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Description of a new species of the Ponerine ant genus, *Emeryopone* (Hymenoptera: Formicidae) from Karnataka, India

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Abstract: A new species of Emeryopone, Emeryopone narendrani is described from Karnataka, and is the first record of this genus from India. The ant genus Emeryopone is a small group, with only 4 species around the world. They are E. buttelreepeni Forel from Sumatra, E. franzi (Baroni Urbani) from Nepal, E. loebli (Baroni Urbani) from Israel and E. melaina Xu from China. The new species, E. narendrani comes closer to E. buttelreepeni from Sumatra.

Keywords : *Emeryopone narendrani*, Formicidae, Ponerinae.

INTRODUCTION:

The genus *Emeryopone* Forel, is classified under the tribe Ponerini and subfamily Ponerinae. *Emeryopone* is a small genus, with only four species described from around the world[1,2]; *E. buttelreepeni* Forel from Sumatra, *E. franzi* (Baroni Urbani) from Nepal, *E. loebli* (Baroni Urbani) from Israel and *E. melaina* Xu from China. General notes and a key to species of the genus was given by Baroni Urbani[1].

RESULTS & DISCUSSION:

This observation is based on a single specimen collected from Western Ghats, Karnataka. The holotype is deposited in the Insect Museum at the Centre for Ecological Sciences, Indian Institute of Science, Bangalore.

The specimen was examined using Wild stereo zoom microscope. All the drawings were made using the Wild camera lucida, attached to the microscope.

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The linear measurements and indices employed in this study are described below :

HL	Head length: length of head from the posterior margin of the head to the anterior extremity of the clypeus.
HW	Head width: maximum width of head.
EL	Eye length: length of compound eye measured in the same view as HL.
ANTML	Antennomere length: length of the ultimate antennomere.
ANTMW	Antennomere width: width of the ultimate antennomere.
SL	Scape length: length of the first antennal segment, excluding the radicle.
PRNW	Pronotum width: width of the pronotum at the dorso-lateral margins.
PTL	Petiole length: length of the petiole, measured in dorsal view.
PTW	Petiole width: maximum width of the petiole in dorsal view.
PTH	Petiole height: maximum height of the petiole, measured in lateral view at right angles to petiole length.
TL	Maximum measurable length in lateral view.

CI	Cephalic index: HW/HL
SI	Scape index : HL/SL (as followed in Baroni Urbani)
ANTMI	Antennomere index ANTMW/ANTML
PTWI	Petiole width index: PTW/PTL

Genus *Emeryopone* Forel

Emeryopone Forel, 1912[3]: 761. Type species: *Emeryopone buttelreepeni*, by monotypy. *Emeryopone buttelreepeni* Forel, 1913[4], 36: 15 (w.) *Emeryopone* junior synonym of *Belonopelta*: Baroni Urbani[1], 1975: 296. Revived from synonymy: Bolton, 1995: 28.

General Diagnosis of the genus:

Small to medium size, mandibles long with 5-6 tooth, apical tooth unusually long, and broadly curved. Antennae 12 segmented with 3 segmented club. Eyes formed from one to ten ommatidia. Frontal lobes present. Alitrunk with well developed sutures. Petiole squamose with a well formed subpetiolar process. Hind tibia with a single pectinate spur. Body generally sculptured.

List of *Emeryopone* species

There are 5 species of *Emeryopone*, known from Sumatra, Nepal, Israel, China and India.

1. *Emeryopone buttelreepeni* Forel[3] 1912: 762 (w.)
2. *Emeryopone (Belonopelta) franzi* (Baroni Urbani[1]) 1975[5]: 305 (w.) (Revived from synonymy[5])
3. *Emeryopone (Belonopelta) loebli* (Baroni Urbani[1]) 1975: 307 (w.) (Revived from synonymy[5])
4. *Emeryopone melaina* Xu[2] 1998: 122 (w., q.)
5. *Emeryopone narendrani* sp. nov.

Key to known species of the genus *Emeryopone* (Fig. 4)

1. Small in size, total length less than 3.20mm, HL 0.73mm, HW 0.58mm, SL 0.56m——*loebli* (Baroni Urbani)

   Larger in size, total length more than 3.50mm, HL >0.80mm, HW > 0.70mm, SL >0.60mm——2

2. Head length >1.0mm, HW>0.80mm, SL > 0.80mm——3

   - Head length <1.0, HW<0.80, SL<0.80——4

3. Petiolar node in profile broadly triangular, PTL 0.40mm, PTW 0.44mm, CI

   0.77mm, SI 1.30mm, PTI 1.67m——*franzi* (Baroni Urbani)

   - Petiolar node in profile rectangular, PTL 0.37mm, PTW 0.53mm, CI 0.80mm, SI 1.04mm, PTI 1.40mm——*melaina* Xhenghui Xu

4. Total length 4.00-4.50mm, CI 0.82mm, SI 1.22mm, ANTMI 0.48mm, PTI 1.60mm, eyes larger in size——*buttelreepeni* (Forel)

   - Total length 3.8mm, CI 0.86mm, SI 1.29mm, ANTMI 0.43mm, PTI 1.22mm, eyes very small 0.05m——*narendrani* sp nov.

***Emeryopone narendrani* sp nov**

Holotype worker. India: Karnataka: Utttara Kannada, Kumta (14° 26' N 74°27' E) May 1998, Collector: Ganapathy H. M. (CES)

Worker's description:

(fig. 1-3) Total length 3.8mm (Fig.1), head longer than broad (CI 0.86mm), slightly broader posteriorly than anteriorly, with almost straight cheeks, posterior corners rounded, posteriorly broadly emarginated (Fig. 2). Mandibles elongate-triangular, broadly curved with long, slender spiniform teeth, apical tooth very long, third one smallest (Fig. 2). Clypeus broadly convex, depressed towards sides and projects like convex cuticular lobes laterally. Frontal area distinct, with short frontal lobes. Antennae 12 segmented (Fig. 3), funicular segments gradually thickening towards apex with 3 segmented club, the ultimate

antennomere more than 2x longer than broad (ANTML 0.32mm, ANTMW 0.14mm, ANTMI 0.43mm), scape long (SL 0.68mm), but not reaching beyond head. Eyes very small (EL 0.05mm), and placed towards the anterior lateral corners of head, more towards the base of mandibles. Thorax broad, not broader than head, broader than long and broader than mesonotum and metanotum, pronotum anteriorley rounded, pro-mesonotal suture distinct, meso-metanotal suture obsolete. Propodeum with a posterior concave declivity. Petiole broader than long (PTI 1.22mm), with well formed subpetiolar process. Legs short and stouter, hind leg with a single pectinate spur. Gaster long and rounded posteriorly.

Head, thorax, petiole and gaster foveate, interfoveal space more or less smooth and shining, mandibles smooth and shining, clypeus sculptured, propodeal concavity longitudinally striated, legs smooth and shining. Body hairs sub recumbent, short and abundant. Head, thorax, petiole and gaster ferruginous, mandibles, antennae, legs and extreme tip of gaster lighter.

The new species, *E. narendrani* resembles *E. buttelreepeni* in having similar colour, antennomere, and petiolar width, but differs from *E. buttelreepeni* in being of smaller size (*E. buttelreepeni*: 4.00 - 4.50mm, *E. narendrani*: 3.80mm), having smaller eyes, which are placed well anteriorly, and by the nature of the subpetiolar process. It differs clearly from *E. loebli* (3.2mm) in having brown color and being larger in size. It differs mainly from *E. franzi* (4.5mm) in being of smaller size, having very small eyes, by the nature of the petiole and the subpetiolar process. The new species, *E. narendrani* differs noticeably from *E. melaina* (4.9mm) in being much smaller in size and by having very small eyes. Other differences in body parameters are given in figure 4, along with those of other species given in Baroni Urbani[1] and Xu[2] for comparison.

Etymology :

This species is named after my beloved teacher, Professor Narendran TC, University of Calicut, India, who trained me in the fundamentals of taxonomy.

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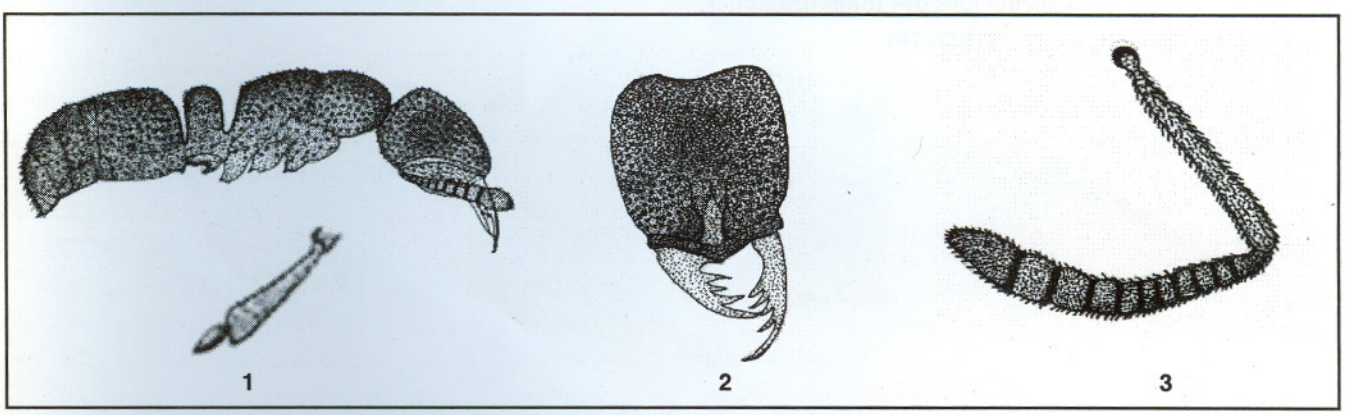

Fig. 1-3 : *Emeryopone narendrani*, sp. nov., holotype worker: 1, Profile lateral view, 2, Head; frontal view; 3, Antenna.

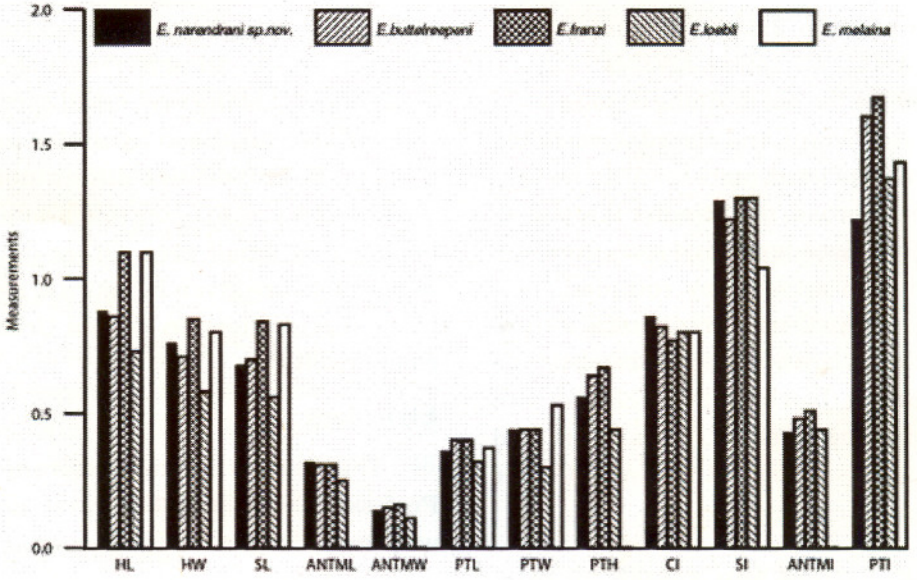

Fig. 4: Comparative body measurements and indices of five species of *Emeryopone,* E. *narendrani* sp. nov., *E. buttelreepeni, E. franzi, E. loebli,* and *E. melaina.* (HL & HW = Head length & width, SL=Scape length, ANTML & ANTMW = antennomere length & width, PTL, PTW & PTH = Petiole length, width & height, CI = Cephalic index, SI = Scape index, ANTMI = Antennomere index, and PTI = Petiole index)

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