

Description of *Meranoplus birmanus* sp.nov. from Myanmar, and the first record of *M. bicolor* from Laos (Hymenoptera: Formicidae)

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SCHÖDL, S. 1999. Description of *Meranoplus birmanus* sp.nov. from Myanmar, and the first record of *M. bicolor* from Laos (Hymenoptera: Formicidae). *Entomol. Probl.* 30(2): 61-65. - *Meranoplus birmanus* sp.nov. from Myanmar is described and compared with the similar *M. bicolor* (GUÉRIN-MÉNEVILLE). Diagnostic characters are pointed out and figured. The new species is keyed. *Meranoplus bicolor* is recorded from Laos for the first time.

Key words: Insecta, Hymenoptera, Formicidae, Myrmicinae, *Meranoplus*, Oriental Region, Myanmar, new species, first record.

Introduction

The genus *Meranoplus* was recently revised in the Oriental zoogeographical region (SCHÖDL 1998). When the paper was already in print a new species very closely related to *M. bicolor* showed up. The ants were handed to me together with several specimens of *M. bicolor* presumably belonging to the same species by H. Schillhammer, who had sampled them during a survey carried out in Myanmar. The new species is the fifteenth of the genus now known from the Oriental Region.

Measurements and indices

Measurements (in millimetres) and indices follow BOLTON (1981) and SCHÖDL (1998). Three further indices, PTL (petiolar length), PTH (petiolar height) and PTI (petiolar index) are introduced.

- TL - Total length. Length of out-stretched individual from mandibular apex to apex of gaster
- HL - Head length. Length of head measured from mid-point of occipital margin to mid-point of anterior clypeal margin
- HW - Width of head behind the eyes, measured in full face view
- CI - Cephalic Index: $HW \times 100 / HL$
- SL - Scape length. Length of antennal scape, excluding the basal condylar bulb
- SI - Scape Index: $SL \times 100 / HW$
- PML - Length of promesonotal shield, measured from anterior mid-point of pronotum behind collar to mid-point of hind margin of mesonotum above propodeum (translucent lamella included)

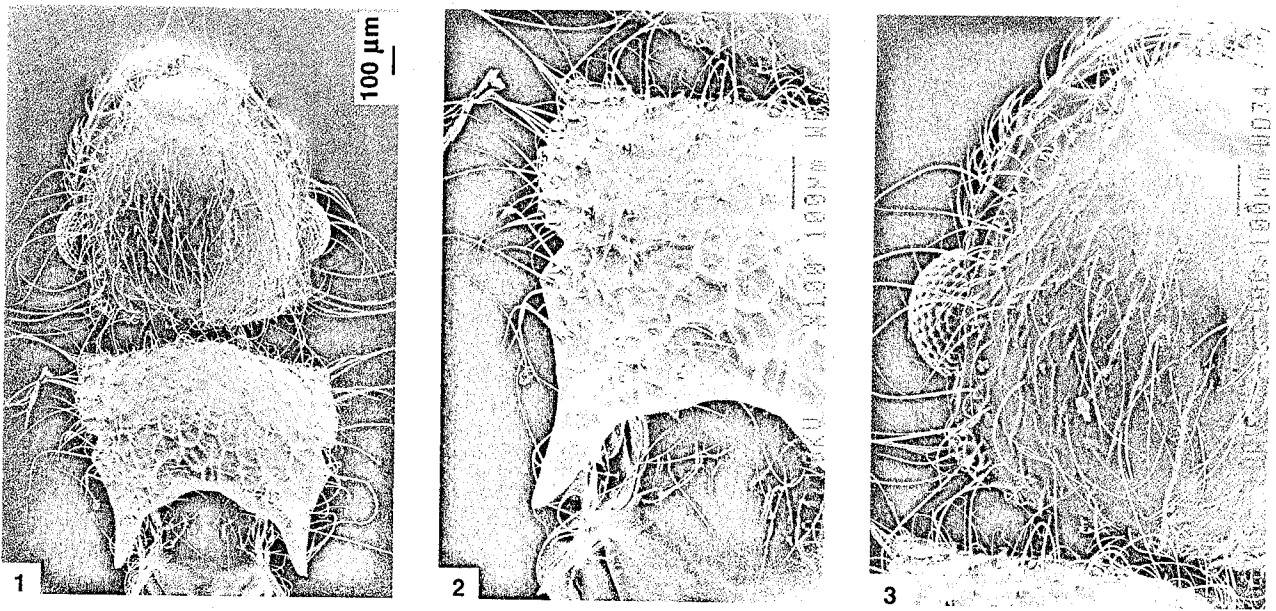
- PW - Pronotal width, measured behind base of antero-lateral pronotal projections (angles) in dorsal view
- PMI - $PW \times 100 / PML$
- PTL - Petiolar length, measured in lateral view
- PTH - Petiolar height, measured in lateral view
- PTI - $PTL \times 100 / PTW$
- AL - Length of alitrunk, measured in lateral view from pronotal tooth to posterior base of metapleural lobe

Abbreviations and Acknowledgements

The material used for the current study is deposited in the following institutions. Abbreviations follow ARNETT, SAMUELSON & NISHIDA (1993):

- BMNH - The Natural History Museum, London, U.K. [= British Museum of Natural History] (B. Bolton)
- MCZC - Museum of Comparative Zoology, Cambridge, U.S.A. (S. Cover, M.S. Kelley)
- MHNG - Muséum d'Histoire naturelle, Geneva, Switzerland (B. Merz)
- NHMB - Naturhistorisches Museum, Basle, Switzerland (M. Brancucci)
- NHMW - Naturhistorisches Museum Wien, Vienna, Austria
- USNM - Smithsonian Institution, Washington, U.S.A. (T.R. Schultz)

I thank B. Merz for sending the types of *Meranoplus bicolor* v. *lucidus* for reexamination. I am indebted to B. Bolton (BMNH) and H. Zettel (NHMW) for their valuable comments on the manuscript. Ján Kodada (Bratislava) prepared the SEM-photographs.



Figs 1 - 3: Dorsal view showing structure of head and promesonotal shield of *Meranoplus birmanus* sp.nov. workers: 1) head and pro-mesonotal shield; 2) promesonotal shield; 3) head.

Meranoplus birmanus sp.nov. can be inserted into the key to the Oriental species (SCHÖDL 1998, couplet 8) as follows:

- 7 Promesonotum with only one pair of posteriorly directed mesonotal spines, without additional postero-lateral and/or posterior paramedian mesonotal projections. (Figs 7, 8; SCHÖDL 1998: Figs 6, 7a, b) 8
- Promesonotum of different shape, always with additional postero-lateral and/or posterior paramedian mesonotal projections 9
- 8 Small species (HL 0.65 - 0.80). Promesonotal shield with a pair of posteriad directed shorter, blunt or acute projections in the posterior mesonotal corners (SCHÖDL 1998: Figs 7a, b). Dorsal surfaces and appendages without extremely long hairs (SCHÖDL 1998: Figs 21a, b). India, Nepal, Bhutan (SCHÖDL 1998: fig. 31) *rothneyi*
- Larger species (HL 0.79 - 0.96). Promesonotal shield with a single pair of posteriorly directed longer spines in the posterior mesonotal corners (Figs 7, 8; SCHÖDL 1998: fig. 6). Dorsal surfaces and appendages with long hairs (Figs 9, 10; SCHÖDL 1998: fig. 20) 8a
- 8a Dorsal surfaces of head and promesonotal shield rugose to rugulose-reticulate (Figs 4 - 6); petiole in lateral view ± an equilateral triangle (PTI 93 - 100) (Fig. 10; SCHÖDL 1998: fig. 20). Oriental (SCHÖDL 1998: fig. 30) *bicolor*
- Dorsal surfaces of head and promesonotal shield shiny, with rugae and costulae (Figs 1 - 3);

petiole in lateral view distinctly narrower (PTI 73 - 84) (Fig. 9). Burma (Fig. 11) *birmanus*

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Taxonomy

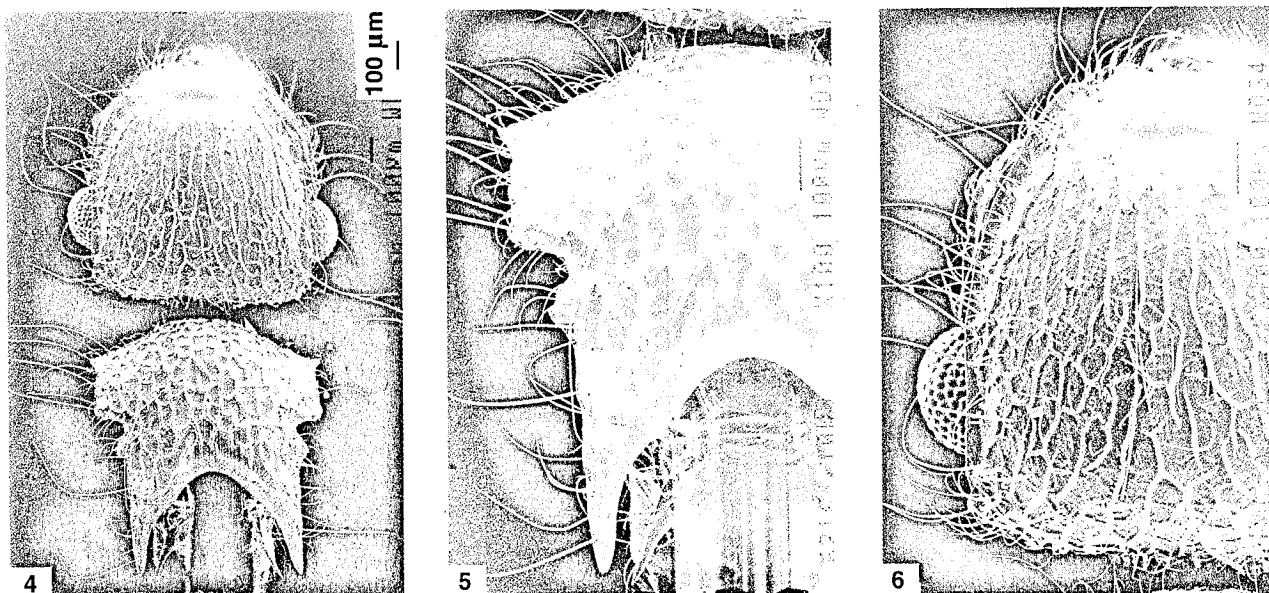
Meranoplus birmanus sp.nov.

(Figs 1 - 3, 7, 9, 11)

Type locality: Surrounding of San Myaung Camp (12°32'05.6"N 95°38'53.7"E); ca. 200 m a.s.l.; degraded secondary *Dipterocarpus tuberculatus* forest with sandy soil and only occasional leaf litter; Chatthin Wildlife Sanctuary, Kanbalu Township, Sagaing Division, Myanmar.

Type material: **Holotype worker**, "MYANMAR: Sagaing Division Chatthin Wildlife Sanctuary 23°32'05"N 95°38'53"E ca. 200m 5.-17.10.1998 leg. Schillhammer (2)" (NHMW); **paratypes:** 27 workers with identical label data will be deposited in NHMW, BMNH, NHMB, MCZC, MHNG, USNM.

Description: Holotype worker: TL: 4.2, HL: 0.95, HW: 0.9, CI: 0.71, SL: 0.71, SI: 79, PML: 0.73, PW: 0.93, PMI: 127, AL: 1.0, PTL: 0.35, PTH: 0.44, PTI: 80. Paratype workers: TL: 4.14 ± 0.17 (3.8 - 4.4), HL: 0.94 ± 0.029 (0.88 - 0.96), HW: 0.88 ± 0.023 (0.84 - 0.90), CI: 94 ± 1 (91 - 95), SL: 0.71 ± 0.019 (0.68 - 0.73), SI: 80 ± 1 (78 - 82), PML: 0.72 ± 0.027 (0.69 - 0.78), PW: 0.93 ± 0.031 (0.88 - 0.98), PMI: 130 ± 3.17 (126 - 134), AL: 0.99 ± 0.008 (0.98 - 1.00), PTL: 0.35 ± 0.024 (0.31 - 0.39), PTH: 0.45 ± 0.023 (0.41 - 0.48), PTI: 77 ± 4 (73 - 84) (12 measured).



Figs 4 - 6: Dorsal view showing structure of head and promesonotal shield of *Meranoplus bicolor* workers: 4) head and pro-mesonotal shield; 5) promesonotal shield; 6) head.

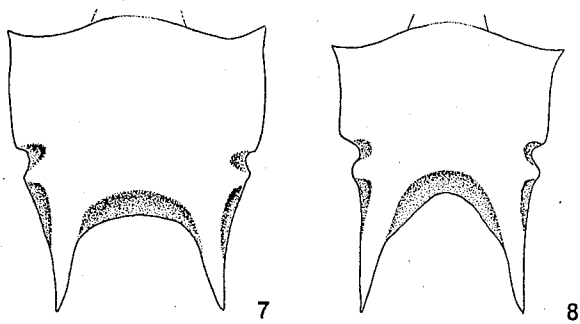
Mandibles striate, armed with four teeth. Mid-portion of clypeus rugose, particularly lateral sides; anterior clypeal margin concave, lateral corners produced into stout to acute angles. Frontal triangle apparent as a curved shiny furrow between posterior clypeal margin and anterior frontal margin. Head above the antennal scrobes posteriorly parallel-sided, lateral margins slightly indented above level of the eyes; from about middle evenly but distinctly arcuately narrowed towards clypeus; anterior lateral margins somewhat lamellate and translucent. Ventral part of head (below the antennal scrobes) of similar shape, slightly broader than dorsal part of head, thus feebly protruding in dorsal view. Antennal scrobes shiny and glabrous throughout, posteriorly with few transverse rugae above eyes. Genae costate to rugose, with occasional cross-meshes. Compound eyes situated distinctly behind middle of lateral sides of head. Maximum diameter of eye 0.21 - 0.25, with 12-13 ommatidia in the longest row.

Promesonotum wider than long. Lateral margins of the promesonotal shield overhanging sides of alitrunk; propodeum distinctly overhung by lamellate hind margin of mesonotum. Anterior corners of pronotum rectangular, produced into acute teeth; lateral margins of pronotum sinuate, narrowed posteriorly and distinctly indented at about level of (invisible) promesonotal suture, the constriction surrounded by a translucent, lamellate area. Lateral mesonotal margins evenly narrowed and produced into stout posteriorly directed

projections; anteriorly the mesonotal margins lamellate; posterior mesonotal margin with a broad translucent lamella between lateral projections. Declivity of propodeum anteriorly with few longitudinal rugae, basally with a very indistinct shagreen; lateral propodeal spines thin and acuminate, situated at about middle of propodeal length. The suture between dorsal alitrunk and propodeum distinctly apparent on the declivity beneath posterior mesonotal margin, when viewed from behind.

Petiole tapered from base to crest, markedly higher than long (Fig. 9), both anterior and posterior faces glabrous and shiny, meeting in an acute angle. Postpetiole nodiform, in lateral view the posterior outline somewhat angulate, and strongly reticulate-rugulose. Gaster carinulate at extreme base, the remainder shiny and covered with a faint, partly incomplete shagreen with occasional striolae.

Dorsum of head anteriorly carinulate, that of promesonotum rugose in particular posteriorly, with only few meshes; surfaces between rugae and carinulae shiny or with faint microsculpture (Figs 1 - 3); distance between costulae on head ca. 35 - 70 µm, width of meshes on promesonotum ca. 50 - 100 µm. Pilosity consisting of whitish short decumbent hairs (ca. 150 - 200 µm long), and longer, out-standing hairs (ca. 400 - 550 µm long). All studied individuals are bicoloured with the head and gaster piceous and the alitrunk, petiole, postpetiole, and appendages ferruginous to dark brown.



Figs. 7, 8: Outline of promesonotal shield in dorsal view of: 7) *Meranoplus birmanus* sp.nov.; 8) *M. bicolor* (sympatric specimen).

Distribution (Fig. 11): So far only known from the type locality.

Derivatio nominis: Named for Birma [now Myanmar], the country of its origin.

Differential diagnosis and discussion

FOREL (1903) has described *Meranoplus bicolor* var. *lucidus* from Myanmar which was synonymized with *M. bicolor* (SCHÖDL 1998). Since the species here discussed is both shiny ("lucidus") and very similar to *M. bicolor* it was necessary to reexamine the lectotype of *M. var. lucidus*. I wondered whether the synonymy might have been done erroneously. However, study of the type series of *M. bicolor* var. *lucidus* proved, that the previously established synonym was justified.

Meranoplus birmanus is externally very similar to the sympatrically occurring *M. bicolor*, which doubtless is a close relative (it is not known whether the two species live syntopic). To enable comparison and separation, twelve specimens of the latter were also measured.

Meranoplus bicolor (workers with identical label data as the type series of *Meranoplus birmanus* sp.nov.): TL: 4.1 ± 0.17 (3.8 - 4.4), HL: 0.95 ± 0.037 (0.88 - 0.98), HW: 0.88 ± 0.035 (0.84 - 0.93), CI: 93 ± 1 (90 - 95), SL: 0.70 ± 0.028 (0.66 - 0.73), SI: 80 ± 2 (78 - 83), PML: 0.69 ± 0.040 (0.60 - 0.75), PW: 0.85 ± 0.042 (0.80 - 0.90), PMI: 124 ± 3 (120 - 130), AL: 0.96 ± 0.058 (0.8 - 1.0), PTL: 0.42 ± 0.019 (0.39 - 0.44), PTH: 0.43 ± 0.024 (0.39 - 0.46), PTI: 96 ± 3 (93 - 100), eyes with 12 - 14 ommatidia in the longest row, maximum diameter of eye 0.21 - 0.25 (12 measured).

Meranoplus birmanus differs by the dorsal surfaces of head and promesonotum being shiny

and not covered with a distinct rugo-reticulum, which in particular is apparent on the promesonotal shield in *M. bicolor* (compare Figs 1 - 6); by the petiole being distinctly shorter in *M. birmanus* (0.31 - 0.39; PTI 73 - 84), whereas in *M. bicolor* the length of the petiole is almost equal to its height (0.39 - 0.44; PTI 93 - 100); furthermore the promesonotal shield is slightly broader in *M. birmanus* (PW 088 - 0.98; PMI 126 - 134) than in *M. bicolor* (PW 0.8 - 0.9; PMI 120 - 130) (compare Figs 7, 8).

Meranoplus bicolor (GUÉRIN-MÉNEVILLE)

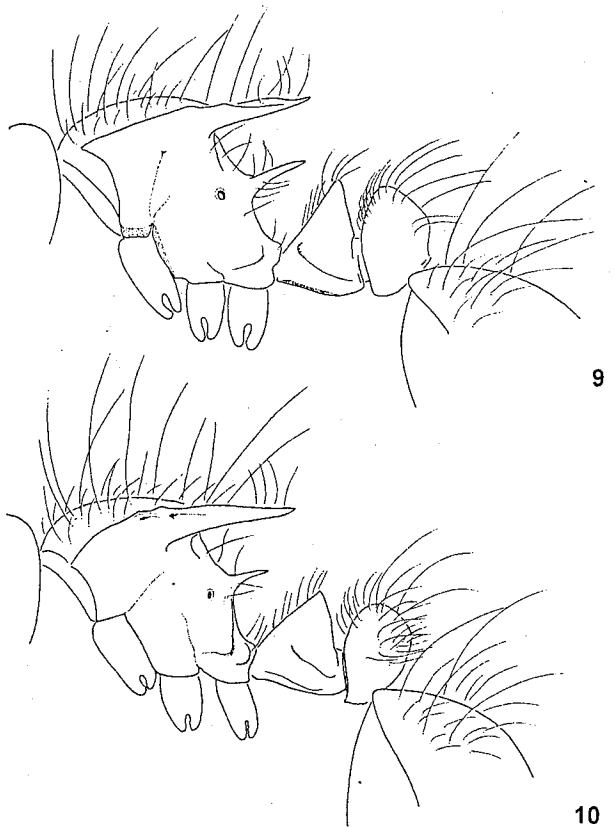
Cryptocerus bicolor GUÉRIN-MÉNEVILLE, 1844: 425 (worker). - F. SMITH 1853: 224.

(combination in *Meranoplus*), SCHÖDL 1998 (revision; synonymic list; see also for references).

Laos: Sedone Prov., Pakse, 12.-15.v.1965, leg. Ashlock (BPBM, NHMW) (5 workers) (first record for Laos).

Zusammenfassung

Meranoplus birmanus sp.nov. wird von Myanmar beschrieben. Die neue Art wird mit dem



Figs 9, 10: Lateral view of midbody of workers of of 9) *Meranoplus birmanus* sp.nov., 10) *M. bicolor* (sympatric specimen).

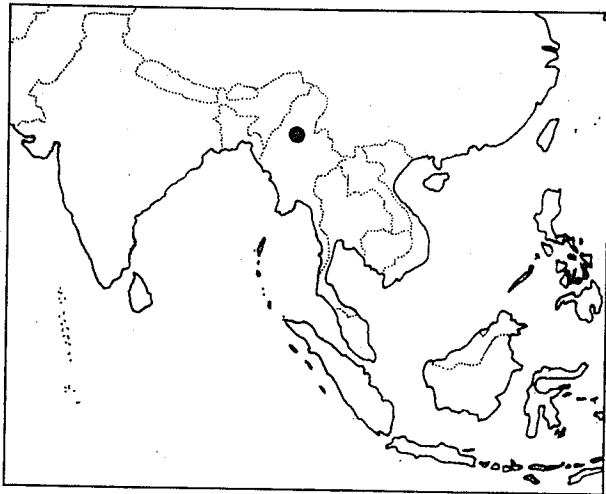


Fig. 11: Type locality of *Meranoplus birmanus* sp.nov.

äußerlich ähnlichen *M. bicolor* verglichen. Diagnostische Merkmale werden besprochen und charakteristische Unterschiede illustriert. *Meranoplus bicolor* wird erstmals aus Laos gemeldet.

References

- ARNETT, R.H. Jr., SAMUELSON, G.A. & NISHIDA, G.M. 1993. The insect and spider collections of the world. Second edition. - Gainesville, Florida: Sandhill Crane Press. vi + 310 pp.
- BOLTON, B. 1981. A revision of the ant genera *Meranoplus* F. SMITH, *Dicroaspis* EMERY and *Calyptomymex* EMERY (Hymenoptera: Formicidae) in the Ethiopian zoogeographical region. *Bulletin of the British Museum (Natural History)* 42 (2): 43 - 81.
- FOREL, A. 1903. Les formicides de l'Empire des Indes et de Ceylan. Part 10. *Journal of the Bombay Natural History Society* 14: 679 - 715.
- SCHÖDL, S. 1998. Taxonomic revision of Oriental *Meranoplus* F. SMITH, 1853 (Insecta: Hymenoptera: Formicidae: Myrmicinae). *Annalen des Naturhistorischen Museums in Wien* 100B: 361-394.

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