

**A New Species of the Genus *Pristomyrmex* MAYR from Japan,
and a Proposal of a New Synonym of Species in the Genus
Camponotus MAYR (Hymenoptera; Formicidae)**

Seiki YAMANE

Department of Earth & Environmental Sciences, Faculty of Science,
Kagoshima University, Korimoto, Kagoshima, 890-0065 Japan

and

Mamoru TERAYAMA

Laboratory of Applied Entomology, Faculty of Agriculture, The University of
Tokyo, Yayoi, Bunkyo-ku, Tokyo, 113-0032 Japan

Abstract. A new species of the genus *Pristomyrmex*, *P. yaeyamensis*, is described from Iriomote-jima, the Ryukyus, Japan. *Camponotus* (*Myrmamblys*) *tokioensis* ITO, 1912, is synonymized with *C. (M.) vitiosus* Fr. SMITH, 1874, stat. rev. from Japan.

In this paper we will describe a new species of the genus *Pristomyrmex* MAYR from the Ryukyus, Japan, and will also propose a new synonym in the subgenus *Myrmamblys* of the genus *Camponotus* from Japan.

Measurements and indices used in the paper follow those in TERAYAMA & HASHIMOTO (1996).

Genus *Pristomyrmex* MAYR

[Japanese name: Amime-ari-zoku]

Pristomyrmex MAYR, 1866, *Verh. Zool.-Bot. Ges. Wien*, **16**: 903.

Type species: *Pristomyrmex pungens* MAYR, 1866.

Odontomyrmex ANDRE, 1905, *Rev. Ent.*, **24**: 207. [As subgenus of *Pristomyrmex*.]

Type species: *Pristomyrmex* (*Odontomyrmex*) *quadridentata* ANDRÉ, 1905.

Hylidris WEBER, 1941, *Ann. Ent. Soc. Amer.*, **34**: 190.

Type species: *Hylidris myersi* WEBER, 1941.

*Correspondence: M. TERAYAMA, c/o MATSUMOTO's Laboratory, Department of Biology, The University of Tokyo, Komaba, Meguro-ku, Tokyo, 153-8902 Japan

Dodous DONISTHORPE, 1946, *Proc. R. Ent. Soc. Lond., Ser. B*, 15: 145.

Type species: *Dodous trispinosus* DONISTHORPE, 1946.

Diagnosis. Medium-sized ants: total length of workers around 2-4 mm. Head in full face view round, almost as long as wide. Antenna 11-segmented; the apical 3 segments forming a club. Masticatory margin of mandible with 2 well-developed apical teeth and several subsequent smaller teeth. Frontal lobe weakly developed; antennal insertion exposed. Eye relatively small to medium in size. Clypeus usually with a median longitudinal carina; anterior margin with several denticles. Maxillary palpi 1- to 5-segmented, labial palpi 3-segmented. Mesosoma compact. Pronotum with anterior border margined, sometimes with small dorsolateral teeth. Propodeal spines present. Ventral portion of metapleural glands concave, following the outline of the hind coxa. Gastral hairs absent or sparse.

Remarks. *Pristomyrmex* comprises 38 described species (BOLTON, 1981, 1995): 5 Afrotropical (BOLTON, 1981), 2 Madagascan (BOLTON, 1981), 6 Australian (TAYLOR, 1965, 1968), and 25 in the Oriental Region and Melanesia. Two species, *P. pungens* MAYR and *P. brevispinosus sulcatus* EMERY (sensu OGATA, 1991) which will be described as a new species in this paper, have been recorded from Japan.

Japanese species. *P. pungens* MAYR, *P. yaeyamensis* sp. nov.

Pristomyrmex yaeyamensis sp. nov.

[Japanese name: Togemune-Amime-ari]

(Figs. 1-3)

Pristomyrmex sp.: ONOYAMA, 1976, In IKEHARA (ed.), *Ecological Studies of Nature Conservation of the Ryukyu Islands - (II)*: 125.

Pristomyrmex brevispinosus sulcatus var. *formosae* FOREL: In MYRMECOL. SOC. JAPAN (ed.), 1988, *A List of the Ants of Japan with Common Japanese Names*: 16.

Pristomyrmex brevispinosus sulcatus EMERY: OGATA, 1991, *Bull. Inst. Trop. Agr. Kyushu Univ.*, 14: 124.

Pristomyrmex brevispinosus sulcatus EMERY: TERAYAMA, et al., 1992, In MYRMECOL. SOC. JAPAN (ed.), *A Guide for the Identification of Japanese ants (III)*: 58.

Diagnosis. Total body length of workers around 2.5-3 mm. Body yellowish brown to reddish brown. Clypeus with 3 teeth on its anterior margin. Antennal scape slightly exceeding posterior margin of head. Dorsolateral corner of pronotum with a short spine. Propodeal spine short, with the tip turned upward; seen from the side the spine not

reaching the level of the posterior end of propodeum. Head and dorsum of mesosoma with moderately large punctures; lateral surfaces of mesonotum and propodeum, petiolar peduncle, postpetiole and gaster smooth and shining.

Queens known from ergatoid only.

Description of holotype. Worker. HL 0.79 mm; HW 0.78 mm; SL 0.68 mm; CI 101; SI 87; WL 0.95 mm; PW 0.48 mm; PL 0.34 mm; PH 0.23 mm; DPW 0.15 mm; TL 2.6 mm.

Head laterally rounded, as long as wide, with a relatively straight posterior margin in frontal view; posterolateral corner rounded, not angulate. Clypeus with a median carina; its anterior margin with 3 teeth. Mandible smooth, with 5 teeth; apical 3 larger than the others. Antennal scape relatively short, slightly exceeding posterior margin of head; 2nd segment slightly longer than wide; 3rd to 8th segments each wider than long; 9th segment 1.3 times as long as wide; 10th segment 1.2 times as long as wide; apical segment 1.8 times as long as wide. Eye 0.10 mm long.

Dorsal margin of pronotum almost straight in profile; its dorsolateral corner with a short spine; anterior margin of dorsal disc carinate. Propodeal spine short, with its tip turned upward; seen from the side the spine not reaching the level of the posterior end of the propodeum.

Petiole longer than high, peduncle moderately long; anterior margin of node weakly convex; dorsal outline very weakly convex, sloping posteriorly; in profile anterodorsal border forming a blunt angle; posterodorsal border not forming angle. Postpetiole without anterodorsal angle in profile; its dorsal width 1.3 times dorsal petiole width.

Gaster oval, 0.67 mm in maximum width in dorsal view.

Head and dorsum of mesosoma with moderately large punctures; the punctures ca. 0.05 mm in diameter; interspaces smooth. Lateral surfaces of mesonotum and propodeum, petiolar peduncle, postpetiole and gaster smooth and shining.

Body yellowish brown to reddish brown.

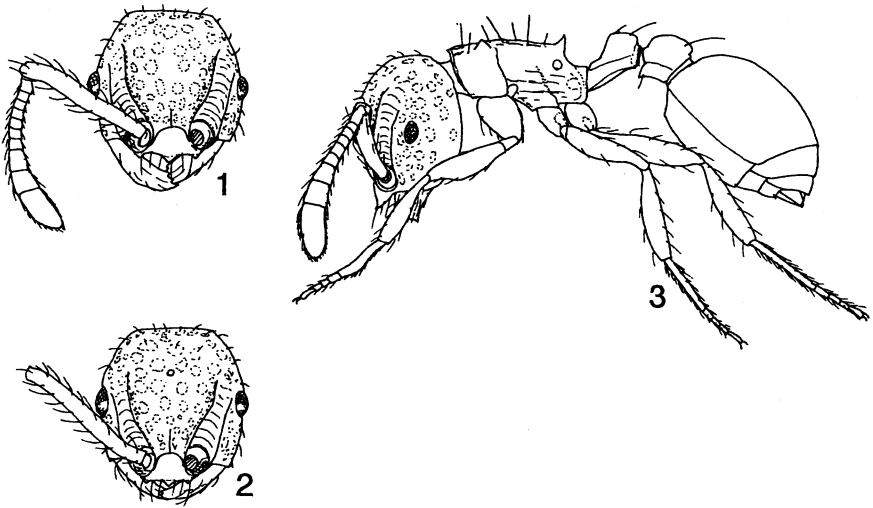
Ergatoid queen. HL 0.83 mm; HW 0.83 mm; SL 0.65 mm; CI 100; SI 130; WL 0.80 mm; PW 0.53 mm; PL 0.35 mm; PH 0.25 mm; DPW 0.20 mm; TL 3.1 mm.

General shape of body as in workers, excepting the presence of median ocelli and larger body size.

Holotype. Worker, Iriomote-jima, Yaeyama Is., Okinawa Pref., 7. VIII. 1985, K. KINOMURA leg.

Paratypes. 3 workers, 1 ergatoid queen, same data as holotype.

Type depository. The Museum of Nature and Human Activities,



Figs. 1-3. *Pristomyrmex yaeyamensis* sp. nov. — 1, Head in full face view, worker; 2, ditto, ergatoid queen; 3, body in profile, worker.

Sanda, Hyogo, Japan.

Distribution. The Ryukyus (Iriomote-jima), Japan.

Remarks. This species was listed as *Pristomyrmex brevispinosus sulcatus* var. *formosae* FOREL (nomenclaturally invalid name) in MYRMECOLOGICAL SOCIETY of JAPAN (1988), while OGATA (1991) applied the name *P. brevispinosus sulcatus*, and TERAYAMA et al. (1992) also tentatively used this name to the Japanese population. In fact, the present species resembles *P. brevispinosus*, or its subspecies *sulcatus* from Myanmar. Direct comparisons of Southeast Asian specimens including types of *brevispinosus* and its subspecies with the Japanese specimens have suggested that the Japanese population is significantly different from other populations. Furthermore, *P. brevispinosus* produces usual winged queens, whereas the Japanese population produces ergatoid queens only (TERAYAMA et al., 1992). Thus, we have concluded that the population represents a good species.

Colony size of *yaeyamensis* sp. nov. is small, with less than 20 workers per nest. Two or three ergatoid females are present per nest (ONOYAMA, 1976; KINOMURA, pers. com.). The nests are found in decaying wood or under stones in forested habitats. TERAYAMA et al. (1992) mentioned that this species had been known from Iriomote-jima and Taiwan. However, recent ecological information suggests that the Iriomote and Taiwanese populations are different species each other, since the former produces ergatoid queens only as a reproductive female caste and is polygynous, but the latter produces normal queens only and is monogynous (TERAYAMA, in prep.).

***Camponotus (Myrmamblys) vitiosus* Fr. SMITH, stat. rev.**

[Japanese name: Umematsu-oo-ari]

- Camponotus vitiosus* Fr. SMITH, 1874, *Trans. Ent. Soc. Lond.*, (1874): 403.
- Camponotus vitiosus*: MAYR, 1879 (in synonymy), *Verh. Zool.-Bot. Ges. Wien*, 27: 645. [Synonymized with *C. marginatus*.]
- Camponotus marginatus vitiosus*: EMERY, 1893, *Zool. Jahrb. Abt. Syst. Geogr. Biol. Thiere*, 7: 675. [Revived from synonymy as subspecies of *marginatus*.]
- Camponotus fallax vitiosus*: FOREL, 1907, *Mitt. Naturhist. Mus. Hamb.*, 24: 19.
- Camponotus (Myrmentoma) caryae vitiosus*: WHEELER, 1917, *Psyche*, 24: 29.
- Camponotus (Tanaemyrmex) aethiops vitiosus*: BOLTON, 1995, *A new General Catalogue of the Ants of the World*: 129.
- Camponotus Itoi tokioensis* ITO, 1912, *Annl. Soc. Ent. Belg.*, 56: 341. Syn. nov.
- Camponotus (Myrmentoma) itoi tokioensis*: EMERY, 1925, In WYTSMAN (ed.), *Genera Insectum*, fasc. 183, : 138.
- Camponotus (Myrmamblys) itoi tokioensis*: WHEELER, 1928, *Boll. Lab. Zool. Gen. Agrar. Portici.*, 21: 118.
- Camponotus (Myrmamblys) tokioensis*: SANTSCHI, 1937, *Bull. Soc. Ent. Belg.*, 77: 384.
- Camponotus (Myrmentoma) tokyoensis* [sic.]: MENOZZI, 1940, *Mushi, Fukuoka*, 13: 11.
- Camponotus (Myrmamblys) tokioensis*: ONOYAMA, 1980, *Kontyû, Tokyo*, 48: 201.
- Camponotus (Myrmamblys) tokioensis* v. *atrigenatus* SANTSCHI, 1937, *Bull. Ann. Soc. Ent. Belg.*, 77: 384. [Junior synonym of *C. tokioensis* ITO by TERAYAMA & SATOH, 1990.]
- Camponotus (Myrmamblys) tokioensis* v. *inconstans* SANTSCHI, 1937, *Bull. Ann. Soc. Ent. Belg.*, 77: 385. [Junior synonym of *C. tokioensis* ITO by TERAYAMA & SATOH, 1990.]

Type examined. Major worker, Hiogo (Hyogo), [BMNH]

Remarks. One syntype specimen was examined. The specimen belongs to the subgenus *Myrmamblys* in having the short antennal scapes which are shorter than the head width, the unincised anterior clypeal margin, and the short erect or suberect hairs on clypeus and mandibles. Although *vitiosus* has been dealt with a subspecies of *C. caryae* or *C. aethiops*, *caryae* belongs to the subgenus *Myrmentoma* and *aethiops* to *Tanaemyrmex*. We treat here *vitiosus* as a good species and move it to

the subgenus *Myrmamblys*. Dorsal outline of propodeum with a preapical depression in profile and wide and reversed U-shaped petiolar node of the type of *vitiosus* suggest that *vitiosus* is conspecific with *C. tokioensis*, the latter should be a junior synonym.

Distribution. Japan, Korea, China.

Acknowledgments

We would like to thank Mr. B. BOLTON (BMNH) and Dr. M. BRANCUCCI (Naturhistorisches Museum, Basel) for lending us the type material, and to Messrs. K. KINOMURA (Gifu-shi) and C.-C. LIN (National Taiwan Univ.) for offering valuable material.

References

- ANDRÉ, E., 1905. Description d'un genre nouveau et de deux espèces nouvelles de fourmis d'Australie. *Rev. Ent.*, **24**: 205-208.
- BOLTON, B., 1981. A revision of six minor genera of Myrmicinae in the Ethiopian zoogeographical region. *Bull. Br. Mus. Nat. Hist. (Ent.)*, **43**: 245-307.
- BOLTON, B., 1995. A taxonomic and zoogeographical census of the extant ant taxa (Hymenoptera: Formicidae). *Jour. Nat. Hist.*, **29**: 1037-1056.
- BOLTON, B., 1995. *A New General Catalogue of the Ants of the World*, 504 pp. Harvard University Press, Cambridge, Mass.
- DONISTHORPE, 1946. A new genus and species of Formicidae (Hym.) from Mauritius. *Proc. R. Ent. Soc. Lond., Ser. B* **15**: 145-147.
- EMERY, C., 1893. Beiträge zur Kenntniss der nordamerikanischen Ameisenfauna. *Zool. Jahr. Abt. Syst. Geogr. Biol. Thier*, **7**: 633-682. (Indirectly cited.)
- EMERY, C., 1925. Hymenoptera, Formicidae, Formicinae. In WYTSMAN, M. P. (ed.), *Genera Insectorum*, fasc. **183**: 1-302. La Haye.
- FOREL, A., 1907. Formiciden aus dem Naturhistorischen Museum in Hamburg. II. Teil. Neueingänge seit 1900. *Mitt. Naturhist. Mus. Hamb.*, **24**: 1-20.
- FOREL, A., 1912. Quelques fourmis de Tokio. *Annls. Soc. Ent. Belg.*, **56**: 339-342.
- ITO, T., 1912. *Camponotus Itoi* (*Myrmamblys*) FOREL strips *tokioensis* ITO nov. st. In FOREL, A., Quelques fourmis de Tokio. *Annls. Soc. Ent. Belg.*, **56**: 341-342.
- MAYR, G., 1866. Diagnosen neuer und wenig gekannter Formiciden. *Verh. Zool.-Bot. Ges. Wien*, **16**: 885-908. (Indirectly cited.)
- MAYR, G., 1879. Beiträge zur Ameisen-Fauna Asiens. *Verh. Zool.-Bot. Ges. Wien*, **27**: 867-878.

- MENOZZI, C., 1940. Contribution la faune myrmécologique du Japon. *Mushi, Fukuoka*, 13: 11-12.
- MYRMECOLOGICAL SOCIETY OF JAPAN, 1988. *A List of the Ants of Japan with Common Japanese Names*, 50 pp. (In Japanese.)
- OGATA, K., 1991. A generic synopsis of the poneroid complex of the family Formicidae in Japan (Hymenoptera). Part II. Subfamily Myrmicinae. *Bull. Inst. Trop. Agr., Kyushu Univ.*, 14: 61-149.
- ONOYAMA, K., 1976. A preliminary study on the ant fauna of Okinawaken, with taxonomic notes (Japan; Hymenoptera: Formicidae). In IKEHARA, S. (ed.), *Ecological Studies of Nature Conservation of the Ryukyu Islands - (II)*, pp. 121-141. University of Ryukyus, Naha.
- ONOYAMA, K., 1980. An introduction to the ant fauna of Japan, with a check list (Hymenoptera, Formicidae). *Kontyû, Tokyo*, 48: 193-212.
- SANTSCHI, T., 1937. Fourmis du Japon et de Formose. *Bull. Ann. Soc. Ent. Belg.*, 77: 361-388.
- SMITH, Fr., 1874. Descriptions of new species of Tenthredinidae, Ichneumonidae, Chrysididae, Formicidae, &c. of Japan. *Trans. Ent. Soc. Lond.*, (1874): 373-409.
- TAYLOR, R. W., 1965. The Australian ants of the genus *Pristomyrmex*, with a case of apparent character displacement. *Psyche*, 72: 35-54.
- TAYLOR, R. W., 1968. A supplement to the revision of Australian *Pristomyrmex* species. *J. Aust. Ent. Soc.*, 7: 63-66.
- TERAYAMA, M. & Y. HASHIMOTO, 1996. Taxonomic studies of the Japanese Formicidae, Part 1. Introduction to this series and descriptions of four new species of the genera *Hypoponera*, *Formica* and *Acropyga*. *Nature and Human Activities*, 1: 1-8.
- TERAYAMA, M., M. MORISITA & K. ONOYAMA, 1991. Genus *Camponotus*. In MYRMECOLOGICAL SOCIETY OF JAPAN (ed.), *A Guide for the Identification of Japanese Ants (II). Dolichoderinae and Formicinae (Hymenoptera: Formicidae)*, pp. 37-44. The Myrmecological Society of Japan, Tokyo (In Japanese.)
- TERAYAMA, M., K. ONOYAMA, & M. KUBOTA, 1992. Genus *Pristomyrmex*. In MYRMECOLOGICAL SOCIETY OF JAPAN (ed.), *A Guide for the Identification of Japanese Ants (III), Myrmicinae and supplement to Leptanillinae (Hymenoptera: Formicidae)*, pp. 57-58. The Myrmecological Society of Japan, Tokyo. (In Japanese.)
- TERAYAMA, M. & T. SATOH, 1990. A new species of the genus *Camponotus* from Japan, with notes on two known forms of the subgenus *Myrmamblys* (Hymenoptera, Formicidae). *Jpn. J. Ent.*, 58: 405-414.
- WEBER, N. A., 1941. Four new genera of Ethiopian and Neotropical Formicidae. *Ann. Ent. Soc. Amer.*, 34: 183-194.
- WHEELER, W. M., 1917. The North American ants described by Asa

FITCH. *Psyche*, **24**: 26-29.

WHEELER, W. M., 1928. Ants collected by Professor F. SILVESTRI in Japan and Korea. *Boll. Lab. Zool. Gen. Agrar. Portic.*, **21**: 96-125.