NEW RECORDS OF ANTS (INSECTA: HYMENOPTERA: FORMICIDAE) FROM HARYANA, INDIA

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INTRODUCTION


The present studies are based on the material collected by the second author from Pinjore, Haryana. Pinjore, a town in Panchkula district of Haryana state is located close to Chandigarh set over 1,800 feet above the sea level in a valley, overlooking the Sivalik Hills. Panchkula district has a sub tropical continental monsoon climate with hot summer, cool winter, good monsoon rainfall and great variation in temperature (0 °C to 43 °C). The average rainfall of the district is about 1283 mm. Morni hills constitute the highest point of the district as well as of Haryana. The Ghaggar River is the only perennial river. The other important rivers/streams of the district are Sirsa and Kaushalya. Pinjore has a total geographic area of about 288 sq. km. and lies between latitudes 30°47´50´´N and76°55´02´´ East longitudes. It is known for the Asia’s best 17th Century Pinjore Garden. Thorny, dry, deciduous forest and thorny shrubs can be found all over the state. Due to good rainfall and elevation Pinjore has rich, abundant and diverse flora and fauna. Tree species generally found are Eucalyptus camaldulensis, Dalbergia sissoo, Acacia nilotica, Acacia tortilis, Acacia catechu, Mangifera indica and Prosopis juliflora. The major species grown under Agroforestry are Eucalyptus camaldulensis and Populus deltoides. The present paper describes...
eight species distributed under eight genera of the family Formicidae comprising five subfamilies namely Formicinae with one genera and one species, Ponerinae with two genera and two species, Dolichoderinae with one genera and one species, Pseudomyrmecinae with one genera and one species, Myrmicinae with three genera and three species along with a checklist of ant species from Haryana. Out of eight species seven species are new records from Haryana state. All the eight species of ants (Formicidae) from Haryana state has been deposited and registered in the Identified Register of Invertebrate collection of Desert Regional Centre, ZSI, Jodhpur.

SYSTEMATICS

Order HYMENOPTERA

Family FORMICIDAE LATREILLE, 1809

(i) Subfamily FORMICINAE LEPELETIER, 1809

1. Camponotus (Tanaemyrmex) invidus Forel, 1892

(ii) Subfamily PONERINAE LEPELETIER, 1835

2. Odontoponera transversa transversa (Smith, F. 1857)

3. Pachycondyla rufipes rufipes (Jerdon, 1851)

(iii) Subfamily DOLICHODERINAE FOREL, 1878

4. Tapinoma melanocephalum melanocephalum (Fabricius, 1793)

(iv) Subfamily PSEUDOMYRMECINAE SMITH, 1952

5. Tetraponera nigra (Jerdon, 1851)

(v) Subfamily MYRMICINAE EMERY, 1877

6. Monomorium mayri Forel, 1902

7. Myrmicaria brunnea brunnea Saunders, 1842

8. Pheidologeton affinis affinis (Jerdon, 1851)

Ants are polymorphic social insects having three distinct forms- the perfect and fertile female, the male, and workers (major or minor). The largest forms are soldiers. Identification of ants is mainly based on the worker caste.

IDENTIFICATION KEY IS BASED ON THE WORKER CASTE OF ANTS

(Modified from Bolton, 1994)

Key to the sub-families of family Formicidae

1. Body with a single reduced segment \textit{i.e.} petiole between alitrunk and abdomen .......... 2

2. Body with two reduced segment \textit{i.e.} petiole and post petiole between alitrunk and abdomen. ................................................. 4

3. Apex of gaster with a semicircular or circular acidopore, usually guarded by setae, sting absent .............................................. \textit{Formicinae}

4. Posterior margin of clypeus not projecting in between antennal sockets, promesonotal suture present, hind tibia with a conspicuous pectinate spur ................................................. \textit{Pseudomyrmecinae}

5. Either pygidium or hypopygidium armed with peg like teeth or short spines....... \textit{Ponerinae}

6. Posterior margin of clypeus projecting in between antennal sockets, promesonotal suture absent, hind tibia with only a simple spur... .................................................. \textit{Myrmicinae}

(i) Subfamily FORMICINAE LEPELETIER, 1809

Genus \textit{Camponotus} Mayr, 1861

1. \textit{Camponotus} (\textit{Tanaemyrmex}) \textit{invidus} Forel, 1892

Original Combination – \textit{Camponotus invidus} Forel, 1892


Diagnostic Characters: Length worker (minor) -5-6 m.m.

Worker: Head, alitrunk and abdomen entirely pale yellow with sparse erect yellowish pubescens. Head more or less elongate, sides of the head straight, not convex. Mandibles with 6 teeth; clypeus comparatively broad. Antennae 12 segmented, comparatively long and thick. Alitrunk convex anteriorly, strongly laterally compressed posteriorly, with the pro-meso and metanotum more strongly curved. Legs stout, tibia cylindrical. Petiole one jointed, node low, convex in front, flat posteriorly, abdomen comparatively long and massive.

Distribution: India: Uttarakhand, Rajasthan, Orissa, Himachal Pradesh, Sikkim, West Bengal, Delhi, Uttar Pradesh, Andaman & Nicobar Islands.

Remarks: Reported for the first time from Haryana state.

(ii) Subfamily PONERINAE LEPELETIER, 1835

Key to the genera of sub-family Ponerinae

1. Pronotum with teeth or spines ......................
   Odontoponera Mayr

Pronotum without teeth or spines ...................... Pachycondyla Smith

Genus Odontoponera Mayr, 1862

2. Odontoponera transversa transversa (Smith, F., 1857) Original Combination – Ponera transversa Smith, F., 1857


1858. Ponera, pt., Smith, Cat. vi : 86, Worker.


Diagnostic Characters: Length worker-9-12 m.m.

Worker: Black, mandibles, antennae and legs dark castaneous, the mandibles and clypeus longitudinally striate, the anterior margin of the latter denticulate, the striae on the thorax and node of the petiole transverse, abdomen smooth but dull, with piligerous points in the smaller form or variety. Head quadrate, the occiput slightly emarginated, the posterior lateral angles rounded, mandibles powerful, subtriangular, strongly dentate. Antennal carinae widened anteriorly, more or less covering base of antennae, antennae 12 jointed, stout, the scape passing by very little beyond the top of the head, the second joint of the flagellum very little longer than 1st or 3rd joint of the flagellum. Alitrunk massive, pronotum convex, anteriorly narrowed into a short collar, the anterior lateral angles with teeth or spines; pro-meso and meso–metanotal sutures distinct above, mesonotum transversely oval, slightly convex, metanotum slightly compressed, the basal portion passing into the apical portion by a gradual slope, the latter boad, flat, with a denticulate ridge on each side dividing it from the sides of the metanotum. Claws not pectinate. Petiole free, with a flexible joint between it and abdomen. Petiole one jointed, node moderately raised, flattened anteriorly and posteriorly, its border emarginated. Abdomen short, constriction between the basal two segments distinct.

Distribution: India: Assam, Karnataka, Meghalaya, Sikkim, Tripura, Chandigarh, Himalaya. Elsewhere: Myanmar, China, Sumatra, Singapore, Borneo, Java, Philippines, Siam, Annam, Malay.

Remarks: Reported for the first time from Haryana state.
Genus *Pachycondyla* Smith, 1858

3. *Pachycondyla ruﬁpes ruﬁpes* (Jerdon, 1851)

Original Combination—*Ponera ruﬁpes* Jerdon, 1851


**Diagnostic Characters:** Worker: length 13-15 mm. Dull black, mandibles, antennae and legs castaneous red, the apical two or three abdominal segment bright ferruginous. The whole insect covered with an abundant pale reddish yellow pilosity. Mandibles longitudinally striate without distinct teeth. Eyes small. Posterior margin of clypeus defined by a suture. Middle of front margin of clypeus not produced. Antennal cariniae widened anteriorly, more or less covering base of antennae. Antennae 12 jointed, scape of antennae reaching to posterior margin of head, club thick at apex. Alitrunk rounded above, Pronotum without teeth or spines, metanotum unarmed, the apical truncated face of metanotum smooth and shining and strongly margined on the sides and above. Posterior coxae unarmed. Posterior tibia with two spurs, claws simple. Petiole free, with a flexible joint between it and abdomen. The node of petiole about twice as broad as long, convex and rounded above, posteriorly concave, smooth and shining, spinous processes on the posterior margin above irregular. Abdomen very massive, constriction between the basal two segments distinct, sting powerful and exerted, claws simple.

**Distribution:** India: Andaman & Nicobar Islands, Assam, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa, Sikkim, Tripura, Western India (from Kanara to Malabar), West Bengal. Elsewhere: Myanmar, Sri Lanka.

**Remarks:** Reported for the first time from Haryana state.

(iii) Subfamily DOLICHODERINAE

FOREL, 1878

Genus *Tapinoma* Forster, 1850

4. *Tapinoma melanocephalum melanocephalum* (Fabricius, 1793)

Original Combination—*Formica melanocephalum*, Fabricius, 1793


**Material examined:** Workers-20 exs., Pinjore, 26.ii.2013, Seema Kumar Coll. (Reg. No. 9081/A).

**Diagnostic Characters:** Worker: length 13-15 mm. Dull black, mandibles, antennae and legs castaneous red, the apical two or three abdominal segment bright ferruginous. The whole insect covered with an abundant pale reddish yellow pilosity. Mandibles longitudinally striate without distinct teeth. Eyes small. Posterior margin of clypeus defined by a suture. Middle of front margin of clypeus not produced. Antennal cariniae widened anteriorly, more or less covering base of antennae. Antennae 12 jointed, scape of antennae reaching to posterior margin of head, club thick at apex. Alitrunk rounded above, Pronotum without teeth or spines, metanotum unarmed, the apical truncated face of metanotum smooth and shining and strongly margined on the sides and above. Posterior coxae unarmed. Posterior tibia with two spurs, claws simple. Petiole free, with a flexible joint between it and abdomen. The node of petiole about twice as broad as long, convex and rounded above, posteriorly concave, smooth and shining, spinous processes on the posterior margin above irregular. Abdomen very massive, constriction between the basal two segments distinct, sting powerful and exerted, claws simple.

**Distribution:** India: Andaman & Nicobar Islands, Assam, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa, Sikkim, Tripura, Western India (from Kanara to Malabar), West Bengal. Elsewhere: Myanmar, Sri Lanka.

**Remarks:** Reported for the first time from Haryana state.
high, its anterior margin slightly arched. Antennae thick the scape extending beyond the top of the head. The joints of the flagellum longer than broad. Alitrunk viewed from the side not emarginate, the pro-meso and meso-metanotal sutures distinct slightly constricted at the latter suture. Petiole with a distinct node. Base of the abdomen overhanging the pedicel.

Distribution: India: Uttarakhand, Rajasthan, Gujarat, Maharashtra, Meghalaya, Tripura, Chandigarh, Karnataka, Tamil-Nadu, West Bengal, Orissa, Lakshadweep, Andaman & Nicobar Islands, Nagaland. Elsewhere: Spread through both the hemispheres, S. America, French Guiana.

Remarks: Reported for the first time from Haryana state.

(iv) Subfamily PSEUDOMYRMECINAE

Smith, F., 1952

Genus Tetraponera

Original Combination - Eciton nigrum Jerdon, 1851


Diagnostic Characters: Worker: length 7-8 mm. Black, the mandibles, antennae and legs dark with very sparse and thin pubescens. Head rectangular, a little longer than broad, the posterior margin very broad as broad as the front of the head. Lateral angles not prominent, rounded. Mandibles broad and linear. Antennae short and stout. Alitrunk narrower, more compressed, the emargination at the meso-metanotal sutures very much deeper and wider, the metanotum higher viewed from the side with a regular arch from front to back. Petiole anteriorly of first node as long as node itself, with the nodes comparatively large, the 1st node oval, much narrower than 2nd node. 2nd node much broader than the 1st not constricted posteriorly. Abdomen elongate, narrowly oval.


Remarks: New distributional record from Pinjore, Haryana. Earlier reported from Rohtak and Panchkula, Haryana (Bharti, 2001).

(v) Subfamily MYRMICINAE

Emery, 1877

Key to the genera of sub-family Myrmicinae

1. Antennae with less than 12 joints.............. 2
2. Antennae 12 jointed ........ Monomorium Mayr

2. Antennae 9 jointed. ....... Myrmicaria Saunders
3. Antennae 11 jointed...... Pheidologeton Mayr

Genus Monomorium

Mayr, 1855

6. Monomorium mayri Forel, 1902

Original Combination – Monomorium gracillimum var. mayri Forel, 1902

1861. Monomorium gracillimum (Forel) Smith (Myrmica), Jour. Linn. Soc. vi : 34, Worker.


1903. Monomorium (Parholcomyrmex) gracillimum var. mayri (Forel) Bingham, Fauna Brit. India, Hym., 2: 210-211.


**Diagnostic characters:** Worker: Length 2.5-3 mm. Dark brown with the mandibles, antennae pale yellow in colour. Abdomen with a patch of pale yellow at the base. Head convex a little longer than broad, the posterior lateral angle rounded. Mandibles with the masticatory margin very oblique, armed with four teeth. Antennae short, slender, the scape falling short of the top by one fourth of its length. Alitrunk narrower than the head, emarginate at the meso-metanotal suture, mesonotum convex apical portion obliquely truncate. Petiole 1st node conical rounded above higher than and 2nd node and petiolate anteriorly, 2nd node globose not broader than the 1st node. Abdomen oval.


**Remarks:** Reported for the first time from Haryana state.

Genus **Myrmicaria** Saunders, W.W. 1842

7. **Myrmicaria brunnea brunnea** Saunders, 1842


**Diagnostic Characters:** Worker: Length 5.5 - 8 mm. Shining, chestnut brown. Head short, more or less rounded, longitudinally striate. Mandibles finely and closely striate, broadening towards the masticatory margin, armed with 4 acute teeth. Antennae 7 jointed, the joints of the flagellum slender much longer than broad with no distinct club. Pronotum convex and round above, the anterior lateral angles marked with distinct tubercles, pro-mesonotal suture obsolete, meso-metanotal suture deep the posterior lateral angles armed with acute spines. The nodes of pedicel conical, subequal, slightly compressed, the 1st node with a long petiole anteriorly and a very short petiole posteriorly. Abdomen oval, smooth and polished.

**Distribution:** India: Karnataka, Kerala, Meghalaya, Tamil Nadu, West-Bengal. Elsewhere: China, Indonesia, Myanmar, Sumatra, Sri Lanka, Indo-China, Vietnam.

**Remarks:** Reported for the first time from Haryana state.

Genus **Pheidologeton** Mayr, 1862

8. **Pheidologeton affinis affinis** (Jerdon, 1851)


**Diagnostic Characters:** Worker-Length 2 – 2.5 mm. Light brownish yellow, polished and shining and the mandibles black, the antennae and legs yellowish red. Sculpture more feeble and the median longitudinal furrow less deeply impressed. Head proportionately much longer and anteriorly stiate. Ocellus absent. Mandibles large, smooth, the masticatory margin with two strong teeth at apex. Antennae 11 jointed, scape
short, club of the antennae formed of 2 apical joints of flagellum. Alitrunk smaller, scutellum prominent and gibbous, the basal portion of the metanotum transversely striate armed with two spines, pronotum anteriorly striate and not armed. Petiole with 1st node narrower, more conical and not emarginate above, the keel below less strongly marked. Abdomen broadly oval.

**Distribution:** India: Assam, Karnataka, Kerala, Maharashtra, Manipur, Rajasthan, Tamil Nadu, West Bengal, Nagaland, Manipur. **Elsewhere:** Malaysia, Myanmar, Sri Lanka.

**Remarks:** Reported for the first time from Haryana state.

**SUMMARY**

The paper deals with 8 species of ants belonging to the family Formicidae reported from Haryana with 7 species recorded for the first time from the Haryana state.

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**REFERENCES**


CHECK LIST ON ANT SPECIES FROM HARYANA

Order HYMENOPTERA
Family FORMICIDAE LATREILLE, 1809

(i) Subfamily AENICTINAE EMERY, 1901
1. Aenictus clavatus clavatus Forel, 1901

(ii) Subfamily DOLICHODERINAE FOREL, 1878
2. Ochetellus glaber glaber (Mayr, 1862)
3. Tapinoma melanocephalum melanocephalum (Fabricius, 1793) nr
   (iii) Subfamily CERAPACHYNAE FOREL, 1878
4. Cerapachys aitkenii Forel, 1900
5. Cerapachys sulcinodis Emery, 1889
   Cerapachys risii Forel, 1892 (Junior synonym of sulcinodis)
   (iv) Subfamily PSEUDOMYRMECINAE SMITH, M.R., 1952
6. Tetraponera nigra (Jerdon, 1851)
7. Tetraponera rufonigra (Jerdon, 1851)
   (v) Subfamily MYRMIICINAE EMERY, 1877
8. Crematogaster (Crematogaster) brunnea contemta Mayr, 1879
9. Crematogaster (Crematogaster) subnuda subnuda Mayr, 1879
10. Crematogaster (Crematogaster) buddhae Forel, 1902
11. Crematogaster (Crematogaster) rothneyi rothneyi Mayr, 1879
12. Crematogaster (Crematogaster) sagei Forel, 1902
13. Crematogaster (Mesocrema) walshi Forel, 1902
14. Crematogaster (Physocrema) inflata Smith, F., 1857
15. Monomorium dichroum Forel, 1902
16. Monomorium destructor (Jerdon, 1851)
17. Monomorium glabrum (Ern. Andre, 1883)
18. Monomorium indicum indicum Forel, 1902
19. Monomorium longi Forel, 1902
20. Monomorium monomorium Bolton, 1987
21. Monomorium orientale Mayr, 1879
22. Monomorium pharaonis (Linnaeus, 1758)
23. Monomorium wroughtoni Forel, 1902
24. Pheidole latinode angustior Forel, 1902
25. Pheidole asperata Emery, 1895
26. Pheidole fervens fervens Smith, F., 1858
   Pheidole javana Mayr, 1867 (Junior synonym of fervens)
27. Pheidole bhavanae Bingham, 1903
28. Pheidole fergusoni Forel, 1802
29. Pheidole ghatica Forel, 1902
30. Pheidole horni Emery, 1901
31. Pheidole indica Mayr, 1879
32. Pheidole jucunda fossulata Forel, 1902
33. Pheidole lamellinoda Forel, 1902
34. Pheidole latinoda latinoda Roger, 1863
35. Pheidole multidens Forel, 1902
36. Pheidole parva parva Mayr, 1865
37. Pheidole sharpi hoogwerfii Forel, 1902
38. Pheidole spathifera spathifera Forel, 1902
39. Pheidole sykesii Forel, 1902
40. Aphaenogaster beccarii Emery, 1887
41. Aphaenogaster sagei sagei (Forel, 1902)
42. Tetramorium christlei Forel, 1902
43. Tetramorium coonoorense Forel, 1902
44. Tetramorium fergusoni Forel, 1902
45. Tetramorium nursei Bingham, 1903
46. Tetramorium smithi Mayr, 1879
47. Pheidologeton diversus diversus (Jerdon, 1851)
   Pheidologeton megacephala Smith, F., 1860 (Junior synonym of diversus)
48. *Meranoplus rothneyi* Forel, 1902
49. *Monomorium mayri* Forel, 1902 nr
50. *Myrmicaria brunnea brunnea* Saunders, 1842 nr
51. *Pheidologeton affinis affinis* (Jerdon, 1851) nr
   (vi) Subfamily AMBLYOPONINAE
   FOREL, 1893
52. *Myopopone castanea* (Smith, F.,1860)
    *Myopopone moelleri* Bingham, 1903 (Junior synonym of *castanea*)
   (vii) Subfamily FORMICIINAE
   LEPELETIER, 1809
53. *Polyrhachis (Myrmhopla) jerdonii* Forel, 1892
54. *Camponotus (Tanaemyrmex) invidus* Forel, 1892 nr
   (viii) Subfamily PONERINAE
   LEPELETIER, 1835
55. *Odontoponera transversa transversa* (Smith, F.1857) nr
56. *Pachycondyla rufipes rufipes* (Jerdon, 1851) nr