

A New Species and Subspecies of *Neseuthia* SCOTT (Coleoptera, Scydmaenidae) from Okinawa Island, Japan

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Abstract New scydmaenid beetles, *Neseuthia okinawana* sp. nov. and *N. nomurai disjuncta* subsp. nov. are described from Okinawa Island, Japan. Important morphological details are illustrated, and a key to all Japanese species of *Neseuthia* is given.

Key words: Coleoptera, Scydmaenidae, Cephenniini, *Neseuthia* SCOTT, new species, Japan, taxonomy.

Introduction

Four species of *Neseuthia* are known to occur in Japan (JAŁOSZYŃSKI & HOSHINA, 2003). They inhabit the Yaeyama Isls. (Okinawa Pref.), Tokunoshima Is. (Kagoshima Pref.), and the Tsushima Isls. (Nagasaki Pref.). This distribution suggested that members of *Neseuthia* might also occur in other islands between the Sakishima Archipelago and Kyushu. Indeed, several individuals of *Neseuthia* have recently been collected in Okinawa Island. They belong to two easily distinguishable species. One species clearly differs from all other members of the genus by the unique shape of the aedeagus; it clearly represents a new taxon. The external morphology and the shape of the aedeagus of the other species show a high degree of similarity to *N. nomurai* JAŁOSZYŃSKI et HOSHINA, which is known to occur in Iriomote and Ishigaki islands (Yaeyama Isls., Sakishima Arch.). However, differences in structures of frons and vertex, as well as slightly different shape of sclerites of the endophallus were found. Moreover, no inter-individual variation was observed among specimens from Okinawa Island. Therefore, in this paper we regard this taxon as a subspecies of *N. nomurai*.

Holotypes of the described taxa are deposited in the National Science Museum, Tokyo (NSMT), paratypes in private collection of P. JAŁOSZYŃSKI (PCPJ) and private collection of Shiho and Koji ARAI (PCA).

Taxonomy

Genus *Neseuthia* SCOTT

Neseuthia SCOTT, 1922, p. 201. Type species: *Neseuthia typica* SCOTT, 1922, by original designation.

The genus *Neseuthia* belongs to the tribe Cephenniini within the subfamily Scydmaeninae. Detailed generic characteristics were given and discussed recently by JALOSZYŃSKI and HOSHINA (2003). Members of *Neseuthia* can be recognized on the basis of very small, relatively slender, elongate and usually very convex body with well marked division between pronotum and elytra, which is an unusual shape in the Cephenniini. Other key characters are: apex of pygidium usually visible in dorsal view; procoxae separated by narrow prosternal process; mandibles with subquadrate, broad base and subtriangular apical part; maxillary palpomere IV very short and broad; antennae slender, with variously separated club composed of two or three antennomeres; pronotum with basal pits and sometimes transverse and/or longitudinal groove; males often have peculiar grooves, tubercles or expansions on frons or vertex.

The identification key to Japanese species of *Neseuthia* given by JALOSZYŃSKI and HOSHINA (2003) must be modified to include the new taxa:

Key to Males of *Neseuthia* of Japan

1. Pronotum with median longitudinal groove. 2
— Pronotum without median longitudinal groove. 4
2. Central expansion on vertex and frons relatively flat, divided into posterior and anterior parts. *N. nomurai* JALOSZYŃSKI et HOSHINA. . . 3
— Central expansion on vertex and frons very convex, without transverse division. *N. hobbiti* JALOSZYŃSKI et HOSHINA
3. Posterior part of expansion on vertex longer than wide.
 *N. nomurai nomurai* JALOSZYŃSKI et HOSHINA
— Posterior part of expansion on vertex wider than long.
 *N. nomurai disjuncta* subsp. nov.
4. Pronotal disc with distinct punctation. *N. japonigena* JALOSZYŃSKI et HOSHINA
— Pronotal punctation hardly visible, very fine and sparse. 5
5. Lateral tubercles on vertex very small, hardly noticeable; apex of aedeagus symmetrical. *N. cactiformis* JALOSZYŃSKI et HOSHINA
— Lateral tubercles on vertex distinct; apex of aedeagus asymmetrical.
 *N. okinawana* sp. nov.

Neseuthia okinawana sp. nov.

[Japanese name: Okinawa-harabiro-kokemushi]

(Figs. 1, 2 A–C)

Male (Fig. 1). Body small, moderately slender and convex, 0.91 mm in length, reddish-brown, legs and palpi minimally lighter, setation yellowish.

Head distinctly broader than long, widest at large, convex and coarsely faceted eyes, length 0.12 mm, width 0.25 mm. Vertex trapezoidal, slightly narrowing anteriorly, regularly convex, with a pair of tubercles as small as single ommatidium, located near internal margin of each eye; frons trapezoidal, minimally concave, relatively steeply lowering anteriorly; in strictly dorsal view apical margin of clypeus slightly emarginate; supraantennal tubercles indistinct. Punctuation of head very fine and sparse; setation sparse and very short, hardly noticeable, nearly recumbent. Antenna 0.42 mm

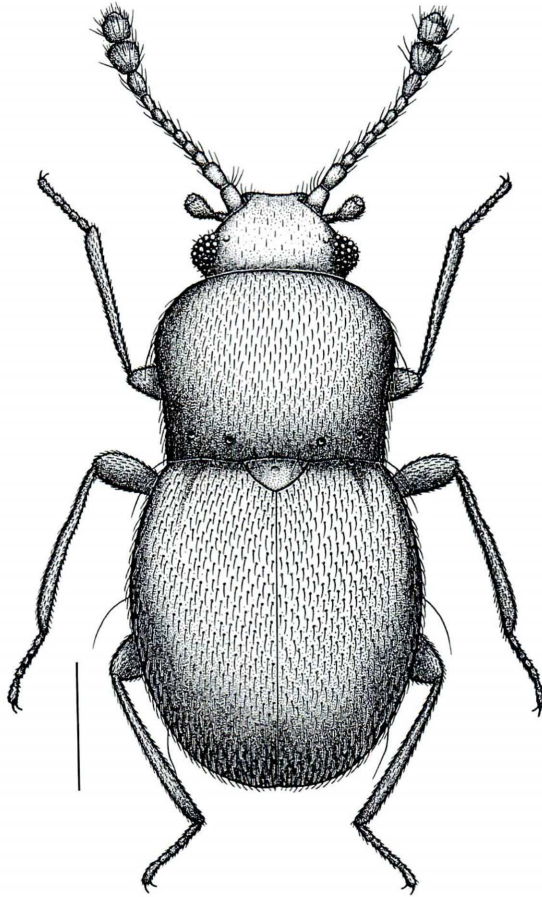


Fig. 1. *Neseuthia okinawana* sp. nov., male habitus. Scale: 0.2 mm.

in length, with enlarged scape and pedicel, flagellomeres III–VIII subequal in size, about $1.5\times$ longer than wide; antennomere IX distinctly broader and slightly longer than VIII, antennal club composed of antennomeres X–XI, which are large and slightly flattened dorso-ventrally. Setation of antenna composed of several long, curved suberect setae on internal surface of antennomere I, sparse, straight suberect setae on remaining antennomeres (slightly longer on IX–XI), and dense transverse setal rings on last two segments.

Pronotum broader than wide, regularly convex, widest near anterior third, length 0.29 mm, maximum width 0.36 mm, width at base 0.32 mm. Anterior margin broadly, shallowly emarginate, anterior angles slightly protruding, blunt (in strictly dorsal view anterior emargination and angles not visible); lateral margins with sharp edge, distinctly serrated, narrowing posteriorly toward minimally obtuse hind angles; in posterior half narrow lateral margin is delimited from disc by narrow impression. Base minimally emarginate in lateral third, with additional, shallow median emargination as wide as scutellum, and with two pairs of latero-basal foveae separated in middle by nearly third of width of base. Pronotal punctation barely visible, very fine and sparse, additional sparse, larger punctures are distributed along lateral margins; setation moderately dense, relatively short, only slightly suberect, lateral margins bear slightly longer setae and additionally two pairs of long, erect setae at the widest place and at hind angles, one more pair of similarly long, posteriorly-directed setae is situated between internal basal foveae.

Elytra oval, very convex, widest near middle, length 0.5 mm, combined width 0.45 mm, elytral index (EI; length/combined width) 1.11. Humeral denticle very small; basal elytral fovea small, located in middle between humerus and scutellum, in broad, subtriangular impression, connected with shallow groove running posteriorly and slightly externally in anterior fourth of each elytron, lateral area adjacent to groove distinctly raised; apices of elytra separately rounded. Scutellum large, triangular with slightly convex sides and large, shallow circular impression in middle. Punctation of elytra moderately dense, composed of punctures larger than on pronotum; setation similar to that on pronotum, additionally each elytron with three long, curved lateral setae located near humerus, in middle and slightly anterior to posterior third. Hind wings well developed, about twice as long as elytra.

Legs relatively long and slender, all femora slightly, gradually clavate, pro- and metatibiae nearly straight, mesotibiae slightly recurved, tarsomere I longer than each of subequal II–IV, tarsomere V nearly as long as III–IV together, tarsus not narrowing distally.

Aedeagus (Fig. 2 A–C) relatively small, 0.21 mm in length, elongate, with distinct basal emargination, well delimited, asymmetrical apical lobe and slightly asymmetrical parameres not exceeding apex of aedeagus. Dorsal wall of median lobe with circular foramen; endophallus with symmetrical, relatively lightly sclerotized structures.

Female. Externally differs from male only in smooth vertex, without tubercles. Body length 0.93 mm, length of head 0.15 mm, width of head 0.25 mm, length of an-

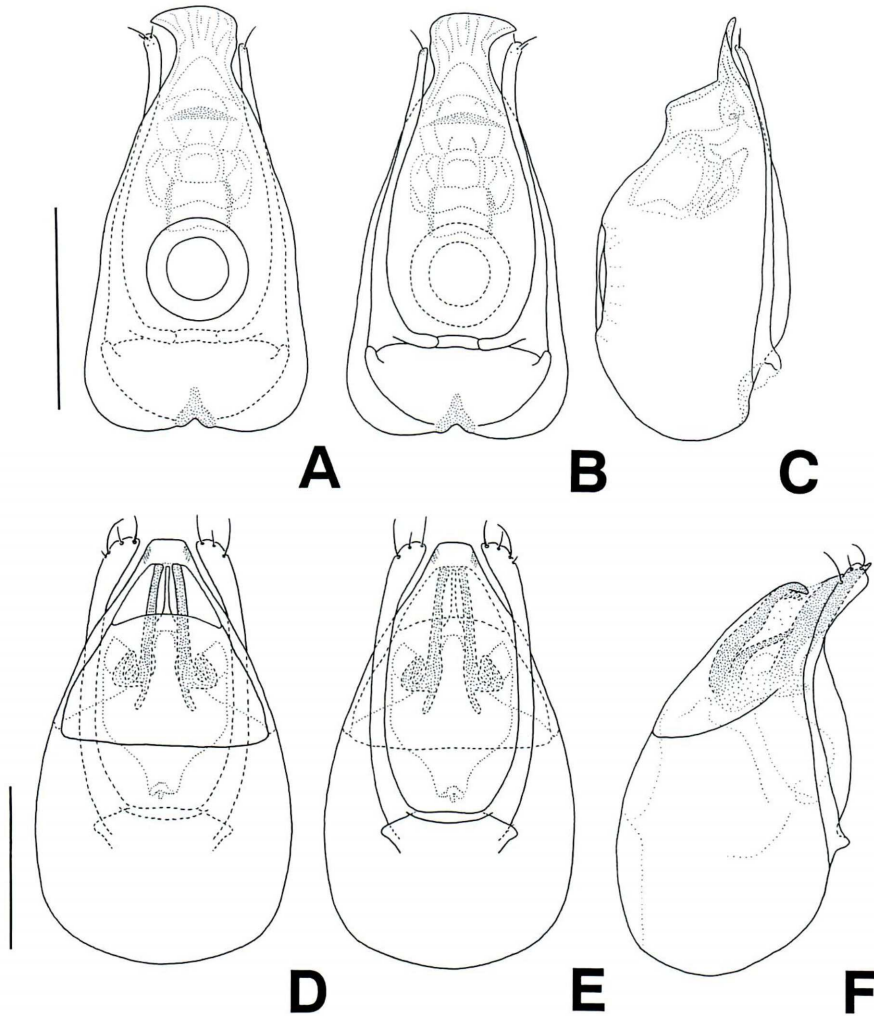


Fig. 2. *Neseuthia okinawana* sp. nov. (A–C) and *N. nomurai disjuncta* subsp. nov. (D–F); aedeagus in dorsal (A, D), ventral (B, E) and lateral (C, F) views. Scale: 0.1 mm.

tenna 0.42 mm, length of pronotum 0.29 mm, maximum width of pronotum 0.37 mm, width of pronotum at base 0.35 mm, length of elytra 0.49 mm, width of elytra 0.46 mm, EI 1.06.

Specimens examined. Holotype, ♂, Japan, Okinawa Pref., Okinawa Is., Okinawa-shi, Chibana-gusuku-ato, 6~9-IX-2003, flight intercept trap, Shiho & Koji ARAI leg. (NSMT); paratype: ♀, same data, except for 6-IX-2003, extracted from leaf litter by Tullgren funnel, K. ARAI leg. (NSMT).

Distribution. Okinawa Island, Okinawa Prefecture, Japan.

Etymology. Locotypical, after the type locality, Okinawa Island.

Remarks. This species closely resembles *N. japonigena* and *N. cactiformis*. It clearly differs from the former species by very fine and sparse pronotal punctation, and from the latter taxon by having larger tubercles on the vertex. Unambiguous identification can be made only by examination of the aedeagus.

Neseuthia nomurai disjuncta subsp. nov.

(Figs. 2 D–E, 3 A–B)

Male. Morphology of this taxon is similar to that of the nominotypical subspecies, the only difference being a slightly different sculpture of frons and vertex. Body length 1.09–1.15 mm (mean 1.11 mm), length of head 0.14–0.16 mm (mean 0.15 mm), width of head 0.26 mm, length of antenna 0.50–0.52 mm (mean 0.51 mm), length of pronotum 0.30–0.31 mm (mean 0.30 mm), maximum width of pronotum 0.36–0.41 mm (mean 0.39 mm), width of pronotum at base 0.35–0.39 mm (mean 0.37 mm), length of elytra 0.60–0.68 mm (mean 0.66 mm), width of elytra 0.52–0.55 mm (mean 0.51 mm), elytral index 0.26. Frons and vertex bear expansions and grooves very similar to structures described for *N. nomurai nomurai*, but entire median tubercle is shorter, especially its posterior part is shorter than wide, as in Fig. 3 A–B.

Aedeagus differs from that of the nominotypical subspecies by having clearly different shape of internal, darkly sclerotized sclerites visible in its apical part, as in Fig. 2 D–F.

Female. Unknown.

Specimens examined. Holotype, ♂, Japan, Okinawa Pref., Okinawa Is., Okinawa-shi, Chibana-gusuku-ato, 6~9-IX-2003, flight intercept trap, Shiho & Koji ARAI leg. (NSMT); paratypes: 5 ♂♂, same data as holotype (PCPJ, PCA).

Distribution. Okinawa Island, Okinawa Prefecture, Japan.

Etymology. The type series of this subspecies has been collected in a locality very distant from the *terra typica* of *N. nomurai nomurai*. This fact is underlined by deriving the new subspecific name from the Latin word “*disjunctus*”, meaning “separate, distant, remote”.

Remarks. Diagnostic characters of this subspecies are the shape of tubercles on vertex and frons and the design of the endophallus. These features can be used for distinguishing the newly described taxon from the nominotypical subspecies. Moreover, known populations of the two subspecies are confined to the Sakishima Archipelago (*N. n. nomurai*), and Okinawa Is. (*N. n. disjuncta*), which is situated over 400 km to the north-east from the former.

Acknowledgments

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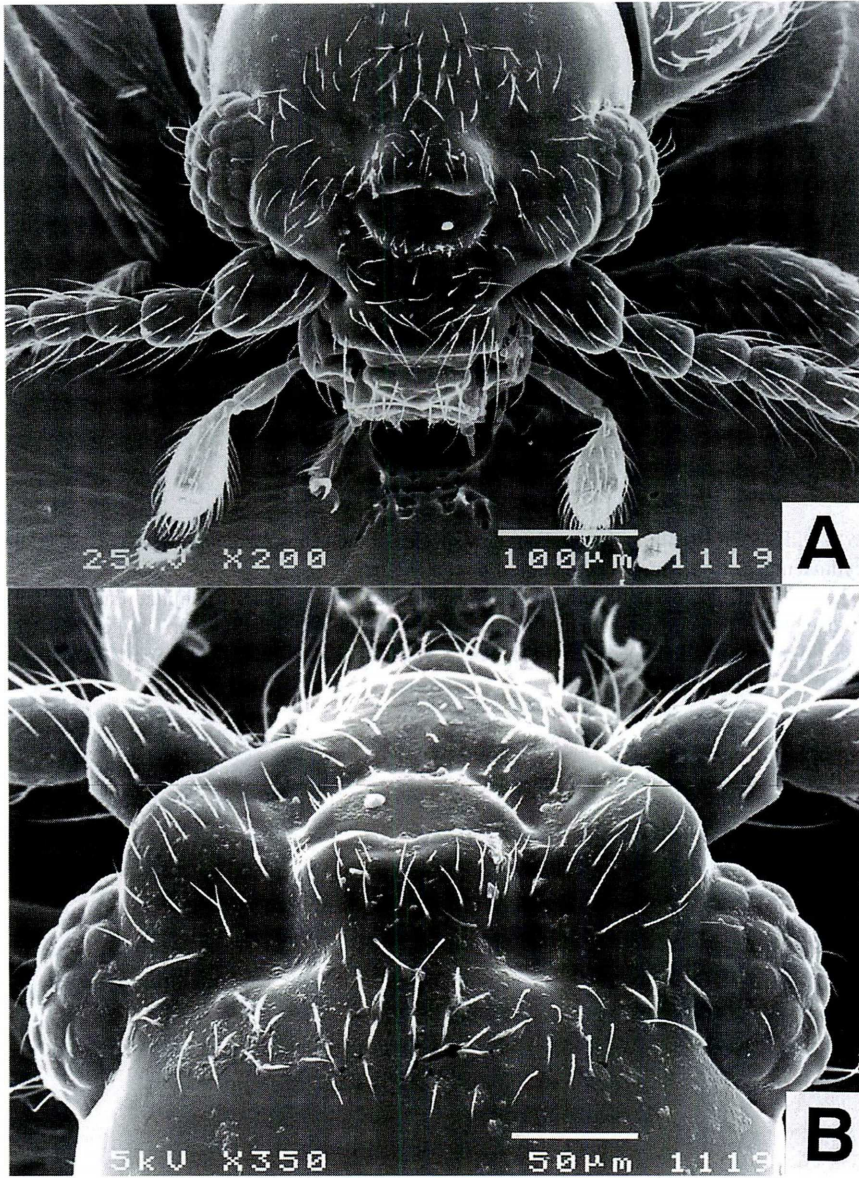


Fig. 3. Scanning electron microphotographs of *Neseuthia nomurai disjuncta* subsp. nov.; head in dorso-anterior (A) and dorsal (B) views.

要 約

P. JALOSZYŃSKI・新井志保・新井浩二：沖縄島から発見された *Neseuthia* 属（コウチュウ目 コケムシ科）の1新種および1新亜種の記載。—— 日本産 *Neseuthia* 属は JALOSZYŃSKI & HOSHINA (2003) によって4新種が記載されている。その産地は八重山諸島、徳之島、対馬であり、それらの島の間にある地域から発見されることが予想されていた。昨年第2、第3著者らが沖縄島で行った調査により複数の個体が得られ、以下の1種1亜種を記載した。

N. okinawana JALOSZYŃSKI, S. ARAI et K. ARAI オキナワハラビロコケムシ

日本産の他の4種とはオス交尾器の形態から容易に区別できる。

N. nomurai disjuncta JALOSZYŃSKI, S. ARAI et K. ARAI

石垣島・西表島から記載された *N. nomurai* JALOSZYŃSKI et HOSHINA に非常によく似ているが、前頭や頭頂の構造、内袋の骨片にわずかながら違いが見られる。

さらにこれらの種を含めた日本産 *Neseuthia* 属の検索表を付した。

References

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