

Two new species of *Pheidole* Westwood (Myrmicinae: Formicidae: Hymenoptera) from India

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ABSTRACT : Two species of *Pheidole*; viz *P. terraceensis* sp. nov. and *P. duneraensis* sp. nov. are described and illustrated. The new species differ remarkably from other species of this genus described hitherto.

Genus *Pheidole* Westwood is represented by about 535 species over the globe. From Oriental region it is represented by about 63 species and from India by 35 valid species (Bolton, 1995a and 1995b). After Bingham's Fauna (1903); only one species was described by Wilson (1984) from India. During the present studies, two new species viz. *Pheidole terraceensis* sp. nov. and *Pheidole duneraensis* sp. nov. have been discovered. These two differ considerably from other species of this genus and have been described and illustrated in present text.

***PHEIDOLE TERRACEENSIS* SP. NOV.**

Holotype Major (worker) (Figs. 1,2,3): Length: 6 mm; Head length 1.7 mm; Head width: 1.6 mm; Scape length: 1.63 mm; Scape index: 98.39; Eye diameter: 0.29 mm; Pronotal width: 0.93 mm; Alitrunk length: 2 mm; Cephalic index: 103.7; Mandibular index: 41.66.

Head (Figs. 1,3): Almost as long as broad, slightly converging below eyes; transverse depression below vertex; mandibles with two apical teeth; antennal club formed by 3 apical joints, which are much longer than preceding joints; antennal scrobes well developed reaching up to length of scape; scape falls 1/5th short of its length of head; eyes lateral, placed below mid-line of head; frontal carinae covering bases of antennae, diverging posteriorly extending feebly up to upper margin of eyes; clypeus with anterior margin incised in middle, dentate, posterior margin extending in between frontal carinae; lateral margin of clypeus with pit in front of antennal insertions; clypeus with strong carina in middle; a pit or depression present above clypeal carina; small tubercle precedes this pit towards irons; whole of head rugulose, area between rugae and in scrobes finely punctate; mandibles finely punctured; covered with long hair all over.

Alitrunk, Petiole and Post-Petiole (Figs. 2,3): Pronotum with small lateral tubercles, convex; pro-mesonotal suture indistinct; mesonotum with transverse ridge; metanotal groove

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broad and shallow; propodeum below the level of pro-mesonotum; propodeal spines with acute apex, long, erect; lateral side of propodeum with longitudinal depression, below spiracle; petiole with small triangular appendage anteriorly; petiole rectangular seen from front, anterior margin diverging dentate, upper margin notched with indistinct emargination; post-petiole oval, with blunt lateral margins, broader than long (2:1); petiole and post-petiole, 1:2; whole of alitrunk transversely rugose, area between rugae finely punctate; propodeal declivity with indistinct rugae, punctate; petiole with few transverse rugae at upper margin, punctate; post-petiole finely punctate; alitrunk, petiole, post-petiole, legs with fine long hairs.

Gaster (Figs. 2,3): Oval, finely punctured from base to apex; covered with hairs.

Head and gaster dark reddish brown; head with a light reddish spot at anterior margin below eyes extending towards clypeus; alitrunk, petiole, post-petiole light reddish brown; mandibles reddish; antennae, legs pale yellowish red.

Paratype Minor (worker) (Figs. 4,5): Length : 3.33 mm; Head length 0.58 mm; Head width: 0.66 mm; Scape length: 1 mm; Scape index: 151.51; Eye diameter: 0.18 mm; Pronotal width: 0.49 mm; Alitrunk length: 1.33 mm; Cephalic index: 113.7.

Head oval; mandibles with 3rd tooth smaller than 4th; scape long, extending well beyond the top of head by more than half of its length; eyes placed above the mid-line of head; pronotum with distinct truncate impression; tubercles distinct; propodeal spines like major, but smaller; petiole without appendage; head with rugae between eyes and frontal carinae; propodeum with transverse rugae at anterior margin; head, alitrunk, petiole, post-petiole finely punctured; head and gaster black; alitrunk, petiole, post-petiole yellowish brown, antennae pale yellow, mandibles light brown; covered with long hairs; rest like major.

Holotype: Worker (Major); India, Terrace, Himachal Pradesh; 412 Mtrs, 5.VI.2001; Bharti, H.

Paratypes: 5 majors, 10 minors with same data as of holotype.

Habitat: Collected from soil nest.

Discussion: *P. terraceensis* sp. nov. is somewhat allied to *P. malinsii* Forel; but can be easily separated as; propodeum transversely rugose and punctate in *P. terraceensis* sp. nov.; but smooth and shining in *malinsii*; petiole without spine on appendage in *P. terraceensis* sp. nov.; with spine in *malinsii*; gaster finely punctate all over in *R. terraceensis* sp. nov.; longitudinally striate only on basal half in *malinsii*; head punctured, reticulate in minor of *P. terraceensis* sp. nov.; but smooth in *malinsii*; scape extending beyond the top of head by more than half of its length in *P. terraceensis* (minor); but by one fourth in *malinsii*.

Etymology: Species is named after its type locality, Terrace, Himachal Pradesh.

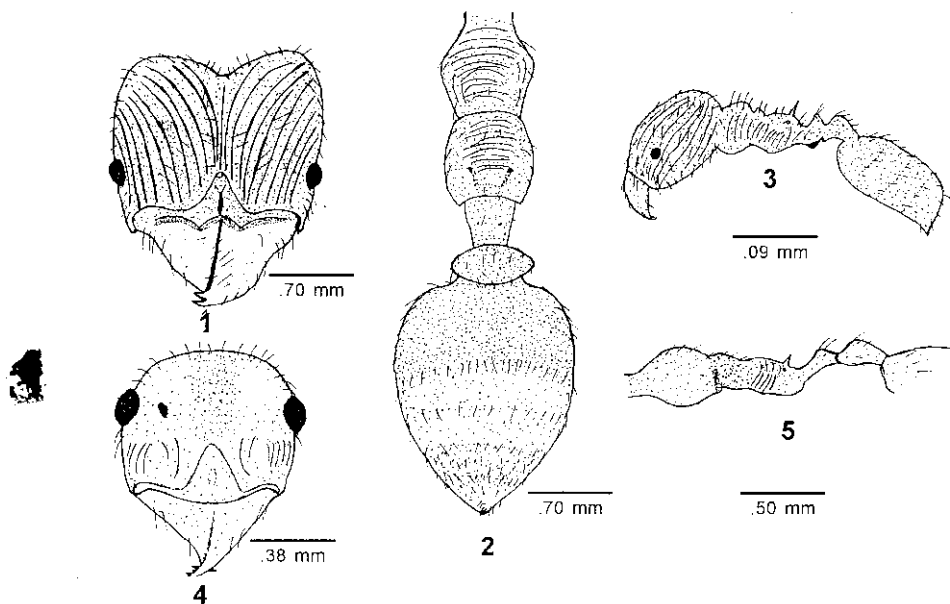


Fig.1-5. *Pheidole terraceensis* sp. nov. 1) Head of Major of *P. terraceensis* sp. nov.; 2) Alitrunk, petiole, post-petiole, gaster in dorsal view of *P. terraceensis* sp. nov. (Major); 3) Head, alitrunk, petiole, post-petiole, gaster in lateral view of *P. terraceensis* sp. nov. (Major); 4) Head of minor of *P. terraceensis* sp. nov. 5) Alitrunk, petiole, post-petiole of minor of *P. terraceensis* sp. nov.

PHEIDOLE DUNERAENSIS SP. NOV.

Holotype Major (worker) (Figs. 6,7,8.): Length : 4.66 mm; Head length: 1.66 mm; Head width; 1.5 mm; Scape length: 1.33 mm; Scape index: 88.8; Eye diameter: 0.24 mm; Pronotal width: 0.83 mm; Alitrunk length: 1.66 mm; Cephalic index: 90.36; Mandibular index: 40.16.

Head (Figs. 6,8): Almost as long as broad, narrowing anteriorly; mandibles with two apical teeth, with strong curving dentate inner margin; antennal club formed by apical 3 joints, which are longer than preceding joints; antennal scrobes distinct up to length of scape; scape short by 1/3rd of its length of head; eyes slightly below mid-line of head, placed more towards front; frontal carinae diverging posteriorly; clypeus incised anteriorly with blunt denticles, posteriorly extending in between frontal carinae; clypeus carinate in middle; head rugulose, area between rugae and in scrobes densely punctured; mandibles finely punctured.

Alitrunk, Petiole and Post-Petiole (Figs. 7,8): Pronotum with blunt large tubercles; promesonotal suture obsolete; mesonotum with faint transverse ridge; metanotal groove narrow, low lying and deep; propodeal spines short and blunt; petiole with short semi-transparent appendage; petiole rectangular seen from front, anterior margin bluntly dentate; upper margin slightly emarginate with indistinct lateral denticles; post-petiole with blunt lateral margins,

broader than long (0.8:1.5); petiole and post-petiole, 0.75:1.5; pronotum with transverse rugae anteriorly, rest of alitrunk; petiole, post-petiole very densely punctured.

Gaster (Figs. 7,8): Oval, first tergite very densely and remaining tergites finely punctured.

Head, anterior part of alitrunk (pronotum, mesonotum); post-petiole; gaster almost black; remaining dark reddish brown.

Paratype Minor (worker) (Figs. 9,10): Length : 3 mm; Head length 0.66 mm; Head width: 0.60 mm; Scape length: 1.13 mm; Scape index: 188.3; Eye diameter : 0.16 mm; Pronotal width : 0.41 mm; Alitrunk : 1.29 mm; Cephalic index: 90.90.

Head oval posteriorly, straightening up anteriorly; mandibles with 3rd tooth reduced; scape long, extending beyond top of head by more than half of its length; eyes slightly above mid-line of head; pronotum rounded above; propodeal spines small and acute; propodeum with flat anterior portion; petiole triangular without appendage; post-petiole oval; head finely punctured; alitrunk densely punctured with few irregular striations; petiole, post-petiole, gaster finely punctured; rest like major except dark reddish brown colour replaced by yellowish brown.

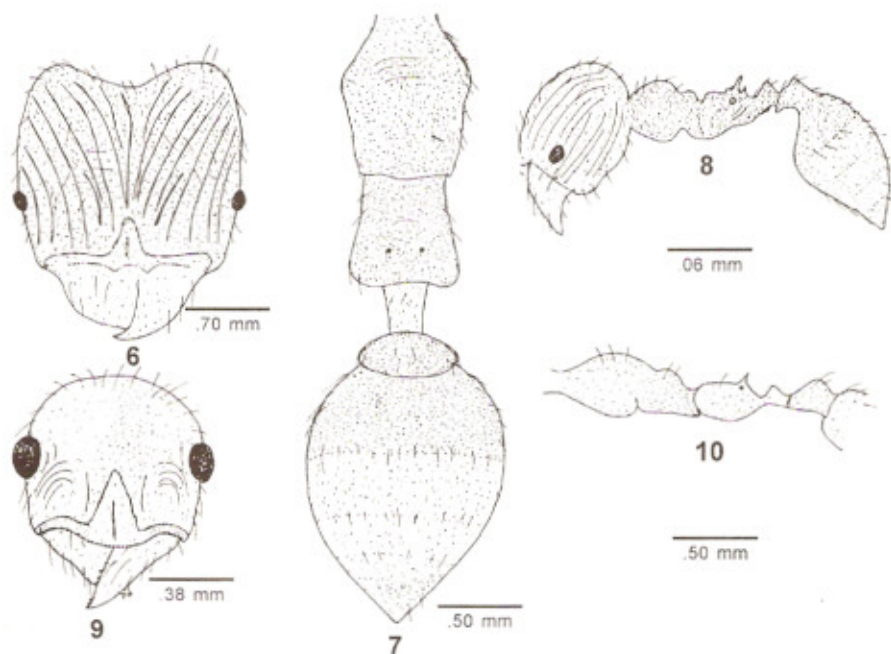


Fig.6-10. *Pheidole duneraensis* sp. nov. 6) Head of Major of *P. duneraensis* sp. nov. 7) Dorsal view of Alitrunk, petiole, post-petiole, gaster of Major of *P. duneraensis* sp. nov. 8) Lateral view of *P. duneraensis* sp. nov. 9) Head of Minor of *P. duneraensis* sp. nov. 10). Lateral view (alitrunk, petiole, post-petiole) of Minor of *P. duneraensis* sp. nov.

Holotype: Worker (Major); India, Dunera, Himachal Pradesh; 700 Mtrs.; 8.III. 2000; Bharti, H.

Paratypes: 8 majors, 9 minors with same data as of holotype.

Habitat: Collected from soil nest; pupae also collected.

Discussion: The species *P. duneraensis* sp. nov. is somewhat allied to *P. malinsii* Forel and *P. terraceensis* sp. nov.; but can be easily separated from both. From *P. malinsii* as; propodeum smooth and shining in *malinsii*; densely punctured in *P. duneraensis* sp. nov.; petiole appendage with a spine in *malinsii*; without spine in *duneraensis* sp. nov.; gaster longitudinally striate in basal half in *malinsii*; but densely punctured in basal half and finely punctured in rest of it in *duneraensis* sp. nov. *P. duneraensis* sp. nov. can also be separated from *P. terraceensis* sp. nov. as; clypeal incision ending into acute teeth in *terraceensis* sp. nov.; blunt teeth in *duneraensis* sp. nov.; propodeal spines long in *terraceensis* sp. nov.; short in *duneraensis* sp. nov.; alitrunk rugulose along with fine punctures in *terraceensis* sp. nov.; but densely punctured without rugae in *duneraensis* sp. nov. Both species differ remarkably in measurement indices, discussed in text, apart from other differences.

Etymology: Species is named after its type locality, Dunera, Himachal Pradesh.

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