrum straight, shorter than pronotum, scrobes prolonged anteriorly before sockets. Apex of tibiae rounded at the inner corner
.....*Heterendaeus* MORIMOTO
- 9 (8) Rostrum curved, longer than pronotum. Apex of tibiae angulate at the inner corner
.....*Parendaeus* nov.
- 10 (7) Antennae inserted in or before the middle of rostrum.
- 11(12) Front femora thicker than the posteriors, with a large triangular tooth, which is larger than the posteriors, and with a row of erect setae beyond it
.....*Ochyromera* PASCOE
- 12(11) Front femora not thicker than the posteriors, with a minute tooth and without a row of erect setae beyond it.
- 13(14) Venter with fifth ventrite much shorter than third and fourth ventrites combined
.....*Nipponochyromera* nov.
- 14(13) Fifth ventrite as long as third and fourth ventrites combined
.....*Heterochyromera* nov.

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