

**A New Species of the Ant Genus *Pheidole* WESTWOOD from Japan
(Hymenoptera: Formicidae)**

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Abstract. A new myrmecine ant species, *Pheidole susanowo*, is described from Japan.

In Japan, the ant genus *Pheidole* WESTWOOD is represented by 8 species, 7 described and 1 nomenclaturally undetermined: *P. fervens* Fr. SMITH, *P. fervida* Fr. SMITH, *P. indica* MAYR, *P. megacephala* (FABRICIUS), *P. noda* Fr. SMITH, *P. pieli* SANTSCHI, *P. ryukyuensis* OGATA, and *P. sp. 8* (OGATA, 1981; OGATA, 1982; OGATA, 1991; OGATA & YAMANE, 1992; BOLTON, 1995). We describe the nomenclaturally undetermined species as new to science.

Measurements and indices

Head length (HL): maximum full-face view length from the anteriormost margin of clypeus to the posterior margin of occiput.

Head width (HW): maximum dorsal view distance across head excluding eyes.

Cephalic index (CI): $HW / HL \times 100$.

Head depth (HD): maximum depth of head in lateral view (vertical to longitudinal axis).

Scape length (SL): length of scape excluding radicle.

Scape index (SI): $SL / HW \times 100$.

Width of frontal lobes (FLW): maximum width between the right and left outermost margins of frontal lobes in dorsal view (only workers measured).

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Eye length (EL): maximum length of eye.

Pronotal width (PW): maximum width of pronotum in dorsal view.

WEBER's length of mesosoma (WL): maximum diagonal distance from the base of anterior slope of pronotum (namely excluding cervix) to the propodeal lobe (=metapleural lobe).

Propodeal spine length (PSL): maximum length from the base of propodeal spine to its apex viewed vertical to spine direction.

Petiole width (PtW): maximum width of petiole in dorsal view.

Postpetiole width (PpW): maximum width of postpetiole in dorsal view.

All measurements were carried out with a direct reading micrometer apparatus (Sokubi-keisoku-souchi made by Kogaku Co.; reading error: ± 0.005 mm) attached to a stereoscopic microscope under a magnification of $80\times$.

Pheidole susanowo sp. nov.

[Japanese name: Kuro-oozu-ari]

(Figs. 1-5)

Pheidole sp. D: ONOYAMA, 1976: 125, 129.

Pheidole sp. 8: OGATA & YAMANE, 1992: 25.

Soldier (Figs. 1-3). HL 1.15, 1.14 mm; HW 1.06, 1.07 mm; CI 92, 94; HD 0.73, 0.70 mm; SL 0.52, 0.48 mm; SI 49, 45; EL 0.15, 0.14 mm; PW 0.56, 0.55 mm; WL 0.88, 0.86 mm; PSL 0.08, 0.06 mm; PtW 0.17, 0.16 mm; PpW 0.29, 0.27 mm. (2 measured, the former figures for holotype and the latter for a paratype.)

Head longer than wide with convex sides, posterior margin concave in the middle; median sulcus distinct, anteriorly reaching beyond the midlength of head in full-face view, but not reaching to frontal triangle. Eyes oval and small, with about 30 facets. Clypeus with a median carina; anterior margin with a distinct median notch. Mandibles each practically with 4 teeth, apical and subapical acute and large, basal and offset basal low. Scapes short, reaching the midlength of head; segment II as long as segments III to VI together, segments III and VI as long as wide, IV and V wider than long, VI as long as wide, VII to XI longer than wide, apical segment as long as segments X and XI together. Frontal carinae diverging posteriorly, reaching the midlength of head. Gular dentition (the arrangement of gular teeth in the soldier (KEMPF, 1964: 50)) developed as in Fig. 3, paired mesial teeth a little closer to midgular tubercle than to lateral teeth.

Pronotum prominently raised in profile; humeri rounded and much

protruding laterally in dorsal view, each forming a tubercle. Mesonotum a little convex in profile. Metanotal groove shallowly incised dorsally. Propodeal dorsum concave in the middle, but in profile nearly straight. Propodeal spines acute, directing upwards and slightly backwards and outwards. Petiole with concave anterior slope and convex ventral margin in profile and with a very shallowly concave crest and parallel sides in posterior view. Petiole about 1.7 times as long as postpetiole. Postpetiole higher than long, and lower than petiole in profile; hexagonal in dorsal view, a little more than twice as wide as long, sides much protruding laterally.

Mandibles smooth and shining. Head dorsum, mesosoma, petiole and postpetiole reticulate-punctate and opaque except for the clypeus and the area between frontal carinae, and the propodeal declivity. Basal 1/3 of gastral tergite I somewhat weakly reticulate-punctate and opaque, the remainder of gaster smooth and shining.

Body abundantly covered with long, erect or suberect, pale yellow hairs. Appendages with shorter, mostly suberect to decumbent hairs.

Mandibles dark brown. Head to postpetiole blackish brown. Basal 1/3 of gastral tergite I medium brown, the remainder of gaster dark brown. Antennae and legs slightly light brown.

Worker (Figs. 4-5). HL 0.49-0.57 mm; HW 0.43-0.52 mm; CI 88-91; HD 0.33-0.39 mm; SL 0.42-0.49 mm; SI 91-100; FLW 0.19-0.21 mm; EL 0.10-0.11 mm; PW 0.29-0.36 mm; WL 0.56-0.67 mm; PSL 0.04-0.05 mm; PtW 0.08-0.12 mm; PpW 0.12-0.15 mm. (5 measured.)

Posterior margin of head a little concave in the middle. Anterior clypeal margin straight in the middle. Occipital border concave in the middle (no sulcus). Scapes, when laid back, extending about their thickness beyond the head. Antennal segment II twice as long as wide, III as long as wide, IV to VIII each wider than long, IX as long as wide, X twice as long as wide, XI 1.5 times as long as wide, apical 2.5 times as long as wide. Eyes of medium size, with about 30 facets. Pronotum and mesonotum nearly forming a convexity. Propodeal dorsum nearly flat. Postpetiole hexagonal in dorsal view, about twice as wide as long, sides protruding laterally. Gastral tergite I smooth and shining. Other morphology, sculpturation, and coloration are as in the soldier.

Holotype. Soldier, northwest of Arakawa, Ishigaki I., Okinawa Pref., 10 m above sea level, 1.VII.1974, K. ONOYAMA leg.

Paratypes. 1 worker, Chichi-jima I., Ogasawara Is., Tokyo Pref., 30.VII.1972, M. TANAKA leg.; 2 workers, Uebaru, Naha City, Okinawa Pref., 21.VIII.1996, H. TAKAMINE leg.; 2 soldiers, 7 workers, same data as in holotype; 1 soldier and 5 workers, northwest of Arakawa (near the type locality), Ishigaki I., Okinawa Pref., 1.VII.1974, K. ONOYAMA leg. 2 soldiers, 3 workers, the experimental field of the Tropical

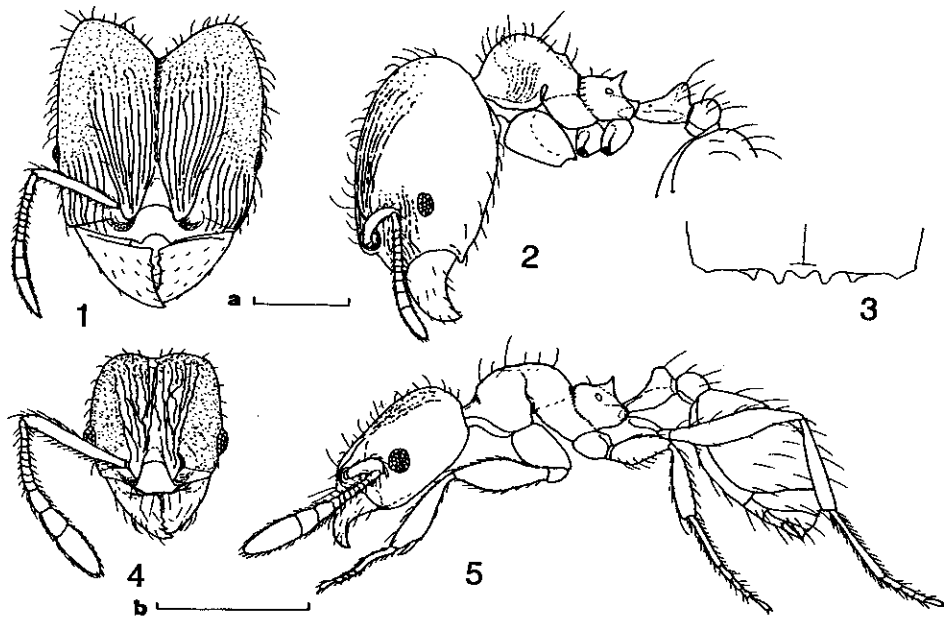
Agriculture Research Center, Maesato, Ishigaki I., Okinawa Pref., 24.VII.1992, K.YASUDA leg.

Type depository. The holotype and paratypes will be deposited in the Museum of Nature and Human Activities, Sanda, Hyogo Prefecture.

Distribution. Ogasawara Is., Nansei Is. (Tokara Is. (YAMANE et al., 1994), Okinawa I., Ishigaki I.).

Remarks. *Pheidole susanowo* resembles *P. fervens* and *P. oceanica*, but is distinguished by the much smaller size and relatively shorter scape in the soldier and worker, or by the more angulate corner of head in the soldier, or the reticulate-punctate pronotal sides in the worker. This species is distinguished from other Japanese *Pheidole* species by the sculpturation on the whole of mesosoma, especially by the wholly reticulate-punctate pronotal sides, and dark coloration of body.

The holotype colony was found in the soil of a sugarcane field. Another colony was collected at a wood margin near a sugarcane field.



Figs. 1-5, *Pheidole susanowo* sp. nov., soldier (Figs. 1-3) and worker (Figs. 4-5) — 1, 4: head in full-face view; 2, 5: body in profile; 3: gular dentition (anterior part of head in ventral view). Scale bars indicate 0.5 mm: **a** is for figs. 1 and 2, **b** for figs. 4 and 5.

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