

(deeply incised dorsally in *satoi*); and *V. benzai* differs from *V. nipponica* Kinomura and Yamauchi, 1992, which is a workerless social parasitic species by having a low and small subpetiolar process and a dully angulate posterodorsal corner of the propodeum in female. It is also distinguished from the other Japanese congeners in workers by the following characteristics: 1) frons without large brown spot; 2) dorsum of promesonotum coarsely punctate, without unsculptured longitudinal band medially; 3) propodeal teeth absent; 4) subpetiolar process low, longer than high; 5) postpetiole highest at midlength in profile.

This species is polygenous, and nesting in the woodlands or woodland margins. Distribution is shown in Fig. 10. This species corresponds to *Vollenhovia* sp. 6 ("Tatenashi-umematsuari" in Japanese) in Terayama and Yamauchi (1992).

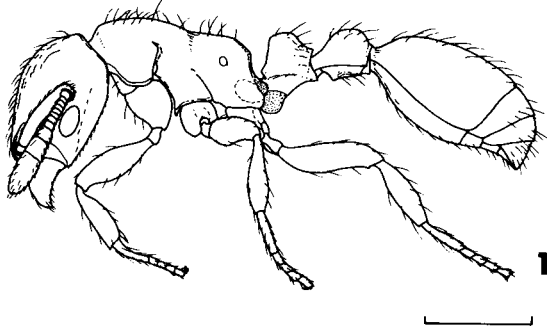


Fig. 1. *Vollenhovia amamiana* sp. nov., worker, profile. Scale bar = 0.5 mm.

Vollenhovia amamiana sp. nov.

(Figs. 1, 3, 7)

Holotype. Worker. HL 0.65 mm; HW 0.60 mm; SL 0.40 mm; CI 92; SI 67; WL 0.83 mm; PL 0.30 mm; PH 0.33 mm; DPW 0.18 mm; TL 2.7 mm.

Head slightly longer than wide, with subparallel sides and concave posterior margin in frontal view. Mandibles with 7 teeth, basalmost tooth distinct. Clypeal carinae diverging toward the anterior end. Antennae with 12 segments; scape 0.61 x head length. Eyes 0.14 mm in diameter.

Dorsal outline of promesonotum almost straight in profile; metanotal groove very weakly incised dorsally; dorsal outline of propodeum straight; posterodorsal corner of propodeum dully angulate, not forming distinct tooth.

Petiole higher than long, with flat dorsal outline in profile; anterodorsal and posterodorsal margins weakly angulate. Subpetiolar process developed, with relatively strongly convex ventral margin; its thin lamellar wall 0.08 mm in height. Postpetiole slightly longer than high, highest at midlength, with broadly

convex dorsal outline in profile; posterodorsal margin convex except the posterior collar.

Head and dorsum of alitrunk shagreened with large coarse punctures; punctures separated less than 0.5 x their own diameters; promesonotal dorsum without unsculptured longitudinal band medially; mesopleura and lateral surfaces of propodeum coarsely punctated. Petiole and postpetiole reticulate; sculpture of postpetiole weaker than that of petiole. Gaster smooth and subopaque except the anterior half of 1st tergite scattered with very small punctures.

Color: reddish brown; mandibles, antennae, and legs yellowish brown; frons with a large brown spot.

Paratype female. HL 0.68 mm; HW 0.65 mm; SL 0.43 mm; CI 96; SI 65; WL 1.08 mm; PL 0.30 mm; PH 0.35 mm; DPW 0.20 mm; TL 3.0 mm (one measured).

Head slightly longer than wide, with shallow concave posterior margin; eyes 0.15 mm in diameter; ocelli forming obtuse triangle.

Alitrunk 0.58 mm in maximum dorsal width; dorsum of pro- and mesonotum shagreened with coarse punctures; unsculptured longitudinal band absent on dorsum of mesonotum; posterodorsal corner of propodeum dully angulate, not forming distinct tooth in profile.

Petiole higher than long, with angulate anterodorsal and posterodorsal corners in profile. Subpetiolar process large and high, with relatively strongly convex ventral margin. Postpetiole highest at midlength, with convex dorsal outline in profile.

Color: reddish brown; ocellar triangular area blackish brown; frons with a large brown spot.

Variation. Five paratype workers with the following measurements and indices: HL 0.58-0.64 mm; HW 0.55-0.59 mm; SL 0.38-0.40 mm; CI 88-92; SI 68-71; WL 0.80-0.83 mm; PL 0.28-0.30 mm; PH 0.31-0.33; DPW 0.18-0.20 mm; TL 2.6-2.7 mm.

Eye diameter varies from 0.12 to 0.13 mm.

Holotype. Worker, Tatsuno-gou, Amami-oshima, Kagoshima Pref., 25.XI.1994, K. Yamauchi leg.

Paratypes. 1 female, 23 workers, same data as holotype; 1 female, 4 workers, Kinsakubara, Amami-oshima, Kagoshima Pref., 6.VIII.1984, M. Morisita leg.; 1 worker, Tokuno-shima, Kagoshima Pref., 6.VIII.1984, M. Terayama leg.

Type depository. The holotype and some paratypes are deposited in the Museum of Nature and Human Activities, Hyogo, and the other paratypes are in the National Institute of Agro-Environmental Sciences, Tsukuba, and National Science Museum, Tokyo.

Etymology. The specific epithet refers to the type locality.