

PLATE II



11. *Eupelmus (Eupelmus) testaceiventris* (Motschulsky). Female.



12. *Neanastatus cinctiventris* Girault. Male.



13. *Chlorocyttus amaravathicus* Narendran & Girish Kumar. Female.



14. *Colotrechnus melghaticus* Narendran & Girish Kumar. Female.



15. *Homoporus maharashtriensis* Narendran & Girish Kumar. Female.



16. *Mesopolobus harithus* Sureshan & Narendran. Female.



17. *Propicroscyttus mirificus* (Girault). Female.



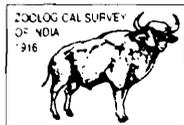
18. *Sphegigaster anamudiensis* Sureshan & Narendran. Female.



19. *Sphegigaster reticulata* Sureshan & Narendran. Female.



20. *Sphegigaster stepicola* Boucek. Female.



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ON A COLLECTION OF INSECTA : HYMENOPTERA : FORMICIDAE FROM UTTARAKHAND

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INTRODUCTION

Uttarakhand is a state located in the northern part of India (in Hindi -'Uttara' means 'North' and 'Khand' means 'Section'). On 9TH November 2000 a state was carved out of Himalayan and the adjoining districts of Uttar Pradesh as the 27TH state of the Republic of India under the name of the Uttaranchal. In January, 2007 the name of the state was officially changed from Uttaranchal to Uttarakhand.

The state shares an international boundary with China in the north and with Nepal in the east; and the state boundary with Himachal Pradesh in the west and Uttar Pradesh in the south. Geographically, the state is situated between latitudes 28° 43'- 31° 28'N and longitudes 77° 34'- 81° 03' E. The state has an area of 53,566 km² of which 93% is mountainous.

The state Uttarakhand has been divided into the following districts :

(1) Almora; (2) Bageshwar; (3) Chamoli; (4) Champawat; (5) Dehra Dun; (6) Haridwar; (7) Nainital; (8) Pauri Garhwal; (9) Pithoragarh; (10) Rudraprayag; (11) Tehri Garhwal; (12) Udham Singh Nagar; (13) Uttarkashi.

Among all the wide variety of insect life on the earth, ants are one of the few forms universally recognised. This is because they are found in all terrestrial habitats from swamp to harsh desert, from sea coast to great altitude and from deep in the soil to the tips of the highest trees. Ants have the most highly organised social life among all the insects. The major factor responsible for their ecological success is division of labour, performing different biological functions. Ants live in highly organised and integrated units the societies or colonies.

Bingham's (1903) fauna is the main source of knowledge on ants. Rothney (1889) published an

extensive note on ants of Bengal whereas Wroughton (1892) provided a good account on Formicidae mainly from Maharashtra. Chapman and Capco (1951) published a checklist of the ants of Asia. Roonwal (1975) discussed the plant pest status of *Dorylus orientalis*. Chhotani and Ray (1976) described the hymenopterous fauna of Rajasthan. Mukherji (1925), Chhotani and Maiti (1977) worked on the ants of Andaman Islands. Pajni and Suri (1978) reported the Formicid Fauna of Chandigarh. Mathew (1980, 1983, 1984, 2000) dealt with the ants of North-east India. Sharma (1981) gave a short note on the ants of desert area. Gadagkar (1983) gave the Species richness and diversity of Western Ghats, Karnataka. Ali (1991, 1992) reported the ants fauna of Karnataka. Tiwari (1994, 1997, 1998, 2002, 2003) has worked on ants of South India, Delhi, Orissa, West Bengal and Sikkim. Sunil Kumar (1997) worked the ant species richness of Bangalore whereas Rastogi (1997) gave the observations on behaviour of ants in Bangalore. Bharti (2001, 2002) has given a Checklist of ants of Northwest India. Tak (1995, 1996, 2000, 2004) has dealt with the ants of Gujarat and Rajasthan. Varghese (2003) has studied the ants of Indian Institute of Science Campus, Bangalore. Ghosh (2005) has worked out the ants of Rabindra Sarovar, Kolkata. Bolton (1995) has dealt with taxonomic and zoogeographical census of the extant ant taxa (Hymenoptera : Formicidae).

SYSTEMATICS

Order HYMENOPTERA

Family FORMICIDAE

Subfamily DORYLINAE Leach

Tribe DORYLINI Fabricius

Dorylus (Typhlopone) labiatus Shuckard

Dorylus (Typhlopone) labiatus Shuckard

Subfamily AENICTINAE

- Tribe ECITONINI Forel
Aenictus (Aenictus) brevicornis Mayr
 Subfamily DOLICHODERINAE Forel
 Tribe TAPINOMINI EMERY
Tapinoma (Micromyrma) melanocephalum Fabricius
 Subfamily PSEUDOMYRMECINAE Emery
 Tribe PSEUDOMYRMECINI Forel
Tetraoponera (Tetraoponera) rufonigra Jerdon
 Subfamily MYRMICINAE Lapeletier
 Tribe CREMATOGASTERINI Emery
Crematogaster (Acrocoelia) brunnea var. *contemta*
 Mayr
Crematogaster (Acrocoelia) rothneyi Mayr
Crematogaster subnuda Mayr
Crematogaster (Orthocrema) walshi Forel
 Tribe MERONOPLINI Emery
Meranoplus bicolor Guerin
 Tribe SOLENOPLINI Forel
Monomorium (Monomorium) pharaonis Linne
Monomorium (Monomorium) wroughtoni Forel
Monomorium (Parholcomyrme) destructor Jerdon
Monomorium (Xeromyrmex) salomonis indicum Forel
Monomorium monomorium Bolton
Monomorium sagei Forel
 Tribe PHEIDOLINI Emery
Messor baabarus sub sp. *himalayana* Forel
Recurvidris recurvispinosa Forel
 Tribe TETRAMORINI Emery
Tetramorium salvatum Forel
Tetramorium walshi Forel
 Subfamily FORMICINAE
 Tribe COMPONOTINI Forel
Camponotus (Tanaemyrmex) compressus Fabricius
Camponotus (Tanaemyrmex) invidus Forel
Camponotus (Orthonotomyrmex) sericeus Fabricius
Camponotus dichrous Forel
Camponotus dolendus Forel
 Tribe OECOPHYLLINI Forel
Oecophylla smaragdina Fabricius
 Tribe PRENOLEPIDINI Forel
Paratrechina longicornis Latreille
 Tribe PLAGIOLEPIDINI Forel
Acantholepis frauenfeldi Emery

Ants are polymorphic social insects having three distinct forms—the perfect and fertile female, the male and worker (major or minor). The largest forms are

soldiers. Identification of ants is mainly based on the worker caste of ants.

**IDENTIFICATION KEY IS BASED ON THE
 WORKER CASTE OF AN ANT
 KEY TO THE SUBFAMILIES OF FAMILY
 FORMICIDAE**

- I. Petiole of the abdomen one or two jointed.
 1. Opening at posterior end of gaster (acidopore) slit like.
 - A. Eyes never present, blind.
 - a. Petiole one jointed subfamily DORYLINAE
 - b. Petiole two jointed subfamily AENICTINAE
 - B. Eyes always present. Petiole one jointed subfamily DOLICHODERINAE
 2. Opening at posterior end of gaster (acidopore) terminal, circular and usually surrounded by a fringe of hairs. Petiole one jointed subfamily FORMICINAE.
- II. Petiole of the abdomen two jointed
 1. Petiole remarkably elongate, generally the anterior node is elongated petiolate, sometimes the posterior node is also petiolate, giving flexibility to the abdomen subfamily PSEUDOMYRMICINAE.
 2. Petiole not so elongate, the anterior node with a long petiole anteriorly and a short petiole posteriorly subfamily MYRMICINAE

Family FORMICIDAE

Subfamily DORYLINAE Leach

Tribe DORYLINI Forel

Genus *Dorylus* Fabricius

Dorylus (Typhlopone) labiatus Shuckard

1940. *Dorylus (Typhlopone) labiatus* Shuckard, *Ann. Mag. Nat. Hist.*, 5 : 319, Male.

Diagnostic characters : Length worker maj. 6-8 mm; worker min. 3.5. Worker (maj) : Castaneous yellow, polished smooth, shining and blind. Head rectangular, longer than its breadth, broader in front than posteriorly. No longitudinally impressed line on the head. Mandible with two teeth. Antennae worker maj. 11 and worker min. 10 jointed. Alitrunk rectangular depressed slightly constricted at the pro-mesonotal suture. Node of petiole longer than its breadth.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Chandigarh, Karnataka, Punjab, Delhi, West Bengal, Orissa, Sikkim, Manipur, Uttar Pradesh, Himachal Pradesh.

Elsewhere : Myanmar, Countries East Bay of Bengal.

Subfamily DORYLINAЕ Leach

Tribe DORYLINI Forel

Genus *Dorylus* Fabricius

Dorylus (Alaopone) orientalis Westwood

1985. *Dorylus (Alaopone) orientalis* Westwood, *Proc. Zool. Soc. Lond.*, **3** : 72, Male.

Diagnostic characters : Length worker maj. : 5.5 mm.; worker min. : 2.5-3 mm.

Worker (maj) : Castaneous brown with the abdomen generally lighter in colour than the head and alitrunk. Head rectangular occiput deeply emarginate, the head slightly wider anteriorly than posteriorly. A deeply impressed medial line present on the head. Alitrunk elongate, rounded anteriorly depressed and flat above, constricted at the pro-mesonotal suture. Node of the petiole broader than long, united with the abdomen.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, West Bengal, Uttar Pradesh, Assam, Karnataka Kerala, Tamil-Nadu, Chandigarh, Orissa, Punjab, Meghalaya, Delhi, Sikkim.

Elsewhere : Sri Lanka, Nepal, China, Malay-Peninsula, Myanmar, Indonesia.

Subfamily AENICTINAE

Tribe ECITONINI Forel

Genus *Aenictus* Shuckard Mayr

Aenictus (Aenictus) brevicornis Mayr

1878. *Aenictus (Aenictus) brevicornis* Mayr (*Typhlatta*) *Verh. zool.-bot. Ges. Wien*, **28** : 668 & 669.

1901. Forel, *J. Bombay nat. Hist. Soc.*, **13** : 446, worker.

Diagnostic Characters : Length worker : 2.5-3 mm.

Worker : Reddish yellow, head smooth and shining, thorax sculptured. Head rectangular very broad posteriorly, mandibles with three distinct teeth. Antennae very short and massive. Scape of the antennae about half length of the head. Alitrunk narrower than the head, pronotum convex smooth and shining, basal portion of the metanotum passing by a gradual curve with sloping apical portion. Nodes of petiole rounded shining. Abdomen elongate oval.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Chandigarh, Karnataka, Kerala, West Bengal, Uttar Pradesh, Meghalaya, Tamil-Nadu, Assam, N. W. Provinces.

Subfamily DOLICHODERINAE Forel

Tribe TAPINOMINI Emery

Genus *Tapinoma* Forster

Tapinoma (Micromyrma) melanocephalum Fabricius

1793. *Tapinoma (Micromyrma) melanocephalum* Fabricius, *Ent. Syst.*, **2** : 353, (*Fornica melanocephala*).

Diagnostic characters : Length worker : 1.5 mm.

Worker : Head and thorax dark brown in colour, abdomen yellowish white. Head longer than broad, oval, not emarginate, rounded posteriorly. Mandibles triangular broad with the masticatory margin equal to the outer margin and armed with minute teeth. Clypeus evenly convex, broader than 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.

Elsewhere : Spread through both the hemispheres, S. America.

Subfamily PSEUDOMYRMECINAE Emery

Tribe PSEUDOMYRMECINI Forel

Genus *Tetraponera* Smith

Tetraponera (Tetraponera) rufonigra Jerdon

1851. *Tetraponera (Tetraponera) rufonigra* Jerdon, *Madras Jour. Lit. Sc.*, **12** : 111, Worker (*Eciton rufonigrum*).

Diagnostic characters : Length worker : 12 mm.

Worker : Head, 2nd joint of petiole black, the mandibles, antennae, thorax and 1st joint of the petiole more or less red. Head rectangular, a little longer than broad and slightly narrow in front then posteriorly. Mandibles with six teeth. Clypeus transverse, narrow raised in the middle which is slightly produced, giving the anterior margin a bisinuate appearance. Antennae short and stout, 12 segmented. Ocelli present. Alitrunk elongate, the pronotum broad, its anterior lateral angles dentate, a medial, small longitudinal tubercle at its posterior margin, small longitudinal tubercle at its posterior margin, promesonotal suture arched to the front, mesonotum small flat, a deep emargination at the meso-metanotal suture. Metanotum longer than the pro and meso together. Petiole elongate, the 1st node oval with a long petiole, 2nd node conical with a short petiole.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Tripura, Chandigarh, Karnataka, Tamil Nadu, Kerala, Punjab, Haryana, Uttar Pradesh, Himachal Pradesh, Meghalaya, West Bengal, Orissa, Manipur.

Elsewhere : Myanmar, Sri Lanka, China, Singapore, Indonesia, Cambodia, Java, Sumatra.

Subfamily MYRMICINAE

Key to genera of subfamily MYRMICINAE

- A. Antennae with less than 12 joints.
- i) Antennae 11 jointed. Metanotum armed with two spines. Petiole attached to dorsal surface of abdomen *Crematogaster*
- ii) Antennae 9-jointed. Pronotum and metanotum armed with two teeth. Petiole attached to the middle of abdomen *Meranoplus*
- B. Antennae 12-jointed
- i) Clypeus bicarinate *Monomorium*
- ii) Clypeus not bicarinate *Tetramorium*

Subfamily MYRMICINAE Lepeletier

Tribe CREMATOGASTERINI Emery

Genus *Crematogaster* Lund*Crematogaster (Acrocoelia) brunnea* var. *contempta* Mayr

1878. *Crematogaster (Acrocoelia) brunnea* var. *contempta* Mayr, *Verh. zool.-bot. Ges. Wien*, **28** : 681, Worker.

Diagnostic characters : Length worker : 3.5-4 mm.

Worker : Shining chestnut red, abdomen darkening posteriorly into dark brown, the base being chestnut red. Head very highly polished and shining, very globose and strongly convex in front, thick and narrow longitudinally striate at base, the masticatory margin with generally 4 teeth. Antennae 11 jointed the club formed of the apical three joint, Alitrunk – the pronotum convex anteriorly with the lateral angles very prominent, mesonotum slightly oblique, longer than broad, meso-metanotal suture broad and very well marked, basal portion of metanotum slightly oblique, steeply sloped, metanotal spines short acute, curved a little downward and inwards and placed on the sides a little down the oblique sloping portion of the metanotum. Petiole the 1st joint widened transversely concave and with a small rounded tubercle at apex above; 2nd joint short, longitudinally furrowed, the furrow widening posteriorly. Abdomen smooth slightly shining.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, West Bengal, Uttar Pradesh, Himachal Pradesh, Chandigarh, Haryana, Punjab.

Elsewhere : Sri Lanka, Myanmar.

Subfamily MYRMICINAE Lepeletier

Tribe CREMATOGASTERINI Emery

Genus *Crematogaster* Lund*Crematogaster (Acrocoelia) rothneyi* Mayr

1878. *Crematogaster (Acrocoelia) rothneyi* Mayr, *Verh. zool.-bot. Ges. Wien*, **28** : 681, worker.

Diagnostic Characters : Length Worker–3-3.5 mm. Worker–Rufo–feruginous, abdomen fuscous brown to black, pilosity fairly abundant. Head longitudinally striate, a little longer than broad. Mandibles finely striate with 4 teeth. Antennae slender but short, the scape not quite reaching the top of the head, the club of the flagellum formed of apical three joints. Alitrunk pronotum flat above, rounded anteriorly, mesonotum slightly, concave meso-metanotal suture very distinct, basal portion of the metanotum transversely rectangular, longitudinally striate, metanotal spines very thick at base, apex directed backwards and inwards. Petiole two-jointed 1st joint broad, flat above; broader in front than posteriorly, the sides rounded, 2nd joint seen from above trituberculate on upper side, the tubercles rounded, the anterior one small, the other two larger side by side, subequal, abdomen broadly cordate.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Tamil-Nadu, Sikkim, West Bengal, Punjab, Haryana, Himachal Pradesh, Meghalaya, Orissa, Uttar Pradesh.

Subfamily MYRMICINAE Lepeletier

Tribe CREMATOGASTERINI Emery

Genus *Crematogaster* Lund*Crematogaster subnuda* Mayr

1878. *Crematogaster subnuda* Mayr *Verh. Zool.-bot. Ges. Wien*, **28** : 680 & 682, Worker.

Diagnostic characters : Length worker : 3-3.5 mm.

Worker : Dark chestnut red, abdomen darkening posteriorly to fuscous brown. Head smooth, square, angles rounded. Mandibles strong, thick and narrow, the masticatory margin with 4 teeth. Antennae 11 jointed the club formed of the apical three joint, Alitrunk–the pronotum larger, rounded in front, subangular at the sides; pro-mesonotal distinct, the mesonotum small, slightly sloping posteriorly, mesometanotal suture well marked, the basal portion of metanotum rectangular sloping posteriorly, metanotal spines short and acute. Petiole the 1st joint flat above not very wide, semicircular in front with the lateral angles obtuse, 2nd joint above longitudinally grooved forming two rounded tubercles with a transverse rounded tubercle at the apex. Abdomen broadly cordate.

Distribution : India : Uttarakhand, Gujarat, West Bengal, Uttar Pradesh, Himachal Pradesh, Chandigarh, Haryana, Punjab, Tamil-Nadu, Maharashtra, Karnataka, Assam.

Subfamily MYRMICINAE Lepeletier

Tribe CREMATOGASTERINI Emery

Genus *Crematogaster* Lund

Crematogaster (Orthocrema) walshi Forel

1902. *Crematogaster (Orthocrema) walshi* Forel, *Rev. Suisse Zool.*, **10** : 15, Worker.

Diagnostic Characters : Length Worker–3-3.5 mm. Worker: Dark piceous, smooth and shining, the basal portion of the metanotum longitudinally striate, pilosity fairly abundant and pale yellowish in colour. Head rectangular, slightly longer than broad. Mandibles longitudinally strait with 4 teeth. Antennae short and thick, the scape not extending to the posterior margin of the head, the club formed of the apical three joints, but somewhat indistinct. Alitrunk raised in front and a little compressed, pro-mesonotal suture obsolete, meso-pro-mesonotal suture deep. Basal portion of metanotum sculptured, metanotal spines very short, triangular, not divergent. Petiole two jointed 1st joint slightly broadened, flat anteriorly and narrowed posteriorly, 2nd joint with a rounded, slightly raised node divided longitudinally by a broad groove. Abdomen short and broad.

Distribution : India : Uttarakhand, Rajasthan, Chandigarh, Punjab, Haryana, Uttar Pradesh, Meghalaya, Orissa, Sikkim, Himachal Pradesh, West Bengal.

Subfamily MYRMICINAE Lepeletier

Tribe MERANOPLINI Emery

Genus *Meranoplus* Fred Smith

Meranoplus bicolor Guerin

1845. *Meranoplus bicolor* Guerin, *Inconogr Regne Anim Insect.* **7** : 425 (*Cryptocerus*).

Diagnostic Characters : Length worker : 4-5 mm.

Worker : Head, alitrunk, legs and petiole of the abdomen bright ferruginous red. Abdomen black. Pilosity very long, soft, abundant and of a grey colour. Head a little longer than broad, broader posteriorly than the front. Mandibles narrow armed with 4 teeth. Clypeus convex in the middle, inclined downwards. Alitrunk–the pro-mesonotal shield about as broad as long, with the anterior angles prominent and acute, the sides posteriorly with a small incision and beyond that produced, backwards into a long laminate spine on each side overhanging the metanotum, the latter, vertical, slightly convex with a carina on each side ending above in an acute spine, Petiole the 1st node smooth, triangular 2nd node globose, Abdomen cordate.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Manipur, Tripura, Chandigarh, Karnataka, Kerala, Tamil Nadu, Punjab, West Bengal, Delhi, Orissa, Uttar Pradesh.

Elsewhere : Nepal, Myanmar, Indonesia, Sri Lanka, Pakistan, Bhutan, Thailand, China, Singapore, Malaysia.

Subfamily MYRMICINAE Lepeletier

Tribe SOLENOPSISINI Forel

Genus *Monomorium* Mayr

Monomorium (Monomorium) pharaonis Linne

1758. *Monomorium (Monomorium) pharaonis* Linne, *Syst. Nat.*, **1** : 586, Worker.

Diagnostic characters : Length worker : 2.5-3 mm.

Worker : Reddish yellow, posterior two thirds of the abdomen black, shining. Head half as long again as broad, the sides slightly convex; the posterior margin transverse. Mandibles narrow, linear, slightly broadened at the masticatory margin with 3-4 teeth. Antennae long and thick, scape reaching nearly up to posterior margin of the head. Alitrunk–pro-mesonotum convex rounded in front and at the sides narrowing posteriorly, mesometanotal suture very distinct, slightly emarginate, metanotum seen from above rectangular, somewhat flat, the posterior lateral angles of the basal portion scarcely tuberculate. Petiole 1st node little thick and rounded at the top, anteriorly with a long petiole, 2nd node from above globose, slightly broader than long and broader than the 1st node. Abdomen oval, truncate anteriorly.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Punjab, Haryana, West Bengal, Uttar Pradesh, Himachal Pradesh, Meghalaya.

Elsewhere : Spread over the tropical region of both the hemispheres.

Subfamily MYRMICINAE Lepeletier

Tribe SOLENOPSISINI Forel

Genus *Monomorium* Mayr

Monomorium (Monomorium) wroughtoni Forel

1902. *Monomorium (Monomorium) wroughtoni* Forel, *Rev. Suisse Zool.*, **10** : 209, Worker.

Diagnostic characters : Length worker : 2.0 mm.

Worker : Blackish brown with the abdomen dark brown. Abdomen opaque except at the base which is smooth and shining. Head longer than broad, narrow posteriorly, slightly emarginate Mandibles narrow armed with 4 teeth. Antennae moderately long, the scape nearly reaching the top of the head. Alitrunk depressed sub-margined, the meso-metanotal suture distinct, basal portion of metanotum rectangular, apex truncate. Petiole

1st node conical, rounded above, anteriorly petiolate, the petiole thickening and sloping posteriorly, 2nd node globose, broader than the 1st node. Abdomen broadly oval, truncate anteriorly, acute posteriorly.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Punjab, Haryana, Himachal Pradesh, Uttar Pradesh, Karnataka.

Subfamily MYRMICINAE

Tribe SOLENOPSIDINI Forel

Genus *Monomorium* Mayr

Monomorium (Parholcomymex) destructor Jerdon

1851. *Monomorium (Parholcomymex) destructor* Jerdon, *Madras Jour. Lit. Sc.*, **17** : 105, Worker (*Atta*).

Diagnostic Characters : Length worker : 1.8-2.3 mm.

Worker : Reddish yellow, apical three-fourth of abdomen from chestnut brown to dark brown. Head rectangular, slightly emarginate posteriorly. Mandibles narrow armed with 4 teeth; the apical longest and acute. Antennae 12 jointed, the scape just reaching the top of the head. Alitrunk-elongate anteriorly as broad as the back of the head, the pro-metanotum convex, meso-metanotal suture deeply impressed, basal portion of metanotum narrow passing by the rounded curve into the apical portion. Petiole elongate the 1st node squamiform, anteriorly petiolate 2nd node globose, a little broader than long, not as high as the 1st node. Abdomen oval.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Punjab, Haryana, Himachal Pradesh, Uttar Pradesh, West Bengal, Karnataka.

Elsewhere : Torrid regions of both hemispheres.

Subfamily MYRMICINAE

Tribe SOLENOPSIDINI Forel

Genus *Monomorium* Mayr

Monomorium (Xeromyrmex) salomonis indicum Forel

1902. *Monomorium salomonis* Linn., *race indicum* Forel *Rev. Suisse Zool.*, **10** : 213.

Diagnostic Characters : Length worker : 3-3.5 mm.

Worker : Ferruginous red with abdomen dark brown. Head opaque almost as broad as long, broader anteriorly than posteriorly. Mandibles narrow with three to four teeth, when closed partially concealed under the projecting margin of the clypeus. Antennae moderately long, the scape not quite reaching the posterior margin of the clypeus. Alitrunk anteriorly rounded, moderately broad, the meso-metanotal suture distinct, the basal portion of the metanotum broadening posteriorly, Petiole

the nodes seen from above equal. The rounded 1st node higher than and 2nd node and petiolate anteriorly. Abdomen oval.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Chandigarh, Karnataka, Punjab, West Bengal, Andhra Pradesh, Tamil Nadu.

Elsewhere : Myanmar.

Subfamily MYRMICINAE Lepeletier

Tribe SOLENOPSIDINI Forel

Genus *Monomorium* Mayr

Monomorium monomorium Bolton

1995. *Monomorium monomorium* Bolton, *A New Genl. Cat. Ants World.*, : 264.

Diagnostic Characters : Length worker : 1.5 - 2 mm.

Worker : Head and alitrunk dark brown, abdomen black, smooth, polished and shining; pilosity very sparse. Head rectangular, posteriorly transverse. Mandibles narrow with 4 teeth on masticatory margin. Clypeus very convex, anteriorly rounded. Scape of antennae 12-segmented nearly reaching upto the top of the head; eyes comparatively large, placed in the middle of the head. Pro-mesonotum convex; meso-metanotal suture distinct and emarginate; metanotum compressed, basal portion rectangular, apical portion truncate. Petiole rounded, 2nd node broader than long. Abdomen oval.

India : Uttarakhand, Karnataka, West Bengal.

Elsewhere : Africa, North America, Southern Europe.

Subfamily MYRMICINAE Lepeletier

Tribe SOLENOPSIDINI Forel

Genus *Monomorium* Mayr

Monomorium sagei Forel

1902. *Monomorium sagei* Forel, *Rev. Suisse Zool.*, **X** : 211.

Diagnostic characters : Length Worker 2.2-2.5mm. Pale yellow, smooth and shining. Mandible narrow with four acute teeth, Antennae 12-jointed, scape extending beyond the top of head, flagellum with a distinct club. Alitrunk convex above, not submargined, thorax seen in profile deeply emarginate at the meso-metanotal suture. Petiole—the 1st node squamiform, anteriorly petiolate, 2nd node from above circular, smoothly rounded a little broader in front than posteriorly, abdomen more than twice as long as broad.

Distribution : India : Uttarakhand, Rajasthan, Karnataka, North-West Himalayas.

Subfamily MYRMICINAE Lepeletier

Tribe PHEIDOLINI Emery

Genus *Messor* Forel

***Messor barbarus* subsp. *himalayana* Forel**

1902. *Messor barbarus* subsp. *himalayana* Forel, *Rev. Suisse Zool.*, **10** : 220, Worker, Female, Male (*Stenamma*).

Diagnostic characters : Length : Worker-4-10 mm.

Worker : Black shining, the mandibles reddish brown, the flagellum of the antennae and legs castaneous, the scape brown. Head without the mandibles square longitudinally striate, masticatory margin of mandibles dentate. Alitrunk narrower than the head, the posterior lateral angles of the metanotum dentate, 1st node of the petiole conical, rounded above with a long petiole anteriorly, 2nd node broader, rounded above, about as broad as its length. Abdomen oval.

Distribution : India : Uttarakhand, Rajasthan Punjab, Chandigarh, N.W. Himalayas, Himachal Pradesh.

Subfamily MYRMICINAE Lepeletier

Tribe CARINI Emery

Genus *Recurvidris recurvispinosa* (Forel)

***Recurvidris recurvispinosa* (Forel)**

1890. *Trigonogaster recurvispinosa* Forel, *Ann. Soc. Ent. Belg., C.R.*, **34** : 109 Worker.

1992. *Recurvidris recurvispinosa* Bolton, *Psyche*, **99** : 46.

Diagnostic characters : Length Worker 2.2-2.5 mm.

Worker : Orange yellow, eyes black, mandibles brown; pubescence almost absent; erect sparse hairs on head, alitrunk and abdomen. Head elongate, rectangular, anteriorly truncate; narrow mandibles with 4 teeth; vertical clypeus medially bicardinate, anterior margin complete and arched. Antennae 11-segmented, scape extending up to the top of head. Alitrunk elongate, broad anteriorly. Pro-mesonotum forming a single convexity; pro-mesonotal suture absent; meso-metanotal suture deep, emarginate; metanotum dorsally flat, strong spines curved upwards and forwards from their bases. Petiole with long peduncle in front with an acute ventral spine, 1st node low and conical, 2nd node reduced, shallow in profile. Basal segment of the abdomen dorsally flat, strongly convex ventrally.

Distribution : India : Uttarakhand, West Bengal, Karnataka, Tamil Nadu Assam, Kerala.

Elsewhere : China, Hongkong, Japan, Myanmar, Nepal.

Subfamily MYRMICINAE Lepeletier

Tribe TETRAMORINI Emery

Genus *Tetramorium* Mayr

***Tetramorium salvatum* Forel**

1902. *Tetramorium salvatum* Forel, *Rev. Suisse Zool.*, **10** : 235, Worker.

Diagnostic characters : Length : 2.3-2.4 mm.

Worker : Reddish yellow in colour, abdomen dark brown Head rectangular, a little broader posteriorly than in front, the sides convex. Mandibles armed with 7 teeth. The eyes are large and more convex., Antennae 11 jointed. Alitrunk-Pronotum broad anteriorly, not emarginate at the meso-metanotal suture. Metanotal spines as long as about two-thirds of the space between them. First node of petiole as broad as long, second node narrowed anteriorly, broadened posteriorly. Abdomen convex.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Western India, N. W. Himalayas.

Subfamily MYRMICINAE Lepeletier

Tribe TETRAMORINI Emery

Genus *Tetramorium* Forel

***Tetramorium walshi* Forel**

1890. *Triglyphotherix walshi* Forel, *Ann. Soc. Ent. Belg.*, **34** : 107, Worker, Female.

Diagnostic characters : Length Worker 2.2-2.5 mm.

Worker : Dull brown, abdomen black. Pilosity very dense and woolly, whitish in colour and somewhat concealing the sculpture. Head narrowed anteriorly. Posterior margin of clypeus produced between the basis of antennae. Mandibles broad with 5-7 teeth. Antennae 12-jointed, short, the scape not reaching the top of the head. Thorax short and broad, curved and convex above, pronotum unarmed, the metanotal spine sub-triangular and acute at apex pointing obliquely back, Erect hairs on body trifid. First node of pedicel distinctly transverse, much broader than long. Petiole of 1st node nearly as long as node.

Distribution : India : Uttarakhand, Rajasthan, Karnataka, Kerala, Tamil Nadu, Meghalaya, Arunachal Pradesh, Orissa, West Bengal, Himachal Pradesh.

Elsewhere : Sri Lanka.

Subfamily FORMICINAE

Key to genera of subfamily FORMICINAE

A. Antennae 12 jointed.

A(i) Maxillary pulpi 6 jointed.

1. Antennae inserted at perceptible distance from posterior margin of clypeus.

i) Alitrunk and node of petiole not spinous, basal two abdominal segment equal in length
..... **Camponotus**

2. Antennae inserted immediately above posterior margin of clypeus, almost touching it.

i) Antennal and clypeus hollows not confluent, distinct **Paratrechina**

a A(ii)Antennae 12 jointed, maxillary palpi 5 jointed
Oecophylla

B. Antennae 11 jointed, maxillary palpi 6 jointed.

i) **Acantholepis**

Subfamily FORMICINAE Lepeletier

Tribe CAMPONOTINI Forel

Genus **Camponotus** Mayr

Camponotus (Tanaemyrmex) compressus Fabricius

1787. *Camponotus (Tanaemyrmex) compressus* Fabricius, *Mant. Insect.*, **1** : 307, Worker, (*Formica*).

Diagnostic characters : Length worker : 13 mm

Worker : Black opaque. Head sub triangular, very broad posteriorly. Mandibles triangular with seven teeth. Clypeus medially vertically carinate. Alitrunk narrower than the head, anteriorly produced into a collar. Node of the petiole oval, transverse convex in front, flat posteriorly. Tibia of the legs prismatic. Abdomen broad and massive.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Tripura, Andamans, Chandigarh, Karnataka, Tamil Nadu, Assam, West Bengal, Meghalaya, Punjab, Orissa, Sikkim, Manipur.

Elsewhere : Sri Lanka, Myanmar, Russia, Arabia, Africa, Borneo, Philippines, Nepal, Malayan subregion.

Subfamily FORMICINAE Lepeletier

Tribe CAMPONOTINI Forel

Genus **Camponotus** Mayr

Camponotus (Tanaemyrmex) invidus Forel

1892. *Camponotus (Tanacemyrmex) invidus* Forel, *J. Bombay nat. Hist. Soc.*, **7** : 235, fig.2, Worker, Soldier.

Diagnostic Characters : Length worker : 5-6 m.m.

Worker :- Head, alitrunk and abdomen entirely pale yellow with sparse erect yellowish pubescent. 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.

Subfamily FORMICINAE Lepeletier

Tribe CAMPONOTINI Forel

Genus **Camponotus** Mayr

Camponotus (Orthonotomyrmex) sericeus Fabricius

1798. *Camponotus (Orthonotomyrmex) sericeus* Fabricius, *Suppl. Ent. Syst.*, : 279, Worker (*Formica*).

Diagnostic characters : Length worker maj. 10 mm.

Worker : Black with the head blood red in colour. Abdomen with a dense silky golden pubescence hiding the sculpture. Head very broad, emarginate posteriorly, mandibles with 5 teeth. The anterior border of clypeus emarginate in the middle. Alitrunk broad in front, strongly compressed posteriorly, emarginate at the meso-metanotal suture, the basal face of the metanotum horizontal, flat the sides margined posterior face excavate. Node of petiole rounded knob like. Abdomen very broad globose.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Chandigarh, Karnataka, Tamil Nadu, West Bengal, Meghalaya, Punjab, Orissa, Manipur, Delhi.

Elsewhere : Myanmar, Sri Lanka, Africa, Arabia, Egypt, Indo-China.

Subfamily FORMICINAE Lepeletier

Tribe CAMPONOTINI Forel

Genus **Camponotus** Mayr

Camponotus dichrous Forel

1897. *Camponotus dichrous* Forel, *Bull. Soc. Vaud. Sc. Nat.*, **16** : 63. Worker.

Diagnostic Characters : Worker : 9-11 mm.

Worker : Head and 3rd and following segments of the abdomen pitch-black, basal two segments yellow, the alitrunk brown. Head triangular, much broader posteriorly than in front, the lateral occipital angles very prominent, mandibles with teeth, clypeus carinate with a median anteriorly produced rectangular lobe. Scape of antennae cylindrical. Tibia compressed and spined beneath. Alitrunk anteriorly narrowed into a collar, seen from side forming a regular arch. Petiole one jointed and node of petiole convex in front, flat posteriorly. Abdomen oval not broader than the head.

Distribution : India : Uttarakhand, Rajasthan, Punjab, Uttar Pradesh, West Bengal, Himalayas.

Subfamily FORMICINAE Lepeletier

Tribe CAMPONOTINI Forel

Genus *Camponotus* Mayr

Camponotus dolendus Forel

1892. *Camponotus rufoglaucus* (Jerdon) race *dolendus* Forel, *J. Bombay nat. Hist. Soc.*, 7 : 227 & 238, Worker.

Diagnostic Characters : Worker : 7-9 mm.

Worker : Black, mandibles, antennae, legs and posterior margins of abdominal segments testaceous; pubescence entirely wanting. Head subtriangular, sides convex; carinate clypeus with median lobe distinctly rectangularly produced. Mandibles with 7 teeth. Alitrunk short and broad; legs with tibiae compressed and with scattered spines on undersides. Petiole broad and flat with silky pilosity. Abdomen broadly oval.

Distribution : India : Uttarakhand, North West Himalayas, Tamil Nadu, Sikkim, Andaman and Nicobar Islands, West Bengal.

Subfamily FORMICINAE Lepeletier

Tribe OECOPHYLLINI Forel

Genus *Oecophylla* Smith

Oecophylla smaragdina Fabricius

1793. *Oecophylla smaragdina* Fabricius, *Hafniae Ent. Syst.* 3 : 350, Worker.

Diagnostic characters : Length worker maj. 9.5-11 mm. Worker min. 7-8 mm.

Worker : Rusty red. Head of maj. and min relatively the same size, roundly quadrangular, posteriorly not emarginate and slightly broader than in front. Mandibles long with masticatory margin very broad in proportion to length, dentate, the apical tooth acute and curved, clypeus strongly convex about two third as high as broad, its anterior margin strongly arched. Antennae 12-jointed, originating from the anterior margin of the clypeus. Alitrunk elongate, pronotum convex, anteriorly narrowed into a collar, mesonotum constricted, narrow, saddle shaped. Metanotum rounded above, gibbous. Petiole elongate, incrassate in the middle scarcely nodiform. Abdomen short oval.

Distribution : India : Uttarakhand, Rajasthan, Gujarat, Maharashtra, Uttar Pradesh, Sikkim, Uttranchal, Assam, Chandigarh, Meghalaya, Orissa, Tamil Nadu, Karnataka, Kerala, Andamans, N.W. Himalayas.

Elsewhere : Myanmar, Sri Lanka, S. China, Malaya, New Guinea, Australia, Java.

Subfamily FORMICINAE Lepeletier

Tribe PRENOLEPIDINI Forel

Genus *Paratrechina* Motschoulsky

Paratrechina longicornis Latreille

1802. *Nylanderia longicornis* Latreille, *Hist. Nat. Fourmis* : 113, (*Formica longicornis*).

Diagnostic characters : Length : Worker : 2.5-3 mm. Dull coppery brown in colour, with fairly abundant, long, erect, somewhat coarse hairs. Head oval as broad in front as posteriorly. Mandible small with 5-6 teeth. Antennae 12 jointed, scape of antennae remarkably long, extending beyond the top of the head by more than half its length. Alitrunk elongate, rounded above viewed from side lightly emarginate at the mesonotum, not constricted at the mesometanotal suture. Node of the petiole not so broad as high. Abdomen anteriorly gibbous oval and massive.

Distribution : India : Uttarakhand, Rajasthan, Western India, Maharashtra, Orissa, West Bengal, Uttar Pradesh, Tamil Nadu.

Elsewhere : All tropical countries (Europe).

Subfamily FORMICINAE Lepeletier

Tribe PLAGIOLEPIDINI Forel

Genus *Acantholepis* Mayr

Acantholepis frauenfeldi Emery

1925. *Acantholepis frauenfeldi* Emery, *C. Gen. Insect. Fasc.*, 183 : 23, 25.

Diagnostic Characters : Length worker : 3.5 mm.

Worker : Head brown, mandibles, antennae thorax, legs and node of petiole brownish yellow abdomen dark brown, Head distinctly longer than broad, rounded above, mandibles narrow, curved with the apical tooth long and acute, clypeus strongly convex. Scape of antennae remarkably long extending for more than half its length beyond the top of the head. Alitrunk the pronotum in front above appears circular, the mesonotum strongly constricted in front forming a cylindrical neck, widening posteriorly, the metanotal teeth thick and broad at base, the meso-metanotal suture deep and distinct. Node of petiole pentagonal the upper border slightly emarginate. Abdomen oval.

Distribution : India : Uttarakhand, Rajasthan, Maharashtra, Chandigarh, Punjab, Andhra Pradesh, Meghalaya, West Bengal, Karnataka.

Elsewhere : Southern Europe, N. Africa.

SUMMARY

The manuscript deals with 28 ant species distributed under 13 genera of the family Formicidae. The family

comprises 6 sub-families namely Dorylinae with 1 genera and 2 species. Aenictinae with 1 genera and 1 species. Dolichoderinae with 1 genera and 1 species. Pseudomyrmecinae with 1 genera and 1 species. Myrmecinae with 5 genera and 15 species and Formicinae with 4 genera and 8 species.

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