

## THREE NEW SPECIES OF *MYRMELEONOSTENUS* UCHIDA FROM INDIA (HYMENOPTERA : ICHNEUMONIDAE)

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### INTRODUCTION

The genus *Myrmeleonostenus* Uchida belongs to the tribe Ischnini of the subfamily Mesosteninae, family Ichneumonidae. It contains small to medium sized species with moderately stout body, measuring 4.5 to 11 mm in length.

This genus is known to occur in Indo-papuan and southern part of Palaearctic Region. Townes (1970 : 196) referred to this genus 3 species viz., *Myrmeleonostenus babai* Uchida and *M. secundus* Momi from Japan, and *Cryptus italicus* Gravenhorst from Europe and Siberia.

This genus is recorded here for the first time from India. Three new species are described here from India (Bihar, Himachal Pradesh, Jammu & Kashmir, Maharashtra and Uttar Pradesh).

### SYSTEMATIC ACCOUNT

#### Genus *Myrmeleonostenus* Uchida

1936 *Myrmeleonostenus* Uchida *Insecta Matsumurana*, 10 : 116. Type species : *Myrmeleonostenus babai* Uchida. Original designation.

1970 *Myrmeleonostenus* Uchida : Townes, *Mem. Amer. Ent. Inst.*, 12 : 196. syn.

Body of moderate proportions, with stout thorax and first tergite moderately long and slender. Clypeus moderately small, about 2-4x as wide as long, with a subpyramidal convexity at centre, its apex convex or subtruncate, without a median tooth. Malarspace about 1.8x as long as basal width of mandible. Mandibles short and wide, its lower tooth a little shorter than upper tooth. Mesoscutum polished with small dense and deep punctures; notauli reaching up to the center of mesoscutum. Propodeal spiracle usually long and slit-like, atleast 2x as long as wide, apical carina of propodeum complete, moderately strong, sublaterally forming weak crests. Hind coxa without a groove at base on its basal or outer side. First tergite usually long and slender, sometimes short and stout, with or without a tooth at base, with 3 pairs of longitudinal carinae, these may be obsolete or obsolescent on postpetiole. First sternite opposite to spiracle or

extending more than 0.5 the distance between spiracle and apex. Second tergite mat to polished, its punctures small or fine, rather dense. Wing venation as figure (1a,b). Ovipositor sheath about 1.0x as long as hind tibia, ovipositor weakly compressed (Fig. 1c).

*Length* 6.5-11 mm. Fore wing 4.5-8.5 mm. Ovipositor sheath 3.5-4.5 mm.

*Type species* *Myrmeleonostenus babai* Uchida.

*Host* Myrmeleontidae.

The Indian species can be distinguished by the following key :

#### Key to the Species of *Myrmeleonostenus*

1. First tergite about 3.5x as long as wide at apex. Postpetiole 2x as long as wide at base. First tergite without lateral tooth at base. First sternite extending 0.5 the distance between spiracle and apex. (Two small elongate mark on mesoscutum, yellow; mesopleurum wholly black. Propodeum with an inverted V-shaped mark. First tergite and legs in general, red). ..... 1. *longipetiolatus*, sp. nov.
- First tergite about 2.5x as long as wide at apex. Postpetiole 1.6x as long as wide at base. first tergite with or without a weak lateral tooth or angulation at base. First sternite extending less than 0.4 the distance between spiracle and apex..... 2
2. Face sublaterally rugoso-punctate. Malarspace about 1x the basal width of mandible. First tergite laterally smooth and shiny, except for a few weak punctures. Nervulus distad of basal vein. Face entirely yellow. Mesopleurum, metapleurum, propodeum and first segment largely red..... 2. *flavomaculatus*, sp. nov.
- Face uniformly densely punctate. Malarspace 0.75x the basal with of mandible. First tergite laterally with transverse ridges at base. Nervulus opposite to basal vein. Face black, marked with yellow. Mesoscutum with a median oval yellow mark. Mesopleurum, metapleurum, propodeum and first tergite largely, black. .... 3. *nigrimaculatus*, sp. nov.

#### 1. *Myrmeleonostenus longipetiolatus*, sp. nov.

This is a distinct species having first tergite about 3.5x as long as wide at base, postpetiole 2x as long as wide at base, without lateral tooth at base. Mesopleurum wholly black and legs in general red.

*Female* : Face mat, with small dense punctures in the middle, at sides punctures weak and not well defined. Clypeus subpolished with closely placed punctures at its basal half, apical half smooth and shiny, except for a few scattered punctures. Mandible with minute dense punctures. Malarspace granulose about 0.75x the basal width of mandible. Frons subpolished, in the middle with small dense punctures, punctures running into rugosities, at sides along the eye margin largely smooth, a short shallow median groove present extending from the median ocellus. Vertex and temple subpolished with moderate sized and deep punctures, interspaces more than their our

diameter, punctures in ocellar triangle dense. Pronotum in the groove and below strongly transverse, its upper margin strongly and deeply punctate, pronotal collar with minute, sparse and weak punctures, epomia short, but strong. Scutellum shiny, with coarse shallow and moderately spaced punctures; lateral carina extending at its basal 0.2. Metascutellum smooth and polished. Mesopleurum largely ruguloso-wrinkled, area between subtegular ridge to speculum with deep, moderately large coalescent punctures, punctures running into striations. Mesosternum and area above sternaulus with small dense punctures, prepectal carina extending 0.7 the height of mesopleurum. Metapleurum rugoso-wrinkled, juxtaaxial carina present. Propodeum apical of apical carina moderately strongly wrinkled, between apical and basal carina with strong oblique ridges, basal of basal carina with small, deep and dense punctures. First tergite about 3.5x as long as wide at apex, tergite largely smooth and subpolished, except distinctly punctate at apex, tergite without lateral tooth, postpetiole about 2.0x as long as wide at base, sternum extending about 0.5 the distance between spiracle and base, second tergite mat, with fine dense punctures, following tergites mat and subpolished. fore wing with nervulus opposite to basal vein and strongly reclivous, areolet large, about as high as wide, nervellus in hind wing intercepted at its lower 0.2, axillul vein straight, parallel to wing margin.

**Black.** 5th-10th flagellar segments white above. The following are yellow : Face with an oval mark in the middle, orbital stripe all along the eye margin on face and frons (Fig. 1d), clypeus except the apical region, temple along the eye margin, pronotal collar, an oval mark at the upper margin, two small elongated mark in the middle of mesoscutum, scutellum, metapleurum, an inverted V-shaped mark on propodeum (Fig. 1e,f), apices of all the abdominal tergites. First tergite and legs in general red, except all the coxae with yellow marks, apex and base of hind tibia, middle and hind tarsus almost wholly brown to dark brown, wings clear hyaline.

**Male :** Essentially similar to female, except more slender and finely sculptured. Face, clypeus and frons with small, close to dense punctures, punctures on frons running into striations. Vertex and temple weakly punctate. Mesopleurum striato-wrinkled in the middle. Metascutellum shallowly punctate. Second tergite mat and dull with fine setiferous punctures (abdomen beyond 3rd tergite broken).

**Black.** Antennae without band. Face and clypeus wholly, frons and temple along the eye margin, yellow; rest of markings on thorax similar to female, except that the mark on metapleurum and propodeum much broad. First tergite black, fore and middle coxae and trochanters entirely yellow; all femora reddish; all tibiae and fore tarsus, yellowish-brown, except hind tibia broadly at apex and narrowly at base, dark brown; hind tarsus wholly and apical segment of fore and middle tarsus brown; abdominal tergites with usual apical yellow bands.

**Length :** Female, 6.5-10 mm. Fore wing 4.5-7.5 mm. Ovipositor sheath 3.5-4 mm. Male, about 8 mm. fore wing 6 mm.

**Holotype Female and Allotype Male, INDIA : UTTAR PRADESH :** Garjia, 610m, 26-29.iv.1969 and 22.iv.1967, V.K. Gupta, Nos. 268 & 335. **Paratypes** 9 Females, 1 Male. **INDIA : ASSAM :** Rangapara, Sonajuli Tea Estate, 1 M, 24.iv.1965. D. Ram, No. T198. **UTTAR PRADESH :** Gargia 610m, 2 F, 26-29.iv.1969, V.K. Gupta, No. 335; 1 F, 5.iv.1965, J.K. Jonathan, No. J1 (this female in A.E.I., Florida); Harbertpur, 1 F, 14.iv.1967, Tek Chand, No. J214; Dehra Dun, New Forest, 1 F,

15.vi.1962, V.K. Gupta, No. 13. HIMACHAL PRADESH Dharmshala, 1700 m (formerly in Punjab), 1 F, 12.vi.1963, V.K. Gupta. KARNATAKA Anmod, 600 m, 1 F, 27.xi.1965, M.K. Kamath, No. K50. BIHAR Namkum nr. Ranchi, 1 F, 3.i.1956, V.K. Gupta. MAHARASHTRA : Nechal, Satara dist. in Western Ghats, 1 F, 30.iv.1912, F.H. Gravely (Cameron in 1946, det. as *Etha rufopetiolata* Cameron) (Z.S.I., Calcutta).

*Distribution* India : Assam, Bihar, Himachal Pradesh, Karnataka, Maharashtra and Uttar Pradesh.

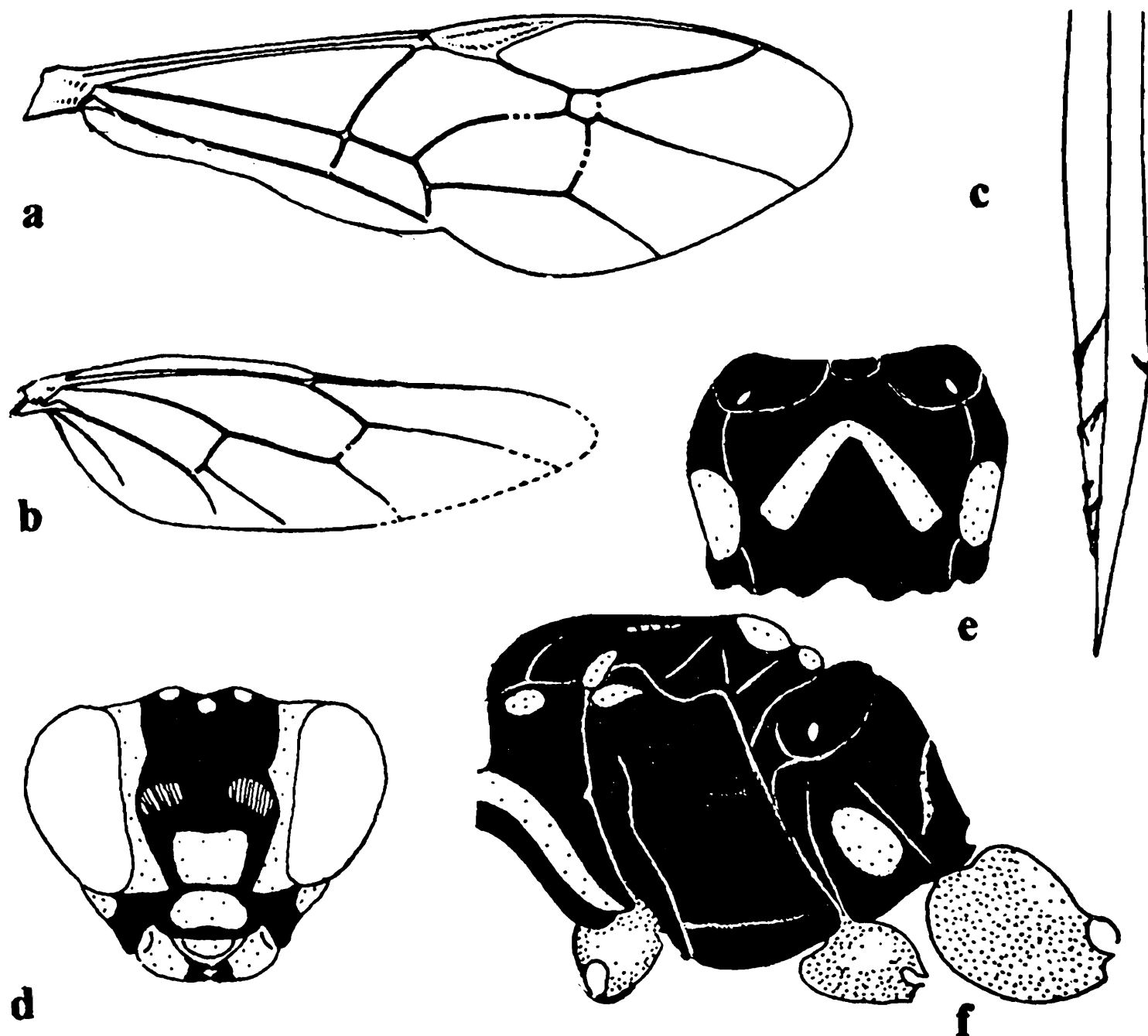


Fig. 1. *Myrmeleonostenus* Uchida a, b, fore and hind wings showing venation; c, ovipositor tip. *Myrmeleonostenus longipetiolatus*, sp. nov. : colour pattern d, front view of head; e, dorsal view of propodeum; f, side view of thorax.

## 2. *Myrmeleonostenus flavomaculatus*, sp. nov.

This species is close to *M. nigrimaculatus*, sp. nov. by having first abdominal tergite about 2.5x as long as wide at apex and first sternite extending less than 0.4x the distance between spiracle and apex. It is readily distinguished by having face rugoso-punctate, face entirely yellow; mesopleurum, metapleurum, propodeum and first abdominal segment largely, red.

**Female** : Face subpolished, with small sized, dense, shallow punctures. Clypeus subpolished, its basal half with small, close to sparse shallow punctures, at apex smooth and shiny. Malarspace granulate, about 1.0x the basal width of mandible. Base of mandible with indistinct punctures. Frons subpolished, having moderate sized, deep and closely placed punctures, punctures in the middle dense and running into wrinkles, median longitudinal groove short and shallow. Vertex and temple with moderate sized and closely spaced punctures. Pronotum subpolished, scrobe with strong trans-wrinkles, pronotum above with moderately large, deep and dense punctures, punctures running into wrinkles, pronotal collar weakly striato-punctate, epomia short and not defined due to wrinkles. Scutellum subpolished, coarsely and shallowly punctate, punctures close at apex, sparse at base, lateral carina extending about 0.5 its lengths. Metascutellum with a few shallow punctures. Mesopleurum along the oblique line drawn from the subtegular ridge to middle coxa finely rugose, subtegular ridge, and area below the ridge, specular area above sternaulus in front and sternum with small punctures, punctures dense and forming fine wrinkles, prepectal carina extending 0.75x the height of mesopleurum. Metapleurum rugose, juxtacoxal carina not defined. Propodeum subpolished, between basal carina and apex finely wrinkled, basal of basal carina with small deep punctures, punctures at sides near spiracles dense, basal carina sublaterally obsolescent. First tergite about 2.5x as long as wide at apex, at base with triangular lateral tooth, tergite shiny its postpetiolar area with closely spaced punctures, postpetiole about 1.6x as long as wide at base, sternite extending less than 0.4 the distance between spiracle and apex. Second and third tergites mat with small and close punctures, fourth tergite mat with setiferous punctures, following mat and sub polished. Fore wing with nervulus little apicad of basal vein, vertical. Nervellus intercepted at its lower 0.25, axilus parallel, its tip curved towards the margin.

Black. 2nd to 13th flagellar segments white above. The following are yellow : Scape, face, clypeus, mandible except the teeth, malarspace, frons, vertex, temple along the eye margin, pronotal collar and upper margin of pronotum broadly, two elongated lines on mesoscutum, scutellum, metascutellum, tegula, subtegular ridge, mesopleurum with a broad mark above sternaulus in front, a small mark just near the base of middle coxa, propodeum with two hemispherical marks sublaterally, apices of all the abdominal tergites (Fig. 2 a,b,c). Mesopleurum above including speculum, metapleurum largely, propodeum between apical carina and base laterally and first tergite, red. Legs in general also red. fore and middle coxae and trochanters yellow, except first segment of trochanters with a brown line above; hind tibia yellowish-brown, darker at apex and base, hind tarsus white except its fifth segment. Wings clear with brownish tinge.

**Male** : Unknown.

**Length** : Female, 8mm; fore wing 6.5 mm; ovipositor sheath 2.8mm.

**Holotype** Female, INDIA : UTTAR PRADESH : Barkot, 1143m, 23.v.1967, J.K. Jonathan, No. J224 (Z.S.I., Calcutta).

**Distribution** India : Uttar Pradesh.

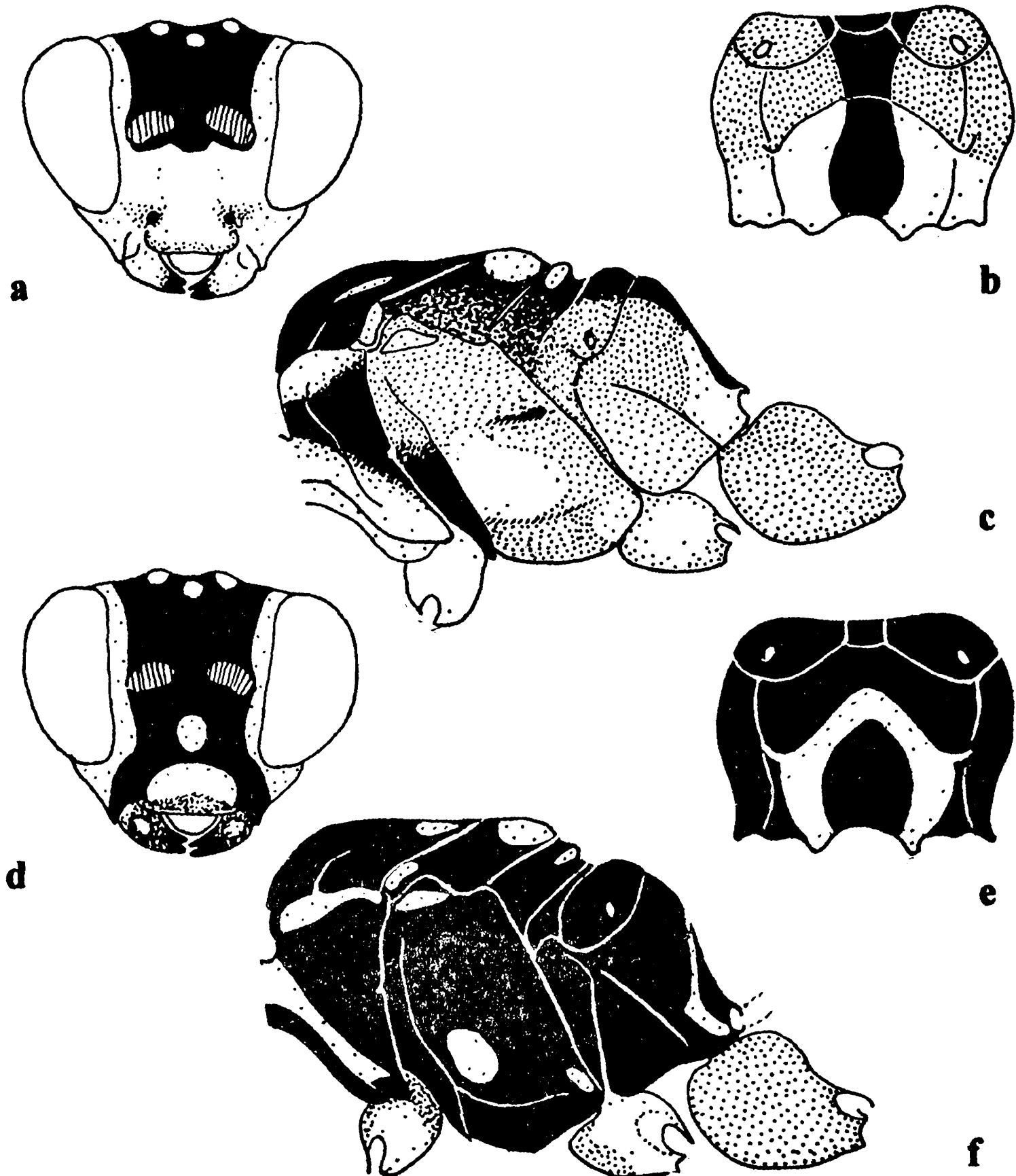


Fig. 2. *Myrmeleonostenus flavomaculatus*, sp. nov. colour pattern : a, front view of head; b, dorsal view of propodeum; c, side view of thorax. *Myrmeleonostenus nigrimaculatus*, sp. nov.: colour pattern : d, front view of head; e, dorsal view of propodeum; f, side view of thorax.

### 3. *Myrmeleonostenus nigrimaculatus*, sp. Nov.

This species is close to *M. flavomaculatus*, sp. nov. by having first tergite about 2.5x as long as wide at apex, postpetiole about 1.5x as long as wide at base and first sternite extending less than 0.4 the distance between spiracle and apex.

This species is distinguished by having face densely punctate, malarspace 0.75x the basal width of mandible; first tergite laterally with transverse ridges and base of tergite with or without basal lateral angulation or weak tooth.

*Female* : Face with small sized punctures, punctures in the middle closely placed, rugoso-punctate sublaterally, along the eye margin mat with sparse, shallow punctures. Clypeus subpolished, with small and sparsely placed punctures. Mandible sparsely and shallowly punctate, malarspace granulose, about 0.75x the basal width of mandible. Frons with moderate sized closely placed punctures, punctures in the middle dense and running into wrinkles, median groove not defined. Vertex and temple with moderately sized, deep and close punctures. Pronotum in its lower 0.6 strongly trans-wrinkled, its upper 0.4 densely punctate, epomia short but strong. Scutellum subpolished, coarsely and shallowly punctate, lateral carina more or less confined to its base. Metascutellum shiny with a few weak punctures. Mesopleurum moderately strongly rugose, speculum rugoso-punctate, meso-sternum and area above sternaulus with small dense punctures, subtegular ridge and area just below it finely punctate, Metapleurum rugoso-wrinkled, juxtacoxal carina present. Propodeum between basal carina and apex reticulo-wrinkled, basad of basal carina with moderately large, deep, closely placed punctures. First tergite about 2.5x as long as wide at apex, post-petiole about 1.5x as long as wide at base, tergite smooth and shiny at base, its postpetiolar area mat and densely punctate, punctures tending to be sparse towards the base, pleural area with strong transverse ridges, base of the tergite with or without weak tooth or angulation. Second tergite mat and subpolished with minute dense punctures, third tergite mat and with setiferous punctures, following tergites mat and subpolished. Fore wing with nervulus vertical, opposite to basal vein, nervellus intercepted at its basal .28, axillus vein parallel and its tip curved towards the margin.

Black. Apex of 3rd-10th flagellar segments white above. The following are yellow : a circular mark in the middle of face, clypeus, except apicomediaally, mandible at base, face, frons and temple all along the eye margin, pronotal collar, upper margin of pronotum, an oval mark at the center of mesoscutum, scutellum, metascutellum subtegular ridge, a large mark at the apex and a small mark at the base of sternaulus, propodeum with a 'ring-shaped' mark, apices of all the abdominal tergites, fore and middle coxae with irregular markings (Fig. 2 d,e,f). Legs in general red, except hind tarsus white with its first segment at base, fourth and fifth segment largely reddish. Wings clear hyaline.

*Male* : Essentially similar to female, except 11th-17th flagellar segments above white. Fore and middle coxae and trochanters yellow with black markings. Hind coxa and trochanter black.

*Length* : Female 8-11mm. Fore wing 6-9mm. Ovipositor sheath 3.5-4.5mm. Male, 8.5mm. Fore wing 6.5mm.

*Holotype* Female and *Allotype* Male, INDIA : UTTAR PRADESH : Bhyundar, 2286m, Garhwal

Hills, 26.v.1965, Colls. D.T. Tikar, V.K. Gupta, Nos. T28 & 101. *Paratypes* 12 Females, 4 Males. INDIA : UTTAR PRADESH : Bhyunder, 2286m, Garhwal Hills, 1 F, 26.v.1965, D. Ram, No. 100; Jangla, 2700m, 1 F, 21.vi.1977, V.K. Gupta. HIMACHAL PRADESH : Manali, 1828m, 4 F, 17-26.v.-2.vi.1970, Colls. M.L. Gupta, A.K. Gulati, D. Ram, Nos. M23, K211, K214, K223. Kasol, 1829m, 1 F, 23.vi.1970, D. Ram, No. K294. Dalhousi, 2132 m, 2 M, 23.iv.1971, M.K. Kamath, No. DH1. Ahla, 2286m, 1 M, 20.v.1971, M.K. Kamath, No. DH 55, Kulu, 2 F, vi.1964, colln. C.I.B.C., Nos. 20 & 21; 2 F, 22.ii.1967, Colln. C.I.B.C., Nos. 149 & 150. Jammu & Kashmir : Pahalgam, 2070m, 1 F, 30.vi.1966, J.K. Jonathan, No. J172 (Z.S.I., Calcutta). United Prov., 1 M 1949, F. Bianchi, no further data (A.E.I., Florida).

*Distribution* : India : Jammu & Kashmir, Himachal Pradesh and Uttar Pradesh.

### SUMMARY

This paper deals with three new species of *Myrmeleonostenus* Uchida, viz., *M. longipetiolatus*, *M. flavomaculatus* and *M. nigrimaculatus* from India.

The genus *Myrmeleonostenus* has been recorded from Indo-papuan and southern part of the Palaearctic Region. This is the first record of this genus from India.

### ACKNOWLEDGEMENTS

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