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Notes on the Genus *Neoennearthron* (Coleoptera,
Ciidae), with Description of a New Species
from Luzon Island, the Philippines¹⁾

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Abstract A new species of the ciid genus *Neoennearthron* is described from Luzon Island, the Philippines, under the name of *N. sakaii*. Diagnostic characters of the genus and the known species are reviewed. The male of *N. hisamatsui* is described and illustrated for the first time.

Key words: Coleoptera; Ciidae; new species; *Neoennearthron*; Philippines.

The genus *Neoennearthron* MIYATAKE, 1954, belonging to the tribe Ciini of the subfamily Ciinae, has been represented by only two species, *N. bicarinatum* MIYATAKE and *N. hisamatsui* MIYATAKE, both from Japan.

Recently, I had an opportunity to examine a collection of Ciidae made by Dr. M. SAKAI, who had participated in the Zoological Expedition to the Philippines 1985 made by the National Science Museum, Tokyo. During the course of the study on this collection, I found a new species of the genus *Neoennearthron* from Mountain Province of Luzon Island.

In the present paper, descriptions of the new species and male features of *N. hisamatsui* are given together with brief notes on the diagnoses of the genus and the known species.

Genus *Neoennearthron* MIYATAKE

Neoennearthron MIYATAKE, 1954, 58–59 (Type species: *Neoennearthron bicarinatum* MIYATAKE, original designation, monotypy); LAWRENCE, 1967, 99; ABDULLAH, 1973, 232 [cataloged]; MIYATAKE, 1985, 279 [key]; LAWRENCE, 1987, 43; KAWANABE, 1994, 187.

Body oblong, glabrous on dorsum. Maxilla with galea semicircular and bearing relatively stout bristles; inner margin of lacinia roundly produced inward; terminal segment of maxillary palpus relatively stout and oblong-ovate. Antenna 9-segmented; terminal segment of club bearing four sensillifers, one of which is situated at the apex. Elytral suture without apical inflexed margin. Prosternal disc in

1) A part of the specimens treated in the present paper were obtained by the Zoological Expedition to the Philippines made by the National Science Museum, Tokyo, under the Grants-in-aid for Overseas Scientific Survey Nos. 60041078 and 61043074 from the Ministry of Education, Science and Culture, Japan.

front of coxae somewhat tumid medio-longitudinally; prosternal process relatively thick, upheaved to the basal level of prosternum. Protibia serrate laterally, acutely dentate at outer apical angle. Tarsal formula 4-4-4 in both sexes. Abdominal fovea present in male.

Remarks. This genus is allied to the Asian genus *Euxestocis* MIYATAKE in the feature of the prosternal process, and is also allied to the Neotropical genus *Porculus* LAWRENCE in the feature of the protibia. However, these two genera have 10-segmented antennae, and in the former the prosternal disc in front of the coxae is medio-longitudinally carinate and in the latter the prosternal process is lamellate (MIYATAKE, 1954; LAWRENCE, 1987).

Neoennearthron sakaii sp. nov.

(Figs. 1-5)

Holotype (male). Body length (excluding head): 2.45 mm; greatest breadth of

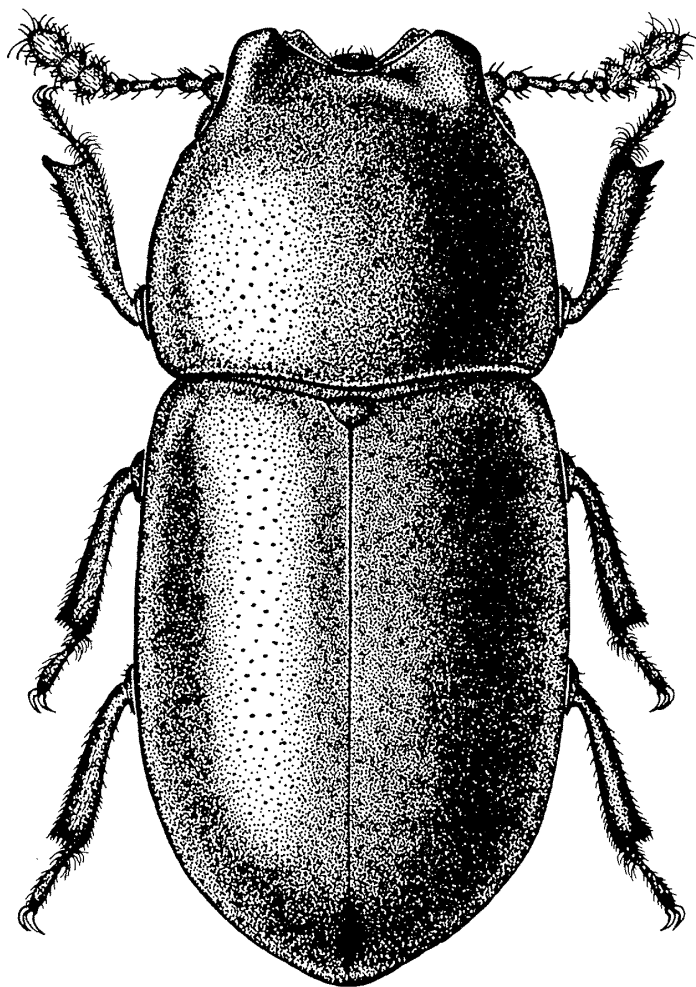


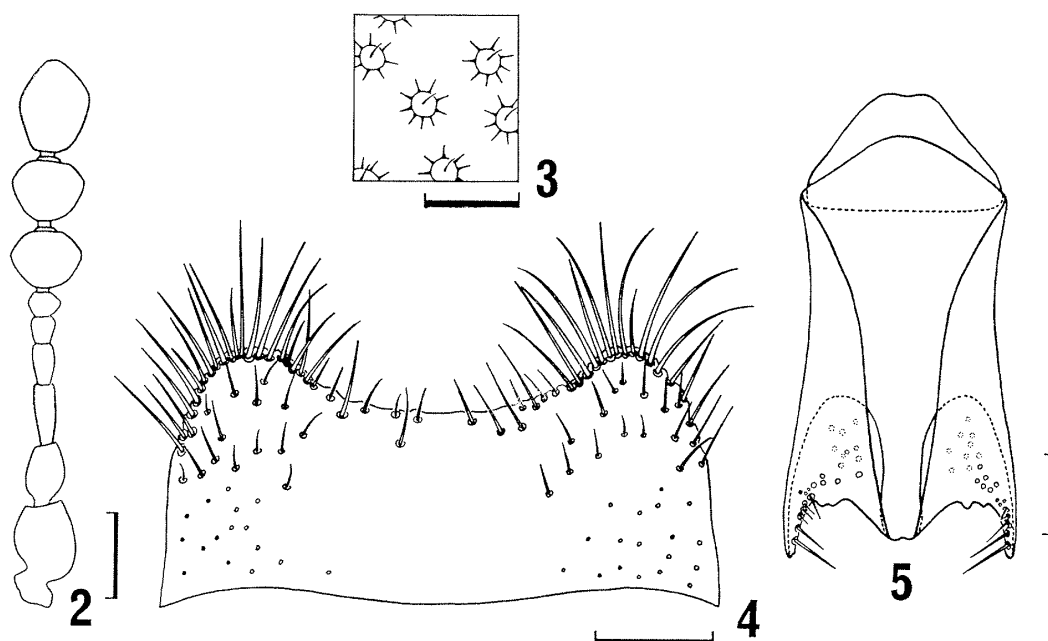
Fig. 1. *Neoennearthron sakaii* sp. nov., male.

elytra: 1.22 mm.

Body oblong, stout, 2.18 times as long as elytral breadth, strongly convex, shiny on dorsum. General color reddish black; elytra somewhat brighter; anterior areas of head, antennal clubs, gula, mandibles, legs and abdominal sternites reddish brown; mouthparts, antennal funicles and tarsi yellowish brown. Punctures on dorsum each bearing a very short fine hair.

Head distinctly punctate, shagreened at vertex; fronto-clypeal ridge produced forward, reflexed above at each side, and forming two subtriangular plates, of which apical angles are faintly emarginate. Antenna 9-segmented; 3rd segment long and slender, 1.7 times as long as 4th, 5th as long as 6th, 7th to 9th forming a loose club (Fig. 2).

Pronotum including apical projections 0.9 times as long as broad; anterior margin strongly produced forward and upturned into two lateral projections, which are obliquely truncated at apices; margin between the projections arcuately emarginate; anterior corners angulate; lateral margins narrowly ridged, and partially visible from above; basal margin narrowly ridged, and faintly sinuate; hind angles broadly rounded; dorsum irregularly and closely punctate; punctures shallow, fine but clear, with eight or nine microscopic incisions around themselves; interstices between punctures smooth (Fig. 3). Scutellum semicircular, rugulose, covered with very small punctures. Elytra 1.3 times as long as broad, and 1.57 times as long as pronotum; sides almost subparallel though weakly divergent from base to basal two-thirds, then gradually convergent apically; disc closely and shallowly



Figs. 2-5. *Neoennearthron sakaii* sp. nov. — 2, Antenna; 3, surface on pronotum; 4, eighth abdominal sternite of male; 5, tegmen of male genitalia. Scales for Fig. 2: 0.1 mm; Figs. 3-5: 0.05 mm.

punctate; punctures uniform in size, somewhat smaller but similar in conformation to those on pronotum; suture margined.

Prosternal disc in front of coxae slightly tumid, then transversely and weakly depressed just before each coxa; prosternal process relatively thick, somewhat broadened near apex, 1.2 times as long as prosternum before coxae, and 0.19 times as broad as procoxal cavity, remarkably upheaved to the level of the base of pro-sternum. Metasternum 1.8 times as broad as long, with medio-longitudinal groove which is 0.19 times as long as median length of metasternum. First abdominal sternite with a small, circular and marginally pubescent fovea at the middle.

Male genitalia in paratypes. Eighth abdominal sternite fairly wider than long, with the apical margin shallowly emarginate, armed with long setae on the lateral projections and with short ones on the bottom of the emargination (Fig. 4). Tegmen as illustrated (Fig. 5), apical area divided into two slender lobes, the inner sides of which are provided with several setae, 0.35 times as long as the combined length of visible abdominal sternites.

Female. Fronto-clypeal ridge slightly reflexed and forming arcuate lamella at each side; anterior margin of pronotum broadly rounded, not produced forward; first abdominal sternite devoid of pubescent fovea.

Variation in a series of paratypes.

Male (n=14): Body length (excluding head and including pronotal projection) 1.94–2.28 mm (\bar{X} =2.16, SD=0.12); greatest breadth of elytra 0.94–1.07 mm (\bar{X} =1.03, SD=0.04). Body length 2.04–2.15 times (\bar{X} =2.1, SD=0.03) as long as elytral breadth. Pronotum 0.82–0.9 times (\bar{X} =0.85, SD=0.02) as long as broad. Elytra 1.26–1.32 times (\bar{X} =1.29, SD=0.02) as long as broad, and 1.54–1.71 times (\bar{X} =1.61, SD=0.06) as long as pronotal length.

Female (n=12): Body length (excluding head) 1.84–2.21 mm (\bar{X} =2.04, SD=0.11); greatest breadth of elytra 0.92–1.16 mm (\bar{X} =1.02, SD=0.06). Body length 1.96–2.22 times (\bar{X} =2.09, SD=0.05) as long as elytral breadth. Pronotum 0.72–0.8 times (\bar{X} =0.77, SD=0.02) as long as broad. Elytra 1.24–1.35 times (\bar{X} =1.3, SD=0.03) as long as broad, and 1.78–1.91 times (\bar{X} =1.86, SD=0.04) as long as pronotal length.

Type series. Holotype: ♂, Mt. Data (2,250 m), Mountain Prov., Luzon, 13. VII. 1985, M. SAKAI leg. Paratypes: 10 ♂♂, 10 ♀♀, same data as holotype; 2 ♂♂, 1 ♀, same locality, 14. VII. 1985, M. SAKAI leg.; 2 ♂♂, 1 ♀, same locality, 25. VII. 1985, M. SAKAI leg. The holotype and two paratypes are preserved in the National Science Museum (Nat. Hist.), Tokyo. The remaining paratypes are deposited in the collection of the Entomological Laboratory, College of Agriculture, Ehime University, Matsuyama.

Distribution. Philippines (Luzon Is.).

Host fungus. Unknown.

Comparative notes. This new species resembles *Neoennearthron bicarinatum* MIYATAKE from Japan in the features of the projections of head and pronotum in

male. It differs from the latter in the following points: the body is larger, the ground surface of pronotum is smooth, the punctures of pronotum are provided with radial microscopic incisions around themselves and the tegmen of male genitalia is armed with setae in the apical area.

Neoennearthron bicarinatum MIYATAKE

[Japanese name: Futatsuno-tsutsukinokomushi]

(Figs. 6–10)

Neoennearthron bicarinatum MIYATAKE, 1954, 59–60; MIYATAKE, 1955, 4, f. 6; HAYASHI, 1959, 476 [larva]; NAKANE, 1963, 216, pl. 108, f. 25 [noted; photo]; MIYATAKE, 1985, 283, pl. 46, f. 27 [noted; photo].

Additional description. *Male.* Ground surface of pronotum microreticulate, but devoid of microscopic radial incisions around themselves (Fig. 8). Eighth ab-

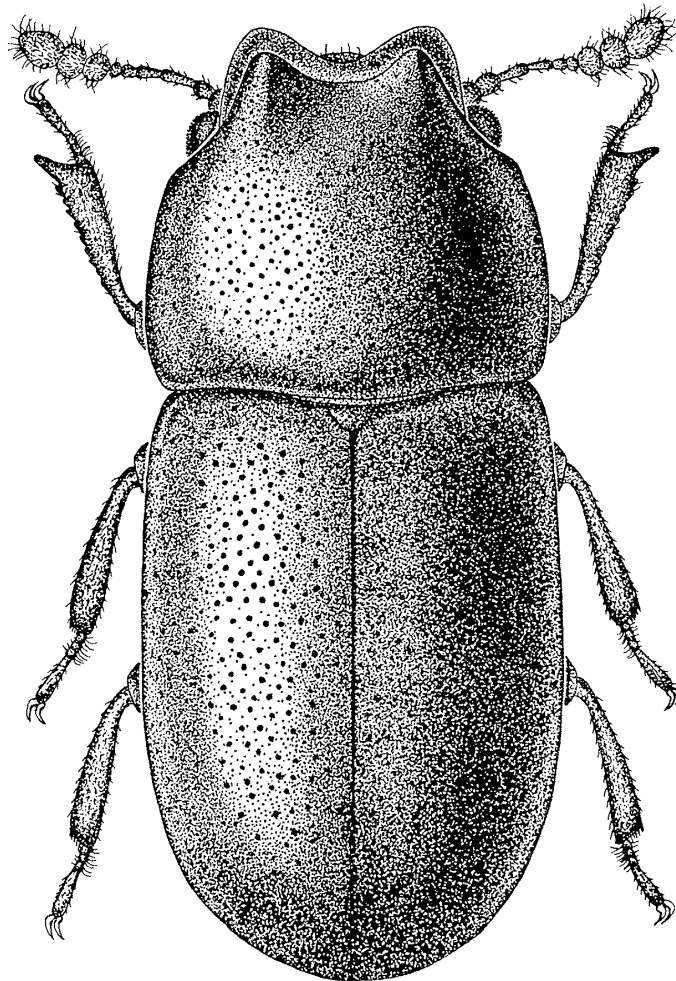
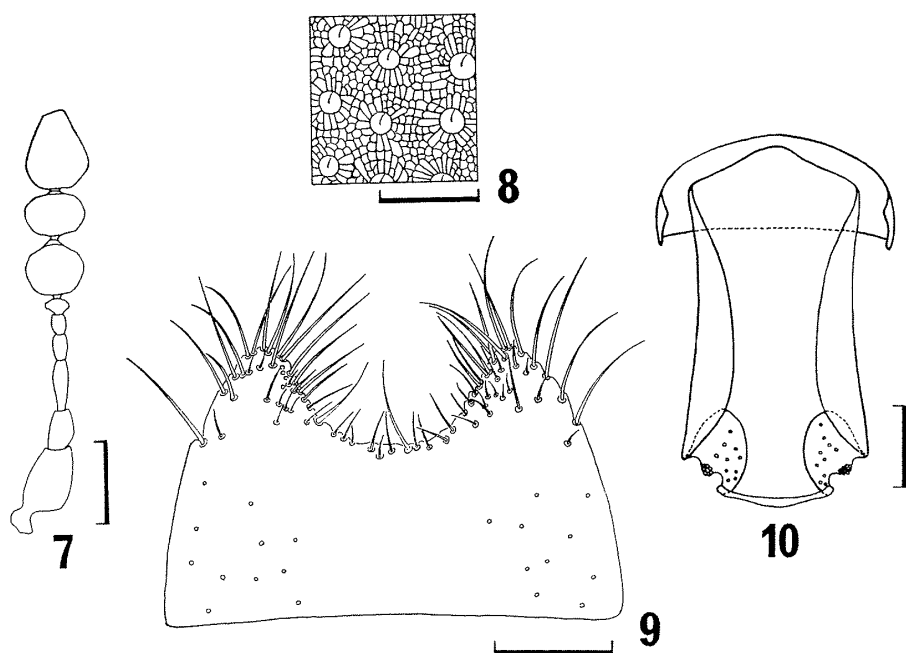


Fig. 6. *Neoennearthron bicarinatum* MIYATAKE, male.



Figs. 7–10. *Neoennearthron bicarinatum* MIYATAKE. — 7, Antenna; 8, surface on pronotum; 9, eighth abdominal sternite of male; 10, tegmen of male genitalia. Scales for Fig. 7: 0.1 mm; Figs. 8–10: 0.05 mm.

dominal sternite with apical margin deeply emarginate, armed with long setae on the lateral projections and short setae at the bottom of the emargination (Fig. 9). Tegmen as illustrated (Fig. 10), apical corner truncate, largely and semiovally convex dorsad, about 0.3 times as long as the combined length of visible abdominal sternites.

Variation. Male ($n=42$, including type specimens): Body length (excluding head and including pronotal projection) 1.39–2.28 mm ($\bar{X}=1.86$, $SD=0.22$); greatest breadth of elytra 0.68–1.05 mm ($\bar{X}=0.89$, $SD=0.09$). Body length 1.98–2.21 times ($\bar{X}=2.11$, $SD=0.05$) as long as elytral breadth. Pronotum 0.73–0.86 times ($\bar{X}=0.8$, $SD=0.02$) as long as broad. Elytra 1.26–1.44 times ($\bar{X}=1.36$, $SD=0.04$) as long as broad, and 1.67–2.03 times ($\bar{X}=1.83$, $SD=0.08$) as long as pronotal length. Female ($n=60$, including type specimens): Body length (excluding head) 1.53–2.24 mm ($\bar{X}=1.84$, $SD=0.17$); greatest breadth of elytra 0.73–1.05 mm ($\bar{X}=0.88$, $SD=0.08$). Body length 1.96–2.22 times ($\bar{X}=2.09$, $SD=0.05$) as long as elytral breadth. Pronotum 0.71–0.84 times ($\bar{X}=0.79$, $SD=0.03$) as long as broad. Elytra 1.29–1.47 times ($\bar{X}=1.38$, $SD=0.04$) as long as broad, and 1.71–2.14 times ($\bar{X}=1.96$, $SD=0.09$) as long as pronotal length.

Specimens examined. **HONSHU:** Aomori Pref.—1 ♂, 1 ♀, Towada, 10. IX. 1968, A. FUKUDA leg. Kanagawa Pref.—1 ♂, Kamiyama, Hakone, 4. VI. 1977, Y. HIRANO leg.; 1 ♂, Dôdaira, Tanzawa, 16. VI. 1993, Y. HIRANO leg. Gifu Pref.—3 ♂♂, 1 ♀, Itoshiro-ôsugi, Gujô-gun, 12. XI. 1991, K. SETSUDA leg.; 1 ♂, 2 ♀♀, Mt. Kabura-yama, Itadori-mura, 17. IV. 1992, K. SETSUDA leg. Ôsaka Pref.—1 ♀,

Minoo, 29. IV. 1959, H. KONISHI leg. **SHIKOKU**: Ehime Pref.—9 ♂♂, 15 ♀♀, Omogo, 2. V. and 1. VI. 1954, M. MIYATAKE leg. (type series in coll. Ehime Univ.); 1 ♂, 1 ♀, Kuromori-tôge, Onsen-gun, 18. VI. 1955, M. MIYATAKE leg.; 1 ♂, Omogokei, 5. VIII. 1966, M. MIYATAKE leg.; 5 ♂♂, 7 ♀♀, same locality 18–19. V. 1969, M. MIYATAKE leg.; 1 ♂, Mt. Amagiri, Odamiyama, 27. VII. 1967, K. HATTA leg.; 1 ♂, 3 ♀♀, Mt. Ôtsuki, Matsuyama, 12. IV. 1989, M. KAWANABE leg.; 5 ♂♂, 4 ♀♀, Fukumigawa, Matsuyama, 15. IV. 1989, M. KAWANABE leg.; 9 ♂♂, 21 ♀♀, Komenono, Matsuyama, 22. V. 1989, M. KAWANABE leg. **Kôchi Pref.**—1 ♂, 1 ♀, Kuroson, 29. IV. 1956, M. MIYATAKE leg. **KYUSHU**: Fukuoka Pref.—2 ♀♀, Mt. Hikosan, 6. VII. 1957, M. MIYATAKE leg.; 1 ♀, same locality, 2. V. 1971, Y. TAKAKURA leg. **Ôita Pref.**—5 ♂♂, 3 ♀♀, Kôbaru, 20. VII. 1989, M. KAWANABE leg.

Distribution. Japan (Honshu, Shikoku, Kyushu).

Host fungi. *Onnia scaura* (LLOYD) IMAZEKI (Sajitake in Japanese), *Inonotus mikadoi* (LLOYD) IMAZEKI (Kawausotake in Japanese), *Inonotus xeranticus* (BERK.) IMAZEKI et AOSHIMA (Daidaitake in Japanese) and *Phellinus gilvus* (SCHW.: FR.) PAT. (Nendotake in Japanese).

Neoennearthron hisamatsui MIYATAKE

[Japanese name: Ôshima-futatsuno-tsutsukinokomushi]

(Figs. 11–15)

Neoennearthron hisamatsui MIYATAKE, 1959, 119–121; MIYATAKE, 1985, 283 [noted]; KAWANABE, 1993, 174–175 [distribution].

Additional description. *Male.* Fronto-clypeal ridge somewhat widely laminate at each side; anterior margin of pronotum with short bicornuous projections (Fig. 11); first abdominal sternite with a small, circular and marginally pubescent fovea at the middle.

Apical margin of eighth abdominal sternite weakly emarginate at the middle, armed with mixed long and short setae, which are entirely wanting in the bottom of the emargination (Fig. 14). Tegmen as illustrated (Fig. 15), apical corner deeply emarginate and semiovally convex dorsad, about 0.4 times as long as the combined length of visible abdominal sternites.

Variation. *Male* (n=19): Body length (excluding head and including pronotal projection) 1.31–1.63 mm (\bar{X} =1.5, SD=0.1); greatest breadth of elytra 0.62–0.77 mm (\bar{X} =0.71, SD=0.04). Body length 2.06–2.16 times (\bar{X} =2.12, SD=0.03) as long as elytral breadth. Pronotum 0.75–0.81 times (\bar{X} =0.78, SD=0.02) as long as broad. Elytra 1.33–1.42 times (\bar{X} =1.38, SD=0.03) as long as broad, and 1.79–1.96 times (\bar{X} =1.86, SD=0.04) as long as pronotal length. *Female* (n=19, including type specimens): Body length (excluding head) 1.29–1.82 mm (\bar{X} =1.58, SD=0.11); greatest breadth of elytra 0.61–0.85 mm (\bar{X} =0.74, SD=0.05). Body length 2.1–2.2 times (\bar{X} =2.14, SD=0.03) as long as elytral breadth. Pronotum

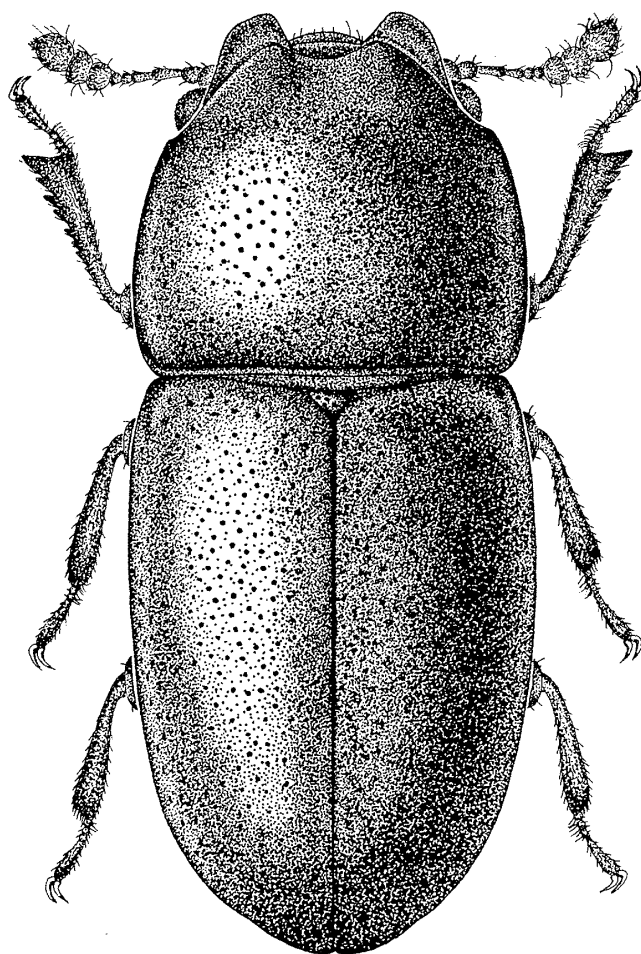


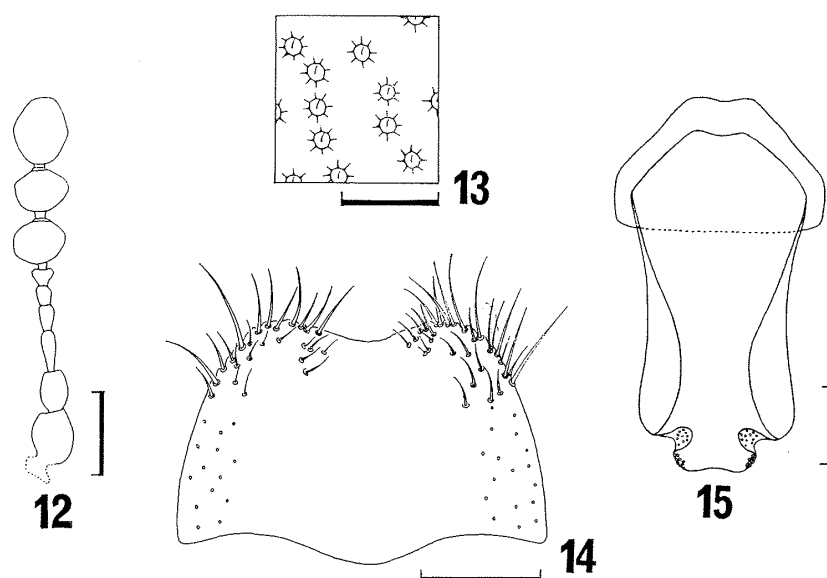
Fig. 11. *Neoennearthron hisamatsui* MIYATAKE, male.

0.78–0.84 times ($\bar{X}=0.8$, $SD=0.02$) as long as broad. Elytra 1.35–1.43 times ($\bar{X}=1.39$, $SD=0.03$) as long as broad, and 1.74–1.96 times ($\bar{X}=1.85$, $SD=0.06$) as long as pronotal length.

Specimens examined. **SHIKOKU:** Kôchi Pref.—2 ♂♂, 3 ♀♀, Cape Ashizurimisaki, 25–26. VI. 1989, M. KAWANABE leg. **NANSEI ISLANDS:** Yaku-shima Is.—11 ♂♂, 7 ♀♀, Hanayamahodô-iriguchi, 23. IX. 1989, M. KAWANABE leg. Nakanoshima Is. of the Tokara Is.—1 ♂, 28. V. 1962, M. SATÔ leg. Akuseki-jima Is. of the Tokara Is.—1 ♂, 1 ♀, 31. VII. 1969, M. SAKAI leg. Amami-ôshima Is.—3 ♀♀ (type series in coll. Ehime Univ.), Shinmura, 23. VII. 1954, S. HISAMATSU leg. Okinawa-hontô Is.—4 ♂♂, 4 ♀♀, Koza, 26. VIII. 1977, Y. NOTSU leg. Ishigakijima Is.—1 ♀, Yarabu, 26. III. 1962, S. TAMAI leg.

Distribution. Japan (Shikoku, Nansei Is.).

Host fungi. *Fomitella rhodophaea* (LEV.) AOSHIMA (Ôsurumetake in Japanese) and *Oxyporus* sp.



Figs. 12–15. *Neoennearthron hisamatsui* MIYATAKE. — 12, Antenna; 13, surface on pronotum; 14, eighth abdominal sternite of male; 15, tegmen of male genitalia. Scales for Fig. 12: 0.1 mm; Figs. 13–15: 0.05 mm.

Key to the Species of the Genus *Neoennearthron*

1. Ground surface of pronotum microreticulate; punctures surrounded with microreticulation but devoid of microscopic radial incisions around themselves (Fig. 8). Eighth abdominal sternite strongly emarginate in male (Fig. 9). Japan (Honshu, Shikoku, Kyushu) *N. bicarinatum* MIYATAKE
- Ground surface of pronotum smooth; punctures with microscopic radial incisions around themselves (Fig. 3, 13). Eighth abdominal sternite weakly emarginate in male 2
2. Fronto-clypeal ridge forming subtriangular plate at each side in male. Pronotal projections of male long and large (Fig. 1). Sides of elytra gently rounded in apical third. Eighth abdominal sternite of male transverse, armed with short setae at the bottom of the emargination (Fig. 4). Tegmen of male genitalia with setae near apical area (Fig. 5). Philippines (Luzon Is.) *N. sakaii* sp. nov.
- Fronto-clypeal ridge forming trapezoidal to arcuate lamella at each side in male. Pronotal projections of male short and small (Fig. 11). Sides of elytra more strongly convergent in apical third. Eighth abdominal sternite of male subtrapezoidal, devoid of setae at the bottom of the emargination (Fig. 14). Tegmen of male genitalia without distinct setae near apical area (Fig. 15). Japan (Shikoku, Nansei Is.) *N. hisamatsui* MIYATAKE

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