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## ***Rhinocerotopsis nakasei* (Coleoptera, Scarabaeidae, Aphodiinae), a New Genus and Species of Stereomerini from Peninsular Malaysia**

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**Abstract.** *Rhinocerotopsis nakasei* gen. et sp. nov. of the tribe Stereomerini is described based on a single specimen collected with a flight interception trap at Ulu Gombak, Negeri Selangor, Peninsular Malaysia. It is allied to *Stereomera pusilla* Arrow, but is easily distinguished from it by the convex body, the deep, branched sulcus and the presence of projections on the pronotum.

**Key words:** termitophily, flight interception trap, Ulu Gombak, *Stereomera*.

### **Introduction**

Arrow (1905) described a very unusual scarab beetle *Stereomera pusilla* from Singapore. Howden and Storey (1992) established the tribe Stereomerini for *Stereomera* and three other genera: *Termitaxis* Kritten, 1970 from Peru, *Australoxenella* Howden & Storey from Australia, and *Bruneixenus* Howden & Storey from Borneo. Bordat and Howden (1995) added three genera from Borneo to the tribe: *Adebrattia*, *Danielssonia*, and *Pseudostereomera*. Tangelder & Krikken (1982) erected the tribe Termitoderini and transferred *Termitaxis* to it. Therefore, six genera (16 species) remain in Stereomerini. Although the members of the tribe are thought to be termitophiles (Howden & Storey, 1992), nothing is known of their biology except that they are capable of flight. Recently, Mr. Yuta Nakase of Kyoto University kindly gave me a curious scarab beetle that was collected in a flight interception trap (FIT) at Ulu Gombak, Negeri Selangor, in Peninsular Malaysia. The specimen was similar to *S. pusilla* and was apparently a member of the Stereomerini. However, it could not be assigned to any known genus. This paper describes it as a new genus and species.

### ***Rhinocerotopsis* gen. nov.**

*Type species. Rhinocerotopsis nakasei* sp. nov.

*Etymology.* A combination of the rhinoceros genus name “*Rhinoceros*” and the Greek “-opsis”, meaning a

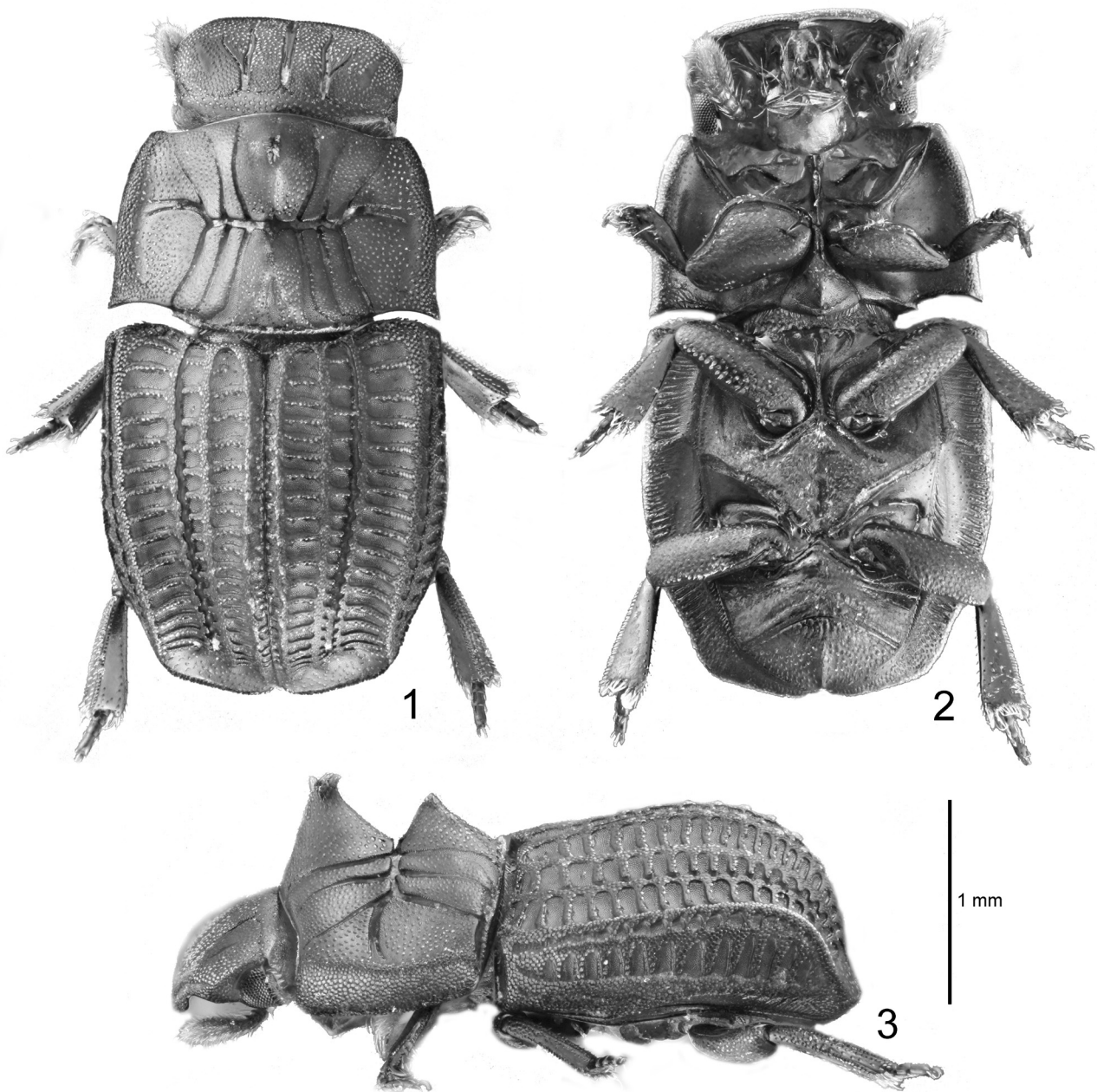
rhinoceros-like appearance, in referring the pronotal projections like rhinoceros horns. Gender, feminine.

*Diagnosis.* This genus is similar to *Stereomera* in the Y-shaped grooves on head and the reticulated elytral surface, but is easily distinguished from it by the convex body, the deep, branched sulcus and the presence of projections on the pronotum and the deep grooves on the elytra, the apices of the elytra not concave. The pronotal projections and elytral grooves are observed also in *Australoxenella* and *Danielssonia* respectively, but the members of those genera do not share the reticulated elytral surface.

### **Description.**

Body (Figs. 1-3) convex dorso-ventrally. Head dorsally broad, about 2 times as wide as long, feebly and irregularly convex, lacking tubercle; clypeus widely rounded, anteriorly with broadly inflexed edge; surface dorsally midline distinctly grooved except near anterior edge, and with a pair of Y-shaped grooves side of midline groove, except for grooves, with close, appressed circular scales giving granulate appearance; gena not obviously delimited; outer posterior part of gena ventrally reflexed; areas anterior of eyes glabrous, not granulated.

Pronotum subquadrate; anterior margin sinuate; lateral margins rounded apical 1/3, subparallel-sided posteriorly; posterior corners acutely angled, produced postero-laterally; pronotal disc strongly irregularly convex, with a transverse sulcus; sulcus with 6 branched longitudinal grooves, 3 each posteriorly and anteriorly; anterior



**Figs. 1-3.** Habitus of *Rhinocerotopsis nakasei* gen. et sp. nov. (holotype).  
1: dorsal view. 2: ventral view. 3: lateral view.

grooves becoming narrower anteriorly; posterior grooves not becoming narrower, connected to posterior margin; between grooves not elevated; front and behind of sulcus each with conical projection; each projection with trichomes at apex; lateral areas around both ends of sulcus shallowly concave; lateral margins convex above; surface with circular scales, that are becoming sparser and smaller toward apices of conical projections. Scutellum minute, with surface smooth.

Elytra exactly fit against posterior margin of pronotum, parallel-sided from base to middle, gently rounded from middle to posterior corners; elytral disc well convex, highest around apical 1/3, then rather abruptly perpendicular posteriorly; with 3 pairs of longitudinal costae in addition to 2 pairs of lateral carina; inner margins of 2nd costae each with a deep, sinuate groove; intervals of costae crossed by transverse ridges, which produce a reticulated appearance; around apices of elytra with

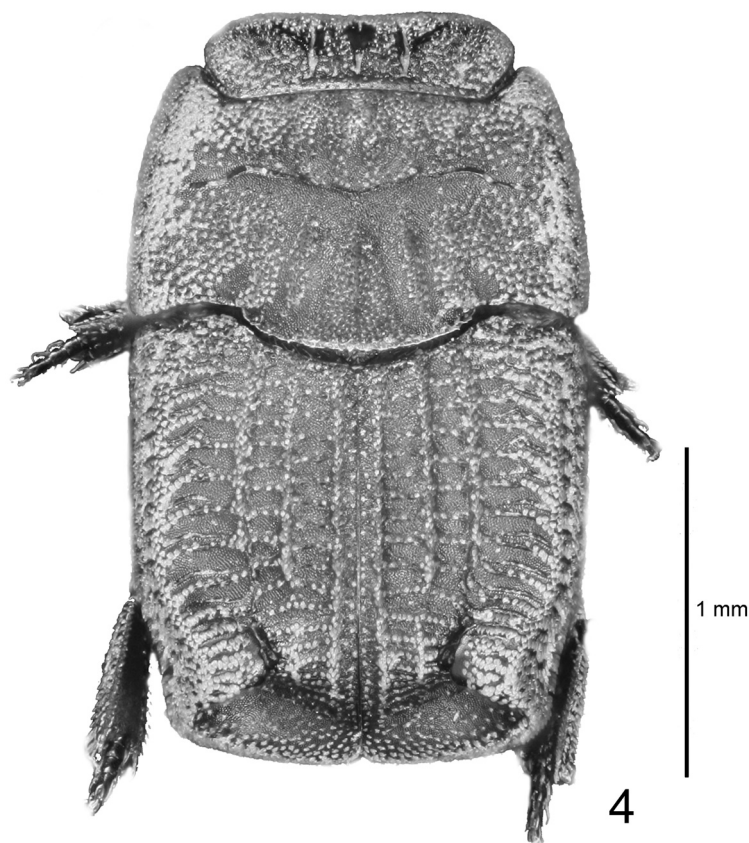


Fig. 4. Habitus of *Stereomera pusilla* Arrow (same collecting data as holotype of *Rhinocerotopsis nakasei*).

surface smooth.

Pygidium ventral, slightly convex, with a longitudinal carina (could be a sexual dimorphism), wider than long, broadly rounded apex anterior in position. Antenna 9-segmented; club three segmented, equal to basal 6 segments combined; ventral surface of head surrounding antennae deeply concave, with deep hollows at bottom to hold antennae. Mentum concave medially; anterior margin slightly emarginate. Maxillary palpus 3-segmented; apical segment elongate-fusiform, with acute apex. Mandibles thin, bladelike. Eyes small, somewhat triangular in lateral view. Prosternum with median process strongly elevated anteriorly, apex slightly expanded. Mesosternum moderate in size, triangular, narrowed laterally. Metasternum with anterior process between mesocoxae narrow, bladelike; posterior to mesocoxae abruptly widened, flat, concave anterior margins and midline of posterior 2/3.; metacoxae contiguous. Abdomen with apical visible segment longer at center than other segments combined. Profemur flattened, widest basal 2/5, inner edge margined with deep groove;

meso- and meta-femora flattened, with inner edges shallowly margined. Protibia with two teeth on outer edge, one apical, one subapical; meso- and meta-tibiae somewhat flattened, width slightly less than 1/3 length; outer edge of each tibia with 3 (4 basal 1/3) irregular longitudinal rows of punctures, each puncture with minute yellow setae; each tibia with several minute apical spurs; small apical setae also present. Protarsus 5-segmented, with several long setae at ventral apex of each tarsomere, with claws normal. Meso- and meta-tarsi 4-segmented, basal segment minute; tarsal claws slightly reduced in thickness.

#### *Rhinocerotopsis nakasei* sp. nov.

*Etymology.* Dedicated to Mr. Yuta Nakase, collector of the holotype.

*Type material.* Holotype, sex not determined, "MALAYSIA: Selangor, Ulu Gombak (Univ. Malaya Field Studies Centre, 250 m alt.), 9 IX 2009, Nakase Y. (FIT)" Deposited in the Kyushu University Museum.



**Diagnosis.** This species is similar to *Stereomera pusilla* (Fig. 4) in the structure of the elytra, but is distinguished from it by the character states indicated in the genus diagnosis.

#### Description.

Body (Figs. 1-3) well convex. Length ca. 3.15 mm; greatest width 1.60 mm. Reddish brown. Pronotum with sulcus not reach lateral margin, slightly bifid near both ends; front projection about 2 time higher than behind one. Elytra with 1st (inner) costae parallel, with a row of punctures from basal 1/3 to apical 1/5, each with yellowish setae; 2nd costae parallel from base to middle, slightly curved inward behind middle; 3rd costae sinuate, curved inward, coming close to 2nd near apex; 4th (lateral) costae almost parallel with 3rd; 5th close to 4th.

#### Discussion

*Rhinocerotopsis* is closely related to *Stereomera* as they share the following character states: head with longitudinal grooves, pronotum with deep, transverse sulcus, elytra reticulated. Although the structure is somewhat different, deep, sinuate grooves of the inner margins of second costae, which are not observed in *Stereomera*, are also observed in *Danielssonina*. In the morphological phylogeny of Bordat and Howden (1995), *Stereomera* was assigned to the clade ((*Stereomera*, *Pseudostereomera*), *Danielssonina*, *Australoxenella*). Although its phylogenetic relationships within the clade are uncertain, *Rhinocerotopsis* may belong to this clade. However, even though the genera of the clade are closely allied, *Rhinocerotopsis* has some unique characteristics that suggest it should be regarded as a distinct genus, specifically, the large, trichome-bearing projections on the pronotum are not observed in the other genera of Stereomerini.

The holotype of *Rhinocerotopsis nakasei* was collected with FIT together with a specimen of *Stereomera pusilla*. Although almost no information is available on the biology of any Stereomerini species, they are thought

to be termitophilous because termitophily has been reported for some species of related tribes (Rhyparini and Termitoderini) (Howden & Storey, 1992). Although I have also visited Ulu Gombak (the type locality) many times and have set FITs for long periods, no specimen of Stereomerini has been collected. Mr. Nakase (collector of the holotype) set FITs higher above the forest floor (30–150 cm above ground), while I set them lower (5–30 cm above ground). Therefore, Stereomerini beetles may fly somewhat higher above the ground. Termite species are very abundant in Ulu Gombak. Nevertheless, termite guests are seldom investigated, although many entomologists visit this area. Field research focusing on termite guests should produce information on the biology of these enigmatic beetles, especially the host–termite relationships.

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