

OCCASIONAL PAPER NO. 113

# **Records of the Zoological Survey of India**

A review of the Asilidae (Diptera) from India

**A. N. T. Joseph**

**P. Parui**

**Zoological Survey of India**

RECORDS  
OF THE  
**ZOOLOGICAL SURVEY OF INDIA**

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**A Review of the Asilidae  
( Diptera ) From India**

*by*

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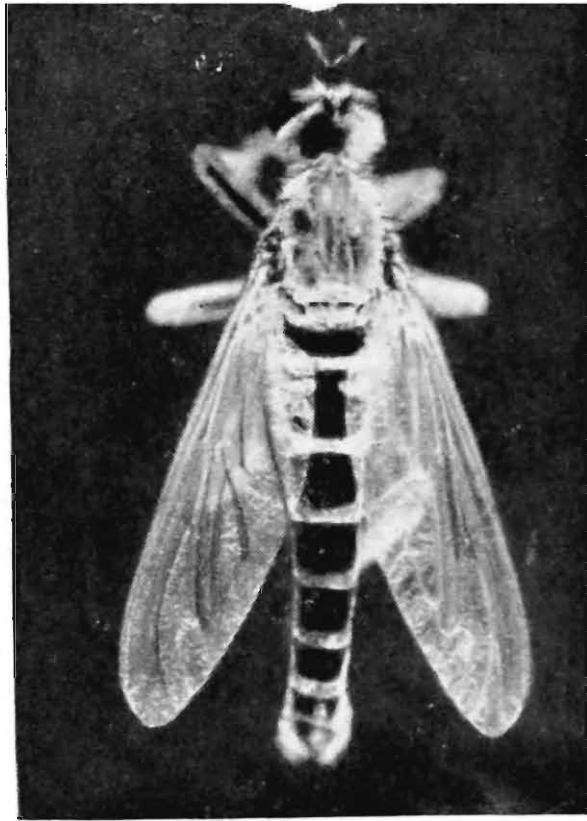
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CONTENTS

				Page
INTRODUCTION	....	...	...	1
HISTORICAL REVIEW	...	...	...	1
ECOLOGY	...	...	....	2
INTERRELATIONSHIPS	...	...	....	3
DISTRIBUTIONS	...	...	...	4
KEY TO THE SUBFAMILIES	....	....	....	5
SUMMARY	....	...	...	68
ACKNOWLEDGEMENTS	...	...	....	68
REFERENCES	....	...	....	68
INDEXES	...	....	....	101
ADDENDA	....	....	...	116



*Microstylum Bhattacharyai* Joseph & Parui

# A REVIEW OF THE ASILIDAE (DIPTERA) FROM INDIA

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## 1. INTRODUCTION

The Asilidae (robber flies) comprises one of the largest and abundant families of Diptera. Their adult and larvae are predaceous feeding on other insects, especially on phytophagous insects, and thus help to maintain the natural balance of insect populations. They, therefore, have considerable potential in biological control. The Asilidae are world wide in distribution and include over 400 genera and about 5000 species. Of these 80 genera of about 800 species are known from the Oriental Region. Only 52 genera of over 300 species are so far recorded from India.

Publication of 'A Catalog of Diptera of the Oriental Region' is a landmark in the study of Diptera from this region. In this, Oldroyd (1975) records 186 species of Asilidae from India. Mainly through the efforts of Joseph and Parui (1983, *et. al.*), the number has increased well over 300.

## II. HISTORICAL REVIEW

Linnaeus (1758) erected the genus *Asilus* and included 11 species in it. Family status is credited to Leach (1819) basing *Asilus crabroniformis* Linnaeus as the type of the family. Macquart (1838) was the first to divide the family into Asilities, Dasypogonites, and Laphrites. In 1847, Loew divided it into subfamilies : Dasypogoninae, Laphriinae and Asilinae. Later Schiner (1868) added Leptogastrinae. The system was followed by subsequent workers, notable among them are Hermann (1920),

Efflatoun (1934), Bromley (1934, 1935) and Martin (1957). Hardy (1934) divided the family into two subfamilies based on the number of palpal segments, *viz.*, two segmented Dasypogoninae and one-segmented Asilinae. Carrera (1949) followed Hardy's classification.

For the first time in this century Hull (1962) studied the world genera and proposed a new classification. He divided the family into five subfamilies-Asilinae, Dasypogoninae, Megapodinae, Laphriinae and Leptogastrinae. Hull's system of classification is often opposed because he attaches too much importance to the number of segments of palpus. In 1968 Martin elevated Leptogastrinae to family rank. Papavero (1973) gave a detailed history of classification and divided the family into eight subfamilies : Asilinae, Apocleinae, Dasypogoninae, Laphriinae, Laphystiinae, Ommatiinae, Stenopogoninae and Trigonimimicinae. Unfortunately this scheme attaches too much significance to the tibial spur. There is no agreed opinion on the division of family into subfamilies and in this study we follow the classification of Oldroyd (1974) for the sake of convenience. Oldroyd followed the earlier classification of Williston (1908), Hermann (1920) and others. It is based on the characters of palpus, antenna and venation, and includes four subfamilies : Asilinae, Dasypogoninae, Laphriinae and Leptogastrinae ; the subfamily Megapodinae of Hull (1962) is included in the Dasypogoninae.

The notable students of asilids include Macquart (1826-49), Walker (1837-71), Loew (1840-81), Rondani (1845-75), Bigot (1852-92), Schiner (1854-68), Osten Sacken (1858-92), Lynch (1879-83), Roeder (1881-90), Williston (1884-1908), Becker (1887-1926), Strobl (1893-1909) and Villeneuve (1904-33). Outstanding contributions were made by Hermann (1905-26) on the Oriental, Hardy (1917-51) on the Australian, Engel (1925-30) on the Palaearctic, Efflatoun (1927-37) on the Ethiopian and Hobby (1931-48) on the Nearctic Asilidae. Hull (1962) monographed the world genera along with the distributional records of all the species. Wiedemann (1817-30), Doleschall (1856-58), van der Wulp (1872), Ricardo (1900-27), de Meijere (1907-24), Hermann (1914-17), Frey (1911-37), Bromley (1935, 1938) and Oldroyd (1938-75) contributed most to the Oriental fauna.

### III. ECOLOGY

Asilids are common in arid and semi-arid regions of the world. In temperate countries they are common in wet or swampy localities and

deep forests. Forest dwelling species are usually centred at places where shrubs are predominant. Considerable number of species have limited distribution. In the case of *Clephydroneura brevipennis* Oldroyd we could collect about 150 specimens from Walayar Forest, Kerala, during January 1973, from a particular locality of about 3 acres. This species was noticeably absent in adjoining localities. Other workers have also made similar observations. Many predominant genera and species are found in widely separated localities within the same geographical region.

Mating behaviour is described by a number of workers, including Melin (1923), Hull (1962), Lavigne (1963-77), Lavigne and Holland (1969), Dennis and Lavigne (1976), and Scarbrough and Sipes (1973). The male rides over the female facing the same direction or tail to tail position facing in opposite directions. Mating usually takes place after feeding. Courtship or preliminary behaviour may be absent, simple or quite complex. In those species in which it occurs, the male may initiate the behaviour on a substrate with a perched female or in flight above a perched female. Mating generally takes place during the day, although it has been observed at night in some desert species (Lehr 1959-1964 ; Newkirk 1963). The life span of asilids is variable ranging from a week to six months. Oviposition occurs ten to eleven days after the emergence from pupae in some species (Lavigne *et al.*, 1978). The number of eggs varies from species to species and their size depends upon the size of the fly and the number of eggs laid at a time. The larval and immature stages are passed in soil, decaying wood or beneath bark. Many larvae are predaceous on the immature stages of other insects, and some are omnivorous.

Temperature is the most important factor governing the diurnal activity of robber flies. In temperate species their peak period of activity is from 10 a.m. to 2 p.m., when the sun is hot. According to Lehr (1961), cannibalism may occur when there is shortage of food.

#### IV INTERRELATIONSHIPS

The Rhagionidae, Therevidae and Tabanidae and the lower members of the Asilidae have strikingly similar venation with marginal, posterior and anal cells open. Spines on the acanthophorites, similar to those of

Asilidae, are also present in the females of Therevidae, Mydidae and Apioceridae. The Therevidae are closest to the Asilidae in their bristle-like empodium and prosternum.

According to Oldroyd (1974) the family is divided into four subfamilies : Asilinae, Laphriinae, Leptogastrinae and Dasypogoninae. The division is mainly based on the characters of palpus, antenna and venation. Of these four subfamilies, the Dasypogoninae includes the most generalised members of the family with a two-segmented palpus and an open marginal cell. The common characters of Laphriinae and Laphistini of Dasypogoninae suggest that this subfamily probably evolved from the Dasypogoninae. So far no fossil Laphriinae is known and it appears that this subfamily is of more recent origin than others.

Of the four subfamilies the bulk of robber flies from India are in Asilinae and the least number in Leptogastrinae.

## V DISTRIBUTION

The Asilidae are distributed throughout the world. Of the about 400 genera, *Stichopogon* Loew, *Leptogaster* Meigen, *Andrenosoma* Rondani, *Pogonosoma* Rondani, *Ommatius* Wiedemann, *Promachus* Loew and *Neoitamus* Osten Sacken are the seven widely distributed genera in all the zoogeographical regions. The zoogeography of the Oriental fauna is poorly studied. *Hoplophomerus* Becker, *Clephroneura* Becker, *Oligoschema* Becker, *Damalina* Doleschall, *Trigonomima* Enderlein, *Orthogonis* Hermann, *Laloides* Oldroyd, *Anoplothyrea* de Meijere and *Dichaetothyrea* de Meijere are restricted to the Oriental region. Of the Oriental genera, *Clephroneura* Becker, *Laxenecera* Macquart, *Cryptopogon* Loew, *Merodontina* Enderlein and *Pseudomerodontina* Joseph and Parui are restricted to the Indian sub-continent, except for *Clephroneura bengalensis* (Macquart), from Java, Sumatra and Philippines.

## VI. Family ASILIDAE

Asilidae Loew, 1847. *Linn. Ent.*, 2 : 384. Schiner, 1866. *Verh. Zool. Bot. Ges. Wien*, 16 : 649 ; 1867. 17 : 355. Wulp, 1896. *Catalogue Diptera South Asia*, : 75-100. Williston, 1908. *Manual of North American Diptera*,

: 192-204. Kertész, 1909. *Catalogue Dipteroorum*, 4 : 49-348. Hermann, 1920. *Zool. Jhb.*, 43 : 161-94. Melin, 1923. *Zool. Bidr.*, 8 : 317. Curran, 1934. *The families and genera of N. American Diptera*, : 167-84. Bromley, 1934. *Ann. Ent. Soc. Amer.*, 27 : 74-113 ; 1945. *Lingnan Sci. J.*, 21 (1-4) : 87-105. Efflatoun, 1934, *Mem. Soc. R. Ent. Egypte*, 4(2) : 31. Hardy, 1934. *Ann. Mag. nat. Hist.*, (10) 13 : 498-525 ; 1935. (10) 16 : 161-87, 405-26 ; 1948. *Ent. Monthly Mag.*, 84 : 116-19. Clements, 1951. *Proc. R. Ent. Soc. London*, (B) 20 : 10-14. Martin, 1957. *Bull Amer. Mus. Nat. Hist.*, 112(1) : 347-85. Rattan Lal, 1960. *Catalogue of Indian Insects*, Family Asilidae, 29 : i-ii+1-77. Hull, 1962. *Bull U. S. Nat. Mus.*, 224 : 1-x+1-907. Oldroyd, 1974. *Israel J. Ent.*, 9 : 14.

The robber flies are elongate bristly flies with a horny proboscis, frons excavated above, ocelli situated on a rounded tubercle, mystax between eye margin and above epistome, antennae three segmented with or without style or arista on third segment ; thorax convex ; legs stout, prehensile, empodium bristle-like and pulvilli pad-like ; wings with one marginal, two to three sub-marginal, and four to five posterior cells ; abdomen eight-segmented with prominent hypopygium and ovipositor.

## VII. KEY TO THE SUBFAMILIES

- |  |     |     |     |                |   |
|--|-----|-----|-----|----------------|---|
| 1. Palpus one segmented                  | ... | ... | ... | ...            | 2 |
| Palpus two segmented                     | ... | ... | ... | ...            | 3 |
| 2. Elongate and very slender species,    |     |     |     |                |   |
| marginal cell open, alula absent,        |     |     |     |                |   |
| third antennal segment short,            |     |     |     |                |   |
| ovoid with a long bristle-like arista    |     |     |     |                |   |
|  | ... |     | ... | Leptogastrinae |   |
| Legs slender or robust species, marginal |     |     |     |                |   |
| cell closed, third antennal segment      |     |     |     |                |   |
| long and slender with short bristle      |     |     |     |                |   |
| bearing microsegment                     |     |     |     |                |   |
|  | ... | ... | ... | Asilinae       |   |
| 3. Marginal cell open, third antennal    |     |     |     |                |   |
| segment spindle-shaped with              |     |     |     |                |   |
| apical microsegment, fourth              |     |     |     |                |   |
| posterior cell generally open            |     |     |     |                |   |
| or closed in the margin, females         |     |     |     |                |   |
| usually with circlet of spines           |     |     |     |                |   |
| on acanthophorites                       |     |     |     |                |   |
|  | ... | ... | ... | Dasygogoninae  |   |

Marginal cell closed, third antennal segment rod-like or clavate with apical pit, fourth posterior cell generally closed and stalked	...	...	...	Laphriinae
--	-----	-----	-----	------------

### Subfamily LEPTOGASTRINAE

Leptogastrinae Schiner, 1868. *Dipt. Novara Reise*, 1857-59 : 155. Williston, 1908. *Manual N. American Diptera* New Haven : 197. Hermann, 1920. *Zool. Jhb.* **43** : 164-65. Bromley, 1934. *Ann. ent. Soc. Amer.* **27** : 78 ; 1945. *Lingnan Sci. F.* **21** (1-4) : 89. Efflatoun, 1934. *Mem. Soc. R. ent. Egypt* **4** (2) : 38. Martin, 1957. *Bull. Amer. Mus. nat. Hist.* **3** : 347. Hull, 1962. *U. S. Nat. Mus. Bull. Wash.* **224** : 296. Oldroyd, 1974. *Israel J. Ent.* **9** : 14.

The members of this subfamily are slender, bare flies with elongate clavate or clubbed abdomen, wings with reduced alula, simple venation with cell R<sub>1</sub> almost always open ; legs without pulvilli, very long claws with elongate slender empodium. The subfamily resembles Asilinae having one-jointed palpi.

### Subfamily ASILINAE

Asilinae Loew, 1847. *Linn. Ent.* **2** : 384. Schiner, 1866. *Verh. Zool. bot. ges. Wien.* **16** : 649; **17** : 355; 1868, *Dipt. Novara Reise*, 1857-59 : 155. Wulp, 1896. *Catalog Diptera South Asia*, Hague : 90. Williston, 1908. *Manual of North American Diptera*, New Haven : 203. Kertész, 1909. *Catalogus Dipteroorum*, Budapest, **4** : 208. Hermann, 1920. *Zool. Jhb.* **43** : 164-165. Hardy, 1927. *Proc. Linn. Soc. N.S.W.* **52** : 389-90 ; 1935. *Ann. Mag. nat. Hist.* (10) **16** : 161-183; 405-426 ; 1948. *Ent. mon. Mag.* **84** : 116-119. Bromley, 1934. *Ann. ent. Soc. Amer.* **27** : 78; 1945. *Lingnan Sci. F.* **21** (1-4) : 90-91 Efflatoun. 1934. *Mem. Soc. R. ent. Egypt.* **4**(2) : 31. Clements, 1951. *Proc. R. ent. Soc. London*, (B) **20** : 10-14. Hull, 1962. *U. S. Nat. Mus. Bull. Wash.* **224** : 433. Oldroyd, 1974. *Israel J. Ent.* **9** : 14.

This subfamily resembles Leptogastrinae in the one-jointed palpus. Some of its genera, possessing arisal filaments, have similarities with Leptogastrinae by being devoid of an ovipositor, but these genera have the typical venation of Asilinae.

## Subfamily DASYPOGONINAE

Dasyopogoninae (partim) Loew, 1847. *Linn. Ent.* 2 : 384. Wulp, 1896. *Catalogue Diptera South Asia*, Hague, : 76. Kertész, 1909. *Catalogus Dipteroorum*, Budapest, 4 : 57. Dasyopogoninae Schiner, 1866. *Verh. Zool.-bot. Ges. Wein.*, 16 : 649 ; 1868. *Dipt. Novara Reise*, 1857-59 : 155. Williston, 1908. *Manual of N. American Diptera*, New Haven : 192. Hermann, 1920. *Zool. Jhb.*, 43 : 164-165. Bromley, 1934. *Ann. ent. Soc. Amer.*, 27 : 78 ; 1945. *Lingnan Sci. J.* 21 (1-4) : 89-90. Hardy, 1934. *Ann. Mag. nat. Hist.*, (10) 13 : 498-525 ; 1934. *Ibid.* 14 : 1-35 ; 1948. *Ent. mon. Mag.*, 84 : 116-119. Efflatoun, 1937. *Mem. Soc. R. ent. Egypte*, 4(3) : 199-443. Clements, 1951. *Proc. R. ent. Soc. London*, (B) 20 : 10-14. Hull, 1962. *U. S. Nat. Mus. Bull. Wash.* 224 : 26. Oldroyd, 1974. *Israel. J. Ent.* 9 : 14.

The members of this subfamily resemble Leptogastrinae in having cell  $R_1$  almost always open and Laphriinae in the two-jointed palpus.

## Subfamily LAPHRIINAE

Laphriinae Loew, 1847. *Linn. Ent.* 2 : 384. Schiner, 1866. *Verh. zool.-bot. Ges. Wien.* 16 : 649 ; 1867, 17 : 355 ; 1868. *Dipt. Novara Reise*, 1857-59 : 155. Wulp, 1896. *Catalogue Diptera South Asia*, Hague 81. Williston, 1908. *Manual of N. American Dipera*, New Haven : 202. Kertész, 1909. *Catalogues Dipteroorum*, Budapest, 4 : 160. Hermann, 1920. *Zool. Jena Abt. Syst.*, 43 : 106. Bromley, 1934. *Ann. ent. Soc. Amer.* 27 : 78 ; 1945. *Lingnan Sci. F.*, 21 (1-4) : 90. Efflatoun, 1937. *Mem. Soc. R. ent. Egypte*, 4 (3) : 199-443. Hull, 1962. *U. S. Nat. Mus. Bull. Wash.* 224 : 319. Oldroyd, 1974. *Israel J. Ent.* 9 : 14.

Laphriinae resemble Asilinae in the closed  $R_1$  cell and Dasyopogoninae in the two jointed palpi.

## VIII. KEY TO THE TRIBES

(After Oldroyd, 1963)

1. Marginal cell open	...	...	2
Marginal cell closed	...	...	5

2. Very narrow, elongate flies, third antennal segment short, ovoid with a long bristle-like arista, alula and pulvilli absent ... .. Leptogastrini (Figs. 1, 2)
- Usually stout flies of varied shape, pulvilli nearly always present, if absent then the third antennal segment well developed with a short apical style ... .. 3
- 3 Prosternum isolated and surrounded by membrane, ninth sternite divided into two acanthophorites ... .. Saropogonini (Figs. 3-5)
- Prosternum complete with little or without membranous area ... .. 4
4. Frons and vertex strongly diverge, at vertex eyes much apart than at antenna, third antennal segment bears plumose arista except in *Clinopogon*, *Stichopogon* and *Holopogon*, which bears apical spine ... .. Stichopogonini (Figs. 6, 7)
- Face and frons small and eyes very large, third antennal segment with bristle-like terminal style, mesonotum elevated and arched ... .. Xenomyzini (Fig. 8)
5. Third antennal segment club-shaped, blunt with a tiny apical style, mesopleuron often with bristles before wing base ... .. 6
- Antenna with a slender bare arista, marginal cell closed uniformly ... .. Asilini (Figs. 9, 10)
6. Vein M<sub>3</sub> straight and parallel with outer margin of discal cell, often in a line with it ... .. Atomosini (Fig. 11)
- Vein M<sub>3</sub> curved and not parallel with outer margin of discal cell, and not in a line with it except in *Orthogonis* ... .. Laphriini (Figs. 12-14)

## A. Tribe LEPTOGASTRINI

## Key to genera

1. Anal cell closed and stalked, generally large species with elongate abdomen, hind femur with a medial isolated hair flock, anterior branch of fourth vein forks towards base of wing ... .. *Ammophilomima* Enderlets
- Anal cell open, mostly small and slender species ... .. 2
2. Prothorax with a bifid process arising between the paired anterior process of mesonotum, empodium reduced or absent, third antennal segment spindle-like, always twice as long as first two segments combined ... .. *Euscelidia* Westwood
- Prothorax without any process between the paired anterior process of mesonotum, empodium generally well developed ... .. 3
3. Style projecting from the middle of third antennal segment, aedeagal sheath free ... .. *Leptogaster* Meigen
- Style projecting from the dorsal position of third antennal segment, aedeagal sheath united with the lobos - horizontal pod-like ventral organ of male genitalia ... .. *Lobus* Martin

I. Genus *Ammophilomima* Enderlein

*Ammophilomima* Enderlein, 1914, *Wien. ent. Ztg.* 33 : 155.

Type-species : *Ammophilomima imitatrix* Enderlein : original designation.

The genus is closely allied to *Lagynogaster* Hermann, from which it can be distinguished by the prosternum being broadly fused with the lateral propleuron and by the very long, upper anterior intercalary vein which is five or six times the medial cross-vein.

*Ammophilomima rubescens* Frey, 1937. *Notul. Ent.* 17 : 47. Type locality :  
Calcutta.

*Distribution* : India.

## II. Genus *Euscelidia* Westwood

*Euscelidia* Westwood, 1850. *Trans. ent. Soc. London*, 5 : 232.

Type-species : *Euscelidia rapax* Westwood ; monotypic.

The genus is characterised by peg-like median bifid projection of pronotum. It resembles *Ammophilomima* Enderlein in the presence of a flock of long, erect hairs on the hind femur.

### 1. *Euscelidia marian* (Walker)

*Leptogaster marion* Walker, 1849. *List, Dipt. Colln. Br. Mus.* 2 : 284. Type-  
Locality : Bengal.

*Euscelidia marion* (Walker), Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 100.

*Distribution* : India.

### 2. *Euscelidia simplex* (Bigot)

*Leptogaster simplex* Bigot, 1878. *Ann. Soc. Ent. Fr.* 8 : 444.  
Type locality : Sri Lanka.

*Euscelidia simplex* (Bigot) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 100

*Distribution* : Burma ; Sri Lanka ; India.

## III. Genus *Leptogaster* Meigen

*Leptogaster* Meigen, 1803. *Magazin Insektenkde*, 2 : 269.

Type-species : *Asilus tipuloides* Fabricius=*cylindrica* (De Geer) ; monotypic.  
*Gonypes* Latreille 1894. *Hist. Nat. Crust. Ins.* 14 : 309.

Type species : *Asilus tipuloides* Fabricius=*cylindrica* (De Geer) ; monotypic.

Palpus clavate with blunt obtuse, rounded apex ; pulvilli lacking ; all cells including anal cell open.

### 1. *Leptogaster albimana* Walker, 1859 *J. Linn. Soc. London*, 3 : 89, Type locality : Aru Islands, Moluccas,

*Distribution* : Burma ; Sri Lanka ; India ; Moluccas.

### 2. *Leptogaster basilaris* Coquillett, 1898. *Proc. U. S. Nat. Mus.* 21 : 311. Type locality : Japan.

Distribution : Taiwan ; India (West Bengal) ; Java ; Philippines ; Sumatra ; Japan.

3. *Leptogaster cheriani* Bromley, 1938. *Indian J. Agric. Sci.* **8** : 893.  
Type locality : Coimbatore.

*Distribution* : India.

4. *Leptogaster ophionea* Frey, 1937. *Notul. Ent.* **17** : 44.  
Type locality : Calcutta.

*Distribution* : India.

#### IV. Genus *Lobus* Martin

*Lobus* Martin, 1972. *J. Kansas ent. Soc.* **45** : 8. Type species : *Leptogaster pallipes* Janssens ; original designation.

*Lobus (Nanilobus)* Martin, 1972. *J. Kansas ent. Soc.* **45** : 15 Type-species : *Lobus (Nanilobus) himalayae* Martin ; original designation.

The distinguishing character of the genus is the disc-like to pod-like structure formed by the coalescence of the hypandrium and basistyle.

1. *Lobus himalayae* Martin, 1972. *J. Kansas ent. Soc.* **45** : 15.  
Type locality : Mussoorie, Uttar Pradesh.

*Distribution* : India.

2. *Lobus jairami* Joseph & Parui, 1984. *Bull. zool. Surv. India*, **6(1-3)** : 250. Type locality : Kerala.

*Distribution* India.

3. *Lobus keralae* Martin, 1972. *J. Kansas ent. Soc.* **45** : 13. Type locality : Kerala.

*Distribution* : India.

4. *Lobus martini* Joseph & Parui, 1983. *Bull. zool. Surv. India*, **5(1)** : 67. Type locality : Kerala.

*Distribution* : India.

#### B. Tribe LAPHRIINI

##### Key to genera

1. Proboscis laterally flattened like  
paper knife on edge

... ..

	Proboscis dorsoventrally compressed, shorter and pointed at apex	...	...		3
2.	Bare species, mesonotum and abdomen brilliantly metallic green, blue or purple, facial gibbosity medially developed	...	...	<i>Maira</i> Schiner	
	Comparatively hairy, mesonotum usually not metallic but abdomen partly so, facial gibbosity more developed	...	...	<i>Laphria</i> Meigen	
3.	Wing with three submarginal cells	...	...	<i>Pogonosoma</i> Rondani	
	Wing with two submarginal cells	...	...	...	4
4.	Metanotal callosity bearing piles or bristles, third antennal segment elongate bearing a dorsal incision at or beyond middle with a distinct spine, apex of abdomen concealing genitalia	...	...	<i>Cormansis</i> Walker	
	Metanotal callosity with pubescence only, third antennal segment without any incision and associate spine	...	...	...	5
5.	First posterior cell widely open, veins at apex of discal cell forms a cross, black or purplish-black species	...	...	<i>Orthogonis</i> Hermann	
	First posterior cell closed and petiolate	...	...	...	6
6.	Ambient vein absent, costa ends above wing apex, first posterior cell narrow throughout	...	...	<i>Nusa</i> Walker	
	Ambient vein complete, first posterior cell not narrow throughout		.		7
7.	Third antennal segment slender, elongate with conspicuous long setae dorsally, also laterally or ventrally, face thickly covered with bristly hairs upto base of antennae		..	<i>Laxenecera</i> Macquart	
	Third antennal segment without much setae	...	...	...	8

8. Large and robust flies with dense long piles on legs, pleura and laterally on abdomen ... .. *Hyperechia* Schiner
- Medium sized flies with reduced pile, proboscis dorsoventrally compressed with shovel-like apex, third antennal segment dilated beyond base ... .. *Andrenosoma* Rondani

### I. Genus *Andrenosoma* Rondani

*Andrenosoma* Rondani, 1856. *Dipteral. Ital. Prodr.* 1 : 160. Type-species : *Laphria atra* Fabricius = *Asilus ater* Fabricius ; original designation.

*Elacotoma* Costa, 1863. *Atti Acad Napoli*, 1 : 49. Type-species - *Elaetoma adjustiventris* Costa 1863 ; monotypic.

Face strongly gibbous below with spike bristles, third antennal segment dilated beyond base and without microsegment, cephalic and leg piles comparatively long and abundant.

*Andrenosoma choprai* Bromley, 1935. *Rec. Indian Mus.* 37 : 227. Type locality : Singla, Darjeeling.

*Distribution* : India.

### II. Genus *Cormansis* Walker

*Cormansis* Walker, 1851. *Insecta Saundersiana*, 1 : 154. Type-species : *Cormansis halictides* walker ; monotypic.

Several abdominal tergites with lateral bristles, the apex being cupped, concealing the genitalia in both sexes.

*Cormansis halictides* Walker, 1851. *Insecta Saundersiana*, 1 : 154. Type locality : East India.

*Distribution* : India.

### III. Genus *Hyperechia* Schiner

*Hyperechia* Schiner, 1866. *Verh. Zool.-bot. Ges. Wien.* 16 : Type-species: *Laphria xylocopiformis* Walker 1849 ; original designation.

The genus is characterised by the dense, long brushes of piles on femora, tibiae and basal segments of the tarsi.

*Hyperechia xylocopiformis* ( Walker )

*Laphria xylocopiformis* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 385. Type locality : India.

*Hyperechia xylocopiformis* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 106.

*Distribution* : India.

#### IV Genus *Laphria* Meigen

*Laphria* Meigen, 1803. *Magazin Insektdke*, 2 : 270. Type-species : *Asilus gibbosus* Linnaeus ; designated by Latreille ( 1810 : 43 ).

*Ropalocera* Meigen, 1820. *Syst. Besch. zweifl. Insekt.* 2 : 301. Type-species : *Laphria nigripennis* Meigen, monotypic.

*Choerades* Walker, 1851. *Insecta Saundersiana*, 1 : 109. Type-species : *Choerades aurigena* Walker=*vulcanus* Wiedemann ; monotypic.

*Pagidolaphria* Hermann, 1914, *Ent. Mitt.* 3 : 85. Type-species : *Laphria gigas* Macquart, 1838 ; original designation.

*Saliomima* Enderlein, 1914. *Zool. Anz.* 44 : 253. Type-species : *Laphria reinwardtii* Wiedemann, 1828 ; monotypic.

*Epholkiolaphria* Hermann, 1914. *Ent. Mitt.* 3 : 89. Type-species : *Laphria egregia* van der Wulp, 1898 ; original designation.

Characterised by a gibbous face, adpressed and matted piles of the abdomen, and laterally compressed proboscis with a bluntly rounded apex.

1. *Laphria alternans* Wiedemann, 1828. *Aussereurop. zweifl. Insekt.* 1 : 511. Type locality : Java.

*L. senomera* Macquart, 1838. *Dipt. Exot.* 1 (2) : 65. Type locality : West Bengal, India.

*Laphria alternans* Wiedemann : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 107.

*Distribution* : Borneo ; India ; Java ; Philippines ; Taiwan.

2. *Laphria assamensis* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 215. Type locality : Tura, Assam.

*Distribution* : India.

3. *Laphria dimidiata* Macquart, 1846. *Dipt. Exot. Suppl.* 1 : 72. Type locality : Manila.

*Distribution* : Java ; Philippines ; Moluccas ; India.

4. *Laphria flava* (Linne)  
*Asilus flava* Linne, 1767. *Fauna Suec. Ed. Alt.* : 469. Type locality : Europe.  
*Laphria flava* (Linne) : Meigen, 1804. *Klassifikation und Beschreibung der europäischen zweiflügeligen Insekten (Diptera)*. Braunschweig, 1(2) : 261.  
*Distribution* : India.
5. *Laphria frommeri* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 219 Type locality : Cinchona, Kerala ; Agumbe Ghat, Shimoga District, Karnataka.  
*Distribution* : India.
6. *Laphria furva* van der Wulp, 1898. *Tijdschr. Ent.* 41 : 127. Type locality : Darjeeling.  
*Distribution* : India.
7. *Laphria gilvodes* van der Wulp, 1872. *Tijdschr. Ent.* 41 : 124. Type locality : Darjeeling.  
*Distribution* : India.
8. *Laphria indica* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 216. Type locality : Cinchona, Kerala.  
*Distribution* : India.
9. *Laphria keralaensis* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 218. Type locality : Poonmudi Range, Kerala.  
*Distribution* : India.
10. *Laphria luteopilosa* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 216. Type locality : Tura, Assam.  
*Distribution* : India.
11. *Laphria nathani* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 217 Type locality : Cinchona, Kerala.  
*Distribution* : India.
12. *Laphria nigrohirsuta* Lichtwardt, 1809. *Deutsch. Ent. Z.* 1909 : 125. Type locality : Kashmir.  
*Distribution* : India.
13. *Laphria orientalis* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 214. Type locality : Tura, Assam.  
*Distribution* : India.
14. *Laphria semifulva* Bigot, 1878. *Ann. Soc. Ent. Fr.* 8 : 223. Type locality : "Ind. Orient"  
*Distribution* : ? India.

### V Genus *Laxenecera* Macquart

*Laxenecera* Macquart, 1836, *Dipt. exot.* 1 (2) : 77. Type-species : *Laxenecera albibarbis* Macquart ; designated by Hermann (1919 : 340).

*Acurana* Walker, 1851. *Insecta Saundersiana*, 1 : 107. Type-species : *Acurana sexfasciata* Walker ; monotypic.

*Dyseris* Loew, 1957. *Ofvers. K. Svenska Vet. Akad. Forh.* 14 : 357. Type-species : *Dyseris albicincta* Loew : designated by Hull (1962 : 44).

The face with numerous, very long, slender bristles or bristly hairs from top to bottom, stout unspined femur and adpressed abdominal pile.

1. *Laxenecera albibarbis* Macquart, 1838. *Dipt. Exot.* 1(2) : 77. Type locality : West Bengal.

*Distribution* : India.

2. *Laxenecera bengalensis* (Wiedemann)  
*Laphria bengalensis* Wiedemann, 1821. *Dipt. Exot.* : 237. Type locality : West Bengal.

*Laxenecera bengalensis* (Wiedemann) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 112.

*Distribution* : India.

3. *Laxenecera flavibarbis* Macquart, 1838. *Dipt. Exot.* 1(2) : 77. Type locality : West Bengal.

*Distribution* : India.

4. *Laxenecera sexfasciata* (Walker)  
*Acurana sexfasciata* Walker, 1851. *Insecta Saundersiana*, 1 : 107. Type locality : "East India"

*Laxenecera sexfasciata* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 112.

*Distribution* : India.

### VI. Genus *Maira* Schiner

*Maira* Schiner, 1866. *Verh. Zool.-bot. Ges. Wien.* 16 : 673. Type-species : *Laphria spectabilis* Guerin-Meneville 1867 ; original designation.

Brilliant metallic coloured flies, with very long, slender, laterally compressed proboscis. The genus has a general appearance of *Laphria* Meigen but can be distinguished by the genital structure.

1. *Maira aurifacies* Macquart  
*Laphria aurifacies* Macquart, 1848. *Dipt. Exot. Suppl.* 3 : 22. Type locality :  
Moluccas.  
*Maira aurifacies* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the  
Oriental Region*, 2 : 113.  
*Distribution* : Borneo ; Nicobar Islands ; Malaya ; Sumatra.
2. *Maira bicolor* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type  
locality : Sukna, Darjeeling.  
*Distribution* : India.
3. *Maira compta* Walker, 1861. *J. Linn. Soc. London*, 5 : 146. Type locality :  
Amboina, Moluccas.  
*Distribution* : Java ; India ; Moluccas ; New Guinea.
4. *Maira delfinadoi* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 220. Type locality :  
Tura, Assam.  
*Distribution* : India.
5. *Maira gloriosa* Walker, 1859. *J. Linn. Soc. London*, 3 : 84. Type locality : Aru,  
Moluccas.  
*Maira kollari* van der Wulp, 1872. *Tijdschr. Ent.* 15 : 201. (Preocc. Doleschall  
1857). Type locality : Moluccas, Obi.  
*Maira gloriosa* Walker : Oldroyd, 1976. *A Catalog of Diptera of the Oriental  
Region*, 2 : 113.
6. *Maira indiana* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press). Type  
locality : Lekhabali, Arunachal Pradesh.  
*Distribution* : India.
7. *Maira longirostrata* Bromley, 1935. *Rec. Indian Mus.* 37 : 227. Type locality :  
Darjeeling.  
*Distribution* : India.
8. *Maira paria* Bigot, 1878. *Ann. Soc. Ent. Fr.* (5) 8 : 230. Type locality : "Indiae  
Orient."  
*Distribution* : India.
9. *Maira splendida* (Guerin-Meneville)  
*Laphria splendida* Guerin-Meneville, 1831. In : *Duperrey, Voyage autour du  
monde La Coquille. Zool. pl.* 20, fig. 7. Type locality : Unknown.

*Congrua* Walker, 1861. *J. Linn. Soc. London*, 5 : 227. (*Laphria*). Type locality : Batjan, Moluccas.

*Consurgens* Walker, 1861. *J. Linn. Soc. London*, 5 : 278. (*Laphria*). Type locality : Batjan, Moluccas.

*Waigiensis* Bigot, 1878. *Ann. Ent. Soc. Fr.* (5) 8 : 232. Type locality : Waigu, Moluccas.

*Maira splendida* (Guerin-Meneville) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 114.

*Distribution* : ? India ; Moluccas ; Ambon ; Aru ; Batjan ; Waigu.

### VII. Genus *Nusa* Walker

*Nusa* Walker, 1851. *Insecta Saundersiana*, 1 : 105. Type-species : *Nusa aequalis* Walker, by designation of Hermann (1912 : 243).

*Dasythrix* Loew, 1851. *Progr. K. realsch. Meseritz* : 21. Type-species : *Dasythrix infumata* Loew, 1851, by original designation.

*Halictosoma* Rondani, 1873. *Ann. Mus. Civ. Stor. nat. Giacoma Doria*, 4 : 398. Type-species : *Halictosoma puella* Rondani 1873 ; monotypic.

The genus is characterised by the closed first posterior cell, short and dorsoventrally compressed proboscis. The absence of the ambient vein distinguishes the genus from *Andrenosoma* Rondani.

1. *Nusa aequalis* Walker, 1851. *Insecta Saundersiana*, 1 : 105. Type locality : East India.

*Distribution* : India.

- 1a. *Nusa albibasis* Ricardo, 1927. *Ann. Mag. Nat. Hist.* (9) 20 : 206. Type locality : Burma.
2. *Nusa bengalensis* n. sp. Joseph & Parui, *Oriental Ins* (in press). Type locality : Darjeeling, West Bengal.

*Distribution* : India.

3. *Nusa elva* (Walker)  
*Asilus elva* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 445. Type locality : West Bengal.

*Nusa elva* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 115.

*Distribution* : India.

4. *Nusa formio* Walker, 1851. *Insecta Saundersiana*, 1 : 106. Type locality : East India.

*Distribution* : India.

5. *Nusa ghorpadei* n. sp. Joseph & Parui, *Oriental Ins.* (in Press) Type locality : Sandur, Karnataka.

*Distribution* : India.

6. *Nusa indica* n. sp. Joseph & Parui, *Oriental Ins.* (in press). Type Locality : Yemnicanur, Karnataka.

*Distribution* : India.

7. *Nusa pseudoalbibasis* n. sp. Joseph & Parui, *Oriental Ins.* (in press). Type locality : Tenmalai, Kerala.

*Distribution* : India.

8. *Nusa yerburyi* Ricardo, 1927. *Ann. Mag. Nat. Hist.* (9) 20 : 208. Type locality : Hiniduma and Kotawa ; Srilanka.

#### VIII. Genus *Orthogonis* Hermann

*Orthogonis* Hermann, 1914. *Ent. Mitt.* 3 : 132. Type-species : *Laphria scapularis* Wiedemann, 1828 ; original designation.

Closely resembles *Maira* Schiner but differs in the bare scutellum and reduced pile on femora and tibiae.

*Orthogonis andamanensis* Joseph & Parui, 1981. *Ent. Scand.* 12(2) : 221. Type locality : S. Andaman.

*Distribution* : India.

#### IX. Genus *Pogonosoma* Rondani

*Pogonosoma Rondani*, 1856, *Dipterol. ital, Prodr.* 1 : 160. Type-species : *Asilus maroccanus* Fabricius, 1794 ; original designation.

Vertex well excavated, frons broad with prominent tubercle, proboscis exceptionally stout with swollen base ; abdomen robust, densely pilose, gonopod prominent, sometimes with spine-like bristles. Can be distinguished from the closely similar genus *Andrenosoma* Rondani by the presence of three submarginal cells.

*Pogonosoma cedrusa* Ricardo, 1927. *Ann. Mag. nat. Hist.* (9)20 : 211. Type locality : Simla, Himachal Pradesh ; Khasi Hills, Assam.

*Distribution* : India.

## C. Tribe ATOMOSINI

## Key to genera

- Third antennal segment shallowly excavated near middle bearing a minute spine, marginal cell closed with a very long stalk, occiput laterally bears a pair of microtuberculate bristles near middle of head ... .. *Anoplothyrea* de Meijere
- Third antennal segment micropubescent with terminal microsegment bearing longer pubescence and a dorsal short spine at its base, marginal cell closed with a very short stalk, occiput dorsally with two pairs of spike-like spines ... .. *Opeatocerus* Hermann

I. Genus *Anoplothyrea* de Meijere

*Anoplothyrea* de Meijere, 1914, *Tijdschr Ent.* 55 (Suppl) : 56. Type-species : *Clariola javana* de Meijere, 1911 : 308; original designation.

The genus resembles *Clariola Kertesz* from which it differs in the proboscis being constricted at the base and the bare third antennal segment.

*Anoplothyrea indiana* n. sp. Joseph & Parui, *Oriental Ins.* (in press) Type locality : Cinchona, Tamil Nadu.

*Distribution* : India.

II. Genus *Opeatocerus* Hermann

*Opeatocerus* Hermann, 1912, *Nova acta Leop-Carol Akad. Naturf.* 96 : 16. Type-species : *Atomosia purpurata* Westwood, 1849 : 223 ; original designation.

Small flies ; proboscis short, stout, with blunt apex, palpus with an apical bristle ; all femora thick but hind pair strongly thickened with a dense brush of ventromedial hairs, hind tibia arcuate with dense long fine ventral hairs ; fourth posterior cell closed with unusually long stalk ; abdomen densely pilose, each tergite bears laterally a stout bristle, tip cup-shaped concealing the genitalia.

**Opeatocerus purpurata (Westwood)**

*Atomosia purpurata* Westwood, 1849. *Trans Ent. Soc. London*, 5 : 233. Type locality : India.

*Opeatocerus purpurata* (Westwood) : 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 118.

*Distribution* : India.

**D. Tribe SAROPOGONINI****Key to genera**

- |    |  |     |     |     |                             |   |
|----|--|-----|-----|-----|-----------------------------|---|
| 1. | Front tibia with a short protuberance<br>and a spine at apex   | ... | ... | ... | ...                         | 2 |
|    | Front tibia without such<br>protuberance or spine  | ... | ... | ... | ...                         | 3 |
| 2. | Neck region elongate, scutellum bare,<br>abdomen elongate, slightly<br>clavate   | ... | ... | ... | <i>Neolaparus</i> Williston |   |
|    | Neck region not elongate, scutellum<br>with 1-4 pairs of bristles; head<br>and abdomen drooping  | ... | ... | ... | <i>Saropogon</i> Loew       |   |
| 3. | End vein of discal cell and of the<br>closed fourth posterior cell in<br>alignment and parallel to the<br>wing margin, base of second<br>posterior cell strongly swollen,<br>metanotal callosity with piles<br>or bristles | ... | ... | ... | <i>Microstylum</i> Macquart |   |
|    | Veins not like this, metanotal<br>callosity micropubescent   | ... | ... | ... | ...                         | 4 |

- |    |  |     |     |                            |   |
|----|--|-----|-----|----------------------------|---|
| 4. | Metapleuron without pile or bristles,<br>third antennal segment much<br>longer than first two segments,<br>epandrium widely separated  | ... | ... | <i>Stenopogon</i> Loew     |   |
|    | Metapleuron with pile or bristles  | ... | ... | ...                        | 5 |
| 5. | An additional cross-vein present in<br>first posterior cell, anterior<br>cross-vein near base of discal<br>cell, mesonotum and pleuron<br>densely pollinose                              | ... | ... | <i>Grypoptonus</i> Speiser |   |
|    | Only one normal anterior cross-vein<br>present   | ... | ... | ...                        | 6 |
| 6. | Hind basitarsus distinctly swollen<br>and enlarged than the remaining<br>segments, hind tibia gradually<br>swollen to maximum at apex  | ... | ... | <i>Holopogon</i> Loew      |   |
|    | Hind basitarsus similar with the<br>others, hind tibia not distinctly<br>swollen at apex   | ... | ... | ...                        | 7 |
| 7. | First antennal segment 2 or 3 times<br>the second, third segment very<br>long, laterally compressed, palpus<br>slender, rather bare, occiput<br>unusually prominent                      | ... | ... | <i>Scylaticus</i> Loew     |   |
|    | Second antennal segment subequal to<br>first, palpus hairy   | ... | ... | ...                        | 8 |
| 8. | Male with hamate anterior femur, both<br>sexes bear mesonotal mane,<br>exceptionally long style-like<br>third antennal segment with<br>conspicuously flared apex and<br>sub-apical spine | ... | ... | <i>Oldroydia</i> Hull      |   |

Anterior femur not hamate,  
 third antennal segment slender,  
 with two microsegments and  
 apical spine, face highly  
 protuberant and rounded,  
 covered with long pile to  
 slender bristles, scutellar  
 disc with long, fine pile

... ..

*Cyrtopogon* Loew

### I Geuns *Cyrtopogon* Loew

*Cyrtopogon* Loew, 1847. *Linn. Ent.* 2 : 516. Type-species : *Asilus ruficornis* Fabricius, 1794 ; original designation.

*Euarmostus* Walker, 1851. *Insecta Saundersiana*, 1 : 102. Type-species : *Euarmostus bimacula* Walker ; monotypic.

*Philammosius* Rondani, 1856. *Dipterol. Ital. Prodr.* 1 : 156. Type-species : *Dasyopogon fimbriatus* Meigen, 1820 ; original designation, = *lateralis* Fallen.

Medium sized flies ; face highly protuberant ; thorax patterned with spots and stripes, humeri with abundant long pile, scutellum long pilose on surface ; marginal and all posterior cells widely open ; epan-drium of male genitalia obtuse, fully cleft, proctiger short, gonocoxite pushed upwards, hypandrium broad and convex, female with 5-6 pairs of spines on acanthophorites.

1. *Cyrtopogon khasiensis* Bromley, 1935. *Rec. Indian. Mus.* 37 : 228. Type locality : Numgbru Forest, Assam.

*Distribution* : India.

2. *Cyrtopogon laphrides* Walker, 1851. *Insecta Saundersiana*, 1 : 99. Type locality : East India.

*Distribution* : India.

3. *Cyrtopogon laxenecera* Bromley, 1935. *Rec. Indian Mus.* 37 : 288. Type locality : Bakrota Hills : Punjab.

*Distribution* : India.

### II. Genus *Grypoptonus* Speiser

*Grypoptonus* Speiser, 1828. *Schrift. Phys. Kon. Ges. Königsberg*, 65 : 155.

Type-species : *Grypoptonus aino* Speiser ; original designation.

Flies of medium size with very dense, long, fine pile, characterised by the large and wide discal cell, an additional cross-vein present near the end of discal cell, anterior cross-vein near the base of discal cell, femora without bristles. The genus is related to *Cryopogon* Loew and *Oldroydia* Hull.

Engel (1924) mentions two undescribed species of *Gryptoconus* from Darjeeling.

Unnamed spp.

### III. Genus *Holopogon* Hermann

*Holopogon* Loew, 1847, *Linnaea entomologica*. 2 : 473. Type-species : *Dasy-pogon nigripennis* Meigen 1820; designated by Coquillett (1910).

Members of this genus are quite small with a short face generally divergent front, mesonotum often high giving a hump-backed appearance to the flies. They can be generally recognised by the leg character : hind metatarsus strongly enlarged with the remaining segments decreasing in thickness and the hind tibia is gradually swollen towards the apex.

1 sp. from Sadiya, Assam, collected by D. E. Hardy in 1944 is present in the Smithsonian Collection, Washington.

### IV. Genus *Microstylum* Macquart

*Microstylum* Macquart, 1838, *Dipt. Exot.* 1 (2) : 26. Type-species : *Dasy-pogon venosum* Wiedemann; designated by Back (1909 : 213).

*Mimoscolia* Enderlein, 1914, *Wien. Ent. Ztg.* 33 : 168. Type-species : *Mimoscolia fafner* Enderlein; original designation.

Very large flies, commonly shining; proboscis exceptionally long with pointed apex, third antennal segment with a microsegment bearing an apical spine; end vein of discal cell and of the fourth posterior cell in alignment; male genitalia characterised by the clefted epandrium, hypandrium almost triangular shaped bearing apically and medially knife-like plate, females with six pairs of spines on acanthophorites, ventral plate V-shaped.

1. *Microstylum albolimbatum* van der Wulp, 1898. *Tijdschr. Ent.* 41 : 118. Type locality : Darjeeling, West Bengal.

*Distribution* : India.

2. *Microstylum ananthakrishnani* Joseph & Parui, 1984. *Ent. Scand.* 15 (4) : 449. Type locality : Poonmudi Range, Kerala.

*Distribution* : India.

3. *Microstylum apicale* (Wiedemann)

*Dasyopogon apicale* Wiedemann, 1821. *Dipt. Exot.* : 216.

Type locality : Bengal.

*Microstylum apicale* (Wiedemann) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 119.

*Distribution* : India.

4. *Microstylum apiforme* (Walker)

*Dasyopogon apiforme* Walker, 1851. *Insecta Saundersiana*. 1 : 97. Type locality : India.

*Microstylum apiforme* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 119.

5. *Microstylum basirufum* Bigot, 1878. *Ann. Soc. Ent. Fr.* (5) 8 : 403. Type locality : Assam.

*Distribution* : India.

6. *Microstylum bhattacharyi* Joseph & Parui, 1984. *Ent. Scand.* 15 (4) : 450. Type locality : Coimbatore, Tamil Nadu.

*Distribution* : India.

7. *Microstylum bicolor* Macquart, 1849. *Dipt. Exot. Suppl.* 4 : 62. Type locality : Sylhet, Bangla Desh.

*Distribution* : Bangladesh; Borneo; India.

8. *Microstylum brunnipenne* Macquart, 1849. *Dipt. Exot. Suppl.* 4 : 62. (366) Type locality : Sylhet, Bangla Desh.

*Distribution* : Bangladesh; India.

9. *Microstylum coimbatorensis* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Coimbatore, Tamil Nadu.

*Distribution* : India.

10. *Microstylum erythropygum* Bigot, 1878. *Ann. Soc. Ent. Fr.* (5) 8 : 402. Type locality : Assam.

*Distribution* : India.

11. *Microstylum imbutum* (Walker)

*Dasyopogon imbutum* Walker, 1851. *Insecta Saundersiana*, 1 : 96. Type locality : East India.

*Microstylum imbutum* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 120.

*Distribution* : India.

12. *Microstylum marudamalaiensis* n. sp. Joseph and Parui, *Bull. zool. Surv. India* (in press). Type locality : Marudamalai Hills, Coimbatore District.

*Distribution* : India.

13. *Microstylum strigatum* Enderlein, 1914. *Wien. Ent. Ztg.* 33 : 171. Type locality : Darjeeling, West Bengal; and Sikkim.

*Distribution* : India.

14. *Microstylum trimelas* (Walker)  
*Dasygogon trimelas* Walkar, 1851. *Insecta Saundersiana*, 1 : 97. Type locality : East India.

*Microstylum trimelas* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 121.

*Disiribution* : India.

15. *Microstylum varshneyi* Joseph & Parui, 1984. *Ent. Scand.* 15 (4) : 452. Bype of locality : Coimbatore, Tamil Nadu.

*Distribution* : India.

## V Genus *Oldroydia* Hull

*Oldroydia* Hull, 1956, *Ann. Mag. nat. Hist.* (12) 9 : 398. Type - species : *Oldroydia hamata* Hull; original designation.

*Toremyia* Hull, 1958, *Ann. Mag. nat. Hist.* (12) 10 : 893. Type-species : *Dasygogon scatophagoides* Walker, 1854 : 475; original designation.

Face highly gibbous from antenna to epistome and with dense pile, third antennal segment quite slender, style-like, bearing at apex flat, spade-like structure with a subapical spine on it; mesonotum bears a mane along the middle, scutellum with dense erect hairs; male genitalia with uncleft epandrium, convex hypandrium bulged and bearing dense hairs, six pairs of spines on acanthophorites. This genus resembles *Cyrtopogon* but can be readily distinguished by the hamate anterior femur shape of third antennal segment and the dens: medial crest of erect piles of mesonotum.

1. *Oldroydia femorata* n. sp. Joseph and Parui, *Bull. zool. Surv. India.* (in press). Type locality : Bihar.

*Distribution* : India.

2. *Oldroydia hamata* Hull, 1956. *Ann. Mag. nat. Hist.* (12) 9 : 399. Type locality : Taphlegam, Assam.

*Distribution* : India.

## VI. Genus *Pegesimallus* Loew

*Pegesimallus* Loew, 1858, *Ofvers Svenska Vet.-Akad. Forhande.*, 14 : 344.

Type-species : *Pegesimallus ursinus* Loew, 1858; monotypic.

*Pegesimallus* Verral, 1882, in Scudder, *Nomenclator Zoologicus*, 243, lapsus.

Medium sized flies, face wide bearing abundant, fine, long pile in addition to single pair of epistomal bristles; mesonotum with dense, very long, fine pile, scutellum with fine long hairs; front tibia with an anteroventral lobe carrying curved spine, abdomen subclavate, second and third tergites with cluster of fine pile, epandrium scoop-shaped, each acanthophorite with a row of short spines.

### 1. *Pegesimallus volcatus* (Walker)

*Dasyopogon volcatus* walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 346.

Type localities : East Indies and Java.

*Pegesimallus volcatus* (Walker) : Londt, 1980. *Ann. Natal Mus.* 24 (1) : 332.

*Distribution* : East Indies; Java; China; India; Sri Lanka.

### 2. *Pegesimallus yerburyi* Londt, 1980. *Ann. Natal. Mus.* 24 (1) : 333. Type localities : Sri Lanka and S. India.

*Distribution* : Sri Lanka; India.

## VII. Genus *Saropogon* Loew

*Saropogon* Loew, 1847, *Linn. Ent.* 2 : 439. Type-species : *Dasyopogon luctuosus* Wiedemann; original designation.

Medium sized flies; face gently convex; hind femur stouter, anterior tibia bears a short protuberance and a stout curved spine; marginal cell and all posterior cells open; epandrium of male genitalia undivided or shield-like, apically clefted, female iwth a circlet of spines on acanthophorites-

### 1. *Saropogon hulli* Joseph and Parui, 1981. *Oriental Ins.* 15 (1) : 27. Type locality : Poonmudi Range, Kerala

*Distribution* : India.

### 2. *Saropogon scalaris* Bigot. 1878. *Annals. Soc. Ent. Fr.* (5) 8 : 413. Tipe locality : "Indiae Orient."

VIII. Genus *Scylaticus* Loew

*Scylaticus* Loew, 1858, *Ofvers K. Svenska Vet Akad. Forh* 14 : 346. Type-species : *Scylaticus zonatus* Loew; monotypic.

Small flies; ocoiput highly developed, second antennal segment bead like, third segment laterally compressed carrying one or two microsegments with a dorsal spine on it; male genitalia with distinctly divided epandrium, hypandrium triangular, undivided, females bear five pairs of curved spines on acanthophorites.

*Scylaticus indicus* Bromley, 1939. *Indian J. Agric. Sci.* 8 (6) : 864. Type locality : India.

*Distribution* : India.

IX. Genus *Stenopogon* Loew

*Stenopogon* Loew, 1847, *Linn. Ent.* 2 : 453 ype-species : *Dasypogon sabaudus* Fabricius (1794); original designation.

Medium to large flies; third antennal segment with two microsegments and usually as long as the first two segments together; scutellum micropubescent, sternopleuron with a distinct patch of fine hairs, metanotal callosity with micropubescence only which separates the genus from *Scleropogon* Loew; males with epandrium widely divided from base, hypandrium forms a broad basal plate to triangular process, females with seven pairs of curved, blunt spines on acanthophorites.

1 *Stenopogon ambryon* (Walker)

*Dasypogon ambryon* Walker : 1849. *List. Dipt. Colln. Br. Mus.* 2 : 311. Type locality : West Bengal.

*Stenopogon ambryon* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 124.

*Distribution* : India.

2. *Stenopogon cinchonaensis* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 104. Type locality : Cinchona, Kerala.

*Distribution* : India.

3. *Stenopogon damias* (Walker)

*Dasypogon damias* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 313. Type locality : West Bengal.

*Stenopogon damias* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 124.

*Distribution* : India.

4. *Stenopogon kherai* Joseph & Parui, 1976. *Ent. Scand.* 7 (2) : 105. Type locality : Parasnath, Bihar.

*Distribution* : India.

5. *Stenopogon loewi* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional Paper No. 66 : 24. Type locality : Karnataka.

*Distribution* : India.

6. *Stenopogon manii* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 106. Type locality : Cinchona, Kerala.

*Distribution* : India.

7. *Stenopogon manipurensis* Joseph & Parui, 1976. *Ent. Scand* 7 (2) : 107. Type locality : Top of Tnanga, Manipur.

*Distribution* : India.

8. *Stenopogon mysorensis* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 107. Type locality : Agumbi Ghat, Karnataka.

*Distribution* : India.

9. *Stenopogon nathani* Joseph & Parui, 1976. *Ent. Scand* 7 (2) : 105. Type locality : Naduvattam, Tamil Nadu.

*Distribution* : India

10. *Stenopogon nigrofasciatus* Brunetti, 1928. *Ann. Mag. nat. Hist.* (10) 2 : 76. Type locality : Darjeeling, West Bengal.

*Distribution* : India

11. *Stenopogon oldroydi* Joseph & Parui, 1976. *Ent. Scand.* 7 (2) : 103. Type locality : Manali, Himachal Pradesh.

*Distribution* : India

12. *Stenopogon pradhani* Joseph & Parui, 1976. *Ent. Scand.* 7 (2) : 106. Type locality : Jammu & Kashmir.

*Distribution* : India.

13. *Stenopogon pulverifer* (Walker)  
*Dasyopogon pulverifer* Walker, 1851. *Insecta Saundersiana*, 1 : 98. Type locality : East India.

*Stenopogon pulverifer* (Walker) : Oldroyd, 1975, *A Catalog of Diptera of the Oriental Region*, 2 : 124.

*Distribution* : India.

14. *Stenopogon raven* (Bromley)  
*Scleropogon raven* Bromley, 1938. *Indian J. Agric. Sci.* 8 (6) : 865, Type locality : Kodai Kanal : Tamil Nadu.

*Distribution* : India.

15. *Stenopogon subtus* Bromley, 1935. *Rec Indian Mus.* 37 : 229. Type locality Punjab.

*Distribution* : India

### E. Tribe Xeno-myzini

#### Key to genera

- Third antennal segment small, seed-like with a long thin arista, vein M<sub>4</sub> emerging from posterior angle of discal cell, anal cell closed and stalked ... .. *Damalis* Fabricius
- Third antennal segment over twice the length of first two segments, its apex truncate with bristly spine, setae and slender bristle, vein M<sub>4</sub> emerging from the second basal cell, posterior cells four in number, anal cell open or closed near wing margin ... .. *Trigonomima* Enderlein

### I. Genus *Trigonomima* Enderlein

*Trigonomima* Enderlein, 1914. *Wein.; Ent. Ztg.* 33 : 164. Type species : *Trigonomima apipes* Enderlein; original designation.

Small flies; head height more than its width, apex of third antennal segment truncate with a short bristly spine dorsally and ventrally; thorax humpbacked, humeri bears some long hairs posteriorly; hind femur dorsally on basal half with a fringe of stiff hairs, mid and hind tibiae arched with a fringe of long bristly hairs dorsally and ventrally; wing with four posterior cells; abdomen widest at second segment, male genitalia short but with long and stout lateral process. Presence of four posterior cells and strongly humpbacked thorax separates this from *Damalina* Doleschall.

1. *Trigonomima anamaliensis* Joseph & Parui, 1980. *Bull. Zool. Surv. India* 2 (283) 197. Type locality : Kadampara, Tamil Nadu.

*Distribution* : India.

2. *Trigonomima fuscopoda* Joseph & Parui, 1981. *Bull. zool. Surv. India*, 4 (2) : 203. Type locality : Tipi and Kimin, Arunachal Pradesh.

*Distribution* India.

## II. Genus *Damalis* Fabricius

*Damalis* Fabricius, 1805, *Systema Antliatorum* : 147. Type species ; *Damalis planiceps* Fabricius.

Medium sized flies; head very short, about twice as high as long, third antennal segment bead-like with long terminal style; mesonotum very high and arched; hind trochanter much longer than others, swollen distally with a ventral protuberance bearing a bunch of stout bristles; wings longer than abdomen, fourth vein sinuous, marginal and all posterior cells widely open; hypandrium undivided or with a groove, proctiger large.

1. *Damalis artigasi* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 447. Type locality : Preemade, Kottayam District, Kerala.

*Distribution* : India.

2. *Damalis calicutensis* n, sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Chembra Peak Area Calicut District, Kerala.

*Distribution* : India.

3. *Damalis cederholmi* (Joseph & Purui). 1984. *Ent. Scand.* 15 : 448. Type locality : Poonmudi Range, Trivandrum District and Peermade, Kottayam District.

*Distribution* : India.

4. *Damalis claripennis* Bromley  
*Damalis claripennis* Bromley, 1935. *Rec. Indian Mus* 37 : 229. Type locality : Singla, Darjeeling.

*Xenomyza claripennis* (Bromley) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 126.

*Damalis claripennis* Bromley : Londt, 1985. *Bull. Zool. Nom.* 42(3) : 264.

*Distribution* : India.

5. *Damalis dentata* (Joseph & Parui), *Bull. zool. Surv. India* 8(1-3) : 93-94  
Type locality : Palni Hills, Kodai Kanal.

*Distribution* : India.

6. *Damalis dravidica* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 444. Type locality :  
Kerala and Karnataka.

*Distribution* : India.

7. *Damalis fusca* Walker  
*Damalis fusca* Walker, 1849. *List Dipt. Colin. Br. Mus.* 2 : 481. Type locality :  
Bengal.

*Xenomyza fusca* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental  
Region*, 2 : 127.

*Distribution* : India.

*Damalis fusca* Walker : Londt, 1985, *Bull. Zool. Nom.* 42(3) : 264:

8. *Damalis himalayensis* (Joseph & Parui), *Bull. zool. Surv. India* 8(1-3) : 94-95  
Type localities : Manali and Dehra Dun.

*Distribution* : India.

9. *Damalis indica* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 444. Type localities :  
Kerala & Karnataka.

*Distribution* : India.

- 10: *Damalis infuscata* (Joseph & Parui), 1984. *Oriental Ins.* 18 : 54. Type locality :  
Kandy, Sri Lanka.

*Distribution* : India; Sri Lanka.

11. *Damalis keralaensis* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 445. Type  
locality : Poonmudi Range, Trivandrum District, Kerala.

*Distribution* : India.

12. *Damalis mercaraensis* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 437. Type  
locality : Mercara, Karnataka.

*Distribution* : India,

13. *Damalis planiceps* Fabricius

*Damalis planiceps* Fabricius, 1805. *Syst. Antliat.* : 148. Type locality -  
Tranquebar.

*Xenomyza planiceps* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*. 2 : 127.

*Damalis planiceps* Fabricius : Londt, 1985, *Bull. Zool. Nom*, 42 (3) : 264,

*Distribution* : India.

14. *Damalis prytanis* Walker

*Dasyopogon prytanis* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 ; 263. Type locality. : Bengal.

*Xenomyza prytanis* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 127.

*Damalis prytanis* (walker) : Londt, 1985 : 42 (3) ; 264.

*Distribution* : India.

15. *Damalis pseudoartigasi* (Joseph & Parui), *Bull. zool. Surv. India* 8 (1-3) : 226-228. Type locality : Cinchona, Anamalai Hills, Tamil Nadu.

*Distribution* : India.

16. *Damalis rufoabdominalis* (Joseph & Parui), 1984. *Ent. Scand.* 15 : 445. Type locality : Kerala and Karnataka.

*Distribution* : India.

17. *Damalis speculiventris* de Meijere

*Damalis speculiventris* de Meijere, 1911. *Tijdschr. Ent.* 54 : 304. Type locality : Semarang, Java.

*Xenomyza speculiventris* ( de Meijere) : Oldroyd 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 128.

*Damalis speculiventris* de Meijere : Londt, 1985 : 42 (3) : 264

*Distribution* : India; Java; Sumatra.

## F. Tribe Stichopogonini

### Key to genera

- |  |     |     |   |
|--|-----|-----|---|
| 1. Arista long with filaments  | ... | ... | 2 |
| Arista without filaments   | ... | ... | 6 |
| 2. Third segment of antenna very long, as long as or longer than the basal two segments together | ... | ... | 3 |

- Third segment of antenna very short, usually much shorter than basal two segments together ... .. 4
3. Attenuate third antennal segment nearly three times the basal two segments together, hind femur with tooth-like projection near base ... .. *Merodontina* Enderlein
- Third antennal segment shorter than the basal two segments together, hind femoral projection curved at apex, male genitalia characteristic ... .. *Pseudomerodontina* Joseph & Parui
4. Arista plumose in one row, a tuft of stiff hairs medial to the haltere and below the metanotal callosity, epandrium bears a long, sigmoid, apically hooked process ... .. *Cophinopoda* Hull
- Arista plumose in one or two rows, no such tuft of hairs present, epandrium well developed, curved and apposed apically ... .. *Ommatius* Wiedemann
5. A pair of well developed bristles on ocelli, fourth posterior cell closed with a long stalk, male genitalia down turned with a hood-like cover formed by ninth tergite ... .. *Stichopogon* Loew
- Ocellar bristles weak or absent, fourth posterior cell narrowly closed or closed on margin, third antennal segment long and dilated ... .. *Clinopogon* Bezzi

### I. Genus *Clinopogon* Bezzi

*Clinopogon* Bezzi, 1910, *Annals. Hist.-Nat. Mus. Natn. Hung.*, 8 : 153. Type species : *sauteri* Bezzi, 1910 : 153; original designation.

Small flies; face plane with a dense mat of long hairs, third antennal segment with a thick microsegment bearing an apical spine; mesopleuron and sternopleuron bear a fringe of long, bristly hairs, scutellum with fringe of bristly hairs all over; hind femur slightly concave below with rather short fringe of pile below.

### **Clinopogon nicobarensis (Schiner)**

*Stichopogon nicobarensis* Schiner, 1868. In. *Reise der Osterreichischen Fregatte Novara, Dipt* : 161. Kondul, Nicobar Islands.

*Clinopogon nicobarensis* (Schiner) : Oldroyd, 1975, *A Catalog of Diptera of the Oriental Region*, 2 : 128.

*Distribution* : Nicobar and all islands round the Indian Ocean to Madagascar.

## II. Genus **Cophinopoda** Hull

*Cophinopoda* Hull, 1958, *Proc. Ent. Soc. Wash.* 60 : 251. Type species : *Asilus chinensis* Fabricius, 1794 : 383; original designation.

Robust flies; face prominent with long bristly hairs over the middle, antennal arista very long with plumes in one or two rows; metanotal callosity bare, second posterior cell broadly swollen at base, fourth posterior cell closed and stalked; ventral prongs of epandrium with wing-like process, medial process of hypandrium with a terminal brush of long pile.

The genus can be distinguished from the closely related *Ommatius* Wiedemann by the longer style of antenna, details in shape of epandrium and hypandrium and a characteristic patch of hairs above the haltere.

### **Cophinopoda chinensis (Fabricius)**

*Asilus chinensis* Fabricius, 1794. *Ent Syst.* 4 : 383. Type locality : China.

*flavescens* Fabricius, 1805. *Sist. Antliat.* : 169 (*Dasyogon*). Type locality : Sumatra.

*fulvidus* Wiedemann, 1821. *Dipt. Exot.* : 214 (*Ommatius*). Type locality : Java.

*coryphe* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 469. (*Ommatius*) Type locality : unknown.

*pennus* Walker, 1849. *Lis. Dipt. Colln. Br. Mus.* 2 : 469. (*Ommatius*). Type locality : Korea.

*Cophinopoda chinensis* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 129,

*Distribution* : China; India; Japan; Java, Korea; Sri Lanka; Sumatra.

### III. Genus *Merodontina* Enderlein

*Merodontina* Enderlein, 1914. *Zool. Anz.* 44 : 262. Type species : *Merodontina sikkimensis* Enderlein, 1914 : 262; original designation.

Presence of tooth-like projection at the base of hind femur separates the genus from its allied genus *Ommatius* Wiedemann.

1. *Merodontina indiana* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 30. Type localities Almora, Uttar Pradesh and Kalimpong Road, West Bengal.

*Distribution* : India.

2. *Merodontina robusta* Ramchandra Rao & Parui, 1969. *Zool. Anz.* 182 : 110. Type locality : Dengzi, Arunachal Pradesh.

*Distribution* : India.

3. *Merodontina sikkimensis* Enderlein, 1914. *Zool. Anz.* 44 : 262. Type localities : Darjeeling, West Bengal and Sikkim.

*Distribution* : India.

### IV. Genus *Michotamia* Macquart

*Michotamia* Macquart, 1838. *Dipt. Exot.* 1 (2) : 75. Type-species ; *Michotamia analis* Macquart, 1838 : 72; monotypic.

*Allocotosia* Schiner, 1866. *Verh. Zool. Bot. Ges. Wein.* 16 : 845. Type species : *Asilus auratus* Fabricius, 1794 : 387; original designation

The genus can be easily distinguished from *Ommatius* Wiedemann by the third antennal segment together with its short style bearing apical tuft of ventral hairs

1. *Michotamia analis* Macquart, 1838. *Dipt. exot.* 1 (2) : 72. Type locality : Java

*Distribution* : India. Java.

2. *Michotamia aurata* (Fabricius)  
*Asilusaurata* Fabricius, 1794. *Ent. Svst.* 4 : 387. Type locality : East India.  
*Lochites testaceus* Bigot, 1878. *Ann. Soc. Ent. Fr.* (10) 1 : 425. Type locality : Burma.

*Michotamia aurata* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 130.

*Distribution* : Burma ; India ; Pakistan ; Sulawesi.

3. *Michotamia fuscifemorata* Joseph & Parui, 1984. *Rec. zool. Surv India*, Occasional paper No. 65 : 26. Type localities : Walayar, Kerala and Bangalore, Karnataka.

*Distribution* : India.

4. *Michotamia indiana* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 109, Type locality : Chembra Peak area, Kerala.

*Distribution* : India.

5. *Michotamia macquarti* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 28. Type locality : Pilbht, Uttar Pradesh.

*Distribution* : India.

6. *Michotamia pruthii* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Kumaun Hills, Uttar Pradesh.

*Distribution* : India.

## V. Genus *Ommatius* Wiedemann

*Ommatius* Wiedemann, 1821. *Dipt. exot.* 1 : 213. Type species : *Asilus marginellus* Fabricius; designated by Coquillett (1910 : 579).

*Emphysomera* Schiner, 1866, *Verh. Zool. Bot. Ges. Wein.* 16 : 649-722. Type species *Asilus conopsoides* Wiedemann; original designation.

*Ommatius* Becker, 1925, *Ent. Mitt.* 14 : 78. Type species : *Asilus pingius* van der Wulp; designated by Engel (1926 : 37).

The genus can be easily distinguished by its short, pyriform third antennal segment and a long style bearing one or two rows of plumes throughout its length.

1. *Ommatius andamanensis* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 90. Type locality : Mannarghat, S. Andaman.

*Distribution* : India

2. *Ommatius arunachalensis* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 94. Type locality : Tamen, Arunachal Pradesh.

*Distribution* : India.

3. *Ommatius ater* Bromley, 1935. *Rec. Indian. Mus.* 14 : 227. Type locality : Singla, Bengal.  
*Distribution* : India.
4. *Ommatius bengalensis* n. sp. Joseph & Parui, *Oriental Ins.* (in press). Type locality : Sukna, West Bengal.  
*Distribution* : India.
5. *Ommatius carmichaeli* Bromley, 1935. *Rec. Indian Mus.* 37 : 225. Type locality Darjeeling, West Bengal.  
*Distribution* : India.
6. *Ommatius conopsoides* Wiedemann, 1828 *Aussereurop. Zweiff. Insket.* 1 : 422. Type locality : Sumatra.  
*Distribution* : Borneo ; India ; Sumatra.
7. *Ommatius dravidicus* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 87. Type locality : Agumbe Ghat, Karnatak.  
*Distribution* : India.
8. *Ommatius dubius* Joseph & Parui, 1987 *Bull. zool. Surv. India* 8 (1-3) : 96-98 Type locality : India.  
*Distribution* : India.
9. *Ommatius frauenfeldi* Schiner, 1868. In : *Reise der Osterreichischen Fregatte Novara.* Dipt. : 193. Type locality : Kombul, Nicobar Islands.  
*Distribution* : India.
10. *Ommatius fuscus* Joseph & Parui, 1984. *Oriental Ins.* 18 : 57. Type locality : Dhimbam, Tamil Nadu.  
*Distribution* : India.
11. *Ommatius gopalpurensis* Joseph & Parui, 1987. *Bull. zool. Surv. India*, 8 (1-3): 98-99. Type locality : Gopalpur, 24 Parganas, West Bengal.  
*Distribution* : India.
12. *Ommatius hardskyi* Joseph & Parui, 1984. *Ent. Scand.* 14 (1) : 93. Type localities : Coimbatore and West Bengal.  
*Distribution* : India.
13. *Ommatius hulli* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 88. Type locality: Tamil Nadu.  
*Distribution* : India.

14. *Ommatius indicus* Joseph & Parui, 1983, *Ent. Scand.* **14** (1) : 86. Type locality : Poonmudi Range, Karnataka.

*Distribution* : India.

15. *Ommatius jabalpurensis* Joseph & Parui, 1983. *Ent. Scand.* **14** (1) : 90. Type locality : Jabalpur, Madhya Pradesh.

*Distribution* : India.

16. *Ommatius jonesi*, n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Raniket, Uttar Pradesh.

17. *Ommatius kempi* Joseph & Parui, 1983. *Ent. Scand.* **14** (1) : 96. Type locality : Tura, Assam.

*Distribution* : India.

18. *Ommatius leucopogon* Wiedemann, 1824. *Analecta Ent.* : 25. Type locality : East India.

*Distribution* : India

19. *Ommatius lividipes* Bigot, 1981. *Proc. Asiat. Soc. Beng.* 1890 : 138. Type locality : Simla, Himachal Pradesh.

*Distribution* : India.

20. *Ommatius malabaticus* Joseph & Parui, 1984. *Oriental Ins.* **18** : 59. Type locality : Taliparamba, Malabar.

*Distribution* : India.

21. *Ommatius minor* Doleschall, 1857. *Natuurk. Tijdschr. Ned. Indie*, **14** : 394. Type locality; Ambon, Moluccas.  
*noctifer* Walker, 1859. *J. Linn. Soc. London*, **3** : 88. Type locality : Aru, Moluccas.  
*spinibarbis* van der Wulp, 1872. *Tijdschr. Ent.* **15** : 265. Type locality : Halmahera, Moluccas, Borneo.

*Distribution* : Borneo ; India ; Moluccas ; New Guinea.

22. *Ommatius nanus* Walker, 1851. *Insecta Saundersiana*, **1** : 153. Type locality : East India.

*Distribution* : India.

23. *Ommatius nicobarensis* Joseph & Parui, 1983. *Ent. Scand.* **14** (1) : 92. Type locality : Pashok, Campbell Bay, Great Nicobar.

*Distribution* : India.

24. *Ommatius peshokensis* Joseph & Parui, 1983. *Ent Scand.* 14 (1) : 92. Type locality : Pashok, Darjeeling District.

*Distribution* : India.

25. *Ommatius peregrinus* (van der Wulp)  
*Emphysomera peregrinus* van der Wulp, 1872. *Tijdschr. Ent.* 15 : 253.  
Type locality : Borneo ; Ambon and Ternate, Moluccas.

*Ommatius peregrinns* ( van der wulp ) : Oldroyd 1975.

*A Catalog of Diptera of the Oriental Region* 2 : 134.

*Distribution* : Borneo ; India ; Sumatra ; Moluccas.

26. *Ommatius pillaii* n. sp. Joseph & Parui, *Bull. zool. Surv. India* ( in press )  
Type locality : Silent Valley, Kerala.

*Distribution* : India.

1

27. *Ommatius ponti* Joseph & Parui, 1984. *Oriental Ins.* 18 : 58. Type localities :  
Muttia, Pakistan and N. W. India.

*Distribution* : India; Pakistan;

28. *Ommatius pseudodravidicus* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 91.  
Type locality : Jabalpur, Madhya Pradesh.

*Distribution* : India.

29. *Ommatius pseudokempi* Joseph & Parui. *Bull. Zool Surv. India* ( in press ).  
Type locality : Jhuripara, Orissa.

*Distribution* : India.

30. *Ommatius singlensis* Oldroyd. 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 134. Type locality : Singla, West Bengal ( preocc. renamed, *Ommatius nigrifemorata* Bromley ).  
*nigrifemorata* Bromley, 1935. *Rec. Indian Mus.* 37 : 226. (preocc Bigot 1876)

*Distribution* : India.

31. *Ommatius spathulatus* Doleschall, 1858. *Natuurk. Tijdschr. Ned. India*, 17 : 89. Type locality : Ambon, Moluccas.  
*platymelas* Walker, 1862 *J. Linn. Soc. London.* 6 (8) : Type locality : Moluccas.

*Distribution* : Moluccas, India (Nicobar Islands).

32. *Ommatius subgracilis* Bromley, 1935. *Rec. Indian Mus.* 37 : 226. Type locality : Kalimpong, West Bengal.

*Distribution* : India.

33. *Ommatius tamenensis* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 93. Type locality : Tamen, Arunachal Pradesh.  
*Distribution* : India
34. *Ommatius tandoni* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 96. Type locality : Tachidoni, Arunachal Pradesh  
*Distribution* : India
35. *Ommatius tenellus* Van der Wulp, 1879. *Trans. Ent. Soc. London*, 1879 : 97.  
Type locality : Haithalhim and Lahej, S Yemen.  
*Distribution* : India ; Yemen
36. *Ommatius truncatus* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 19. Type locality : Devarayaguda, Karnataka.  
*Distribution* : India.
37. *Ommatius tuberculatus* Joseph & Parui, 1983. *Ent. Scand.* 14 (1) : 87. Type localities - Cinchona, Kerala and Kotagiri Hills, Tamil Nadu.  
*Distribution* : India

#### VI. Genus *Pseudomerodontina* Joseph & Parui

*Pseudomerodontina* Joseph & Parui, 1976. *Ent. Scand.* 7 : 303. Type-species : *Pseudomerodontina jayaraji* Joseph & Parui ; monotypic.

The genus is distinguished from *Merodontina* Enderlein by its male genitalia, apically bent hind femoral projection and proportional length of antennal segments.

1. *Pseudomerodontina indica* Joseph & Parui, 1979. *Entomologist's mon. Mag.* 114 : 103. Type locality : Mercara, Karnataka.  
*Distribution* : India.
2. *Pseudomerodontina jayaraji* Joseph & Parui, 1976. *Ent. Scand.* 7 : 303. Type locality : Tamil Nadu.  
*Distribution* : India.

#### VII. Genus *Stichopogon* Loew

*Stichopogon* Loew, 1847, *Linn. Ent.* 2 : 499. Type-species : *Dasypogon elegantulus* Wiedemann, 1820 ; original designation.

The genus is characterised by the single row of mat-like bristles on epistome, third antennal segment with spine-like style, greatly enlarged anterior eye facets ; the male genitalia with downturned hood-like cover.

1. *Stichopogon albimystax* n. sp. Joseph & Parui, *Oriental Ins.* (in press). Type locality : Rudpur, Naini Tal District.  
*Distribution* : India.
2. *Stichopogon gymnurus* Oldroyd, 1948. *Entomologist's mon. Mag.* 84 : 262. Type locality : Dohnavur, Tinnelvalley District, Tamil Nadu.  
*Distribution* : India.
3. *Stichopogon inaequalis* (Loew)  
*Dasypogon inaequalis* Loew, 1847. *Linn. Ent.* 2 : 505. Type localities : Portugal ; Greece  
*Stichopogon inaequalis* (Loew) : Oldroyd, 1948. *Entomologist's mon. Mag.* 84 : 262.  
*Distribution* : Sri Lanka , India ; Palaearctic Region.
4. *Stichopogon indicus* Joseph & Parui, 1984. *Bull. Zool. Surv. India*, 6 : 249. Type locality : Ratnagiri, Maharashtra.  
*Distribution* : India.
5. *Stichopogon meridionalis* Oldroyd, 1948. *Entomologist's mon. Mag.* 84 : 261. Type locality : Karikal, Tamil Nadu.  
*Distribution* : India. 3
6. *Stichopogon ramakrishnai* n. sp. Joseph & Parui, *Oriental Ins.* (in press) Type locality : Gurji, Bobbili, Vizianagaram District, Andhra Pradesh.  
*Distribution* : India.
7. *Stichopogon tomentosus* Oldroyd, 1948. *Entomologist's mon. Mag.* 84 : 263. Type locality : Banhar, Bihar.  
*Distribution* : India.

#### G. Tribe ASILINI

- |   |     |                         |   |
|---|-----|-------------------------|---|
| 1. Submarginal cells three  | ... | ...                     | 2 |
| Submarginal cells two   | ... | ...                     | 4 |
| 2. First posterior cell closed and stalked, ocelli often reduced or concealed by pubescence, usually with only two submarginal cells with a broken spur vein at the base of second submarginal cell | ... |                         |   |
| First posterior cell open   | ... | ...                     | 3 |
| 3. Radial fork longer than second posterior cell, antennae closed together, apex of   |     | <i>Apoclea</i> Macquart |   |

	marginal cells bulbous, in female the tenth segment with numerous short spines, the apical pair longer, stout ( in <i>jagannathi</i> Roa first posterior cell closed )	...	...	<i>Philodicus</i> Loew
	Radial fork shorter than second posterior cell antennae wide apart, apex, of marginal cell not bulbous, in female tenth segment without spines	...	...	<i>Promachus</i> Loew
4.	Metanotal slopes pubescent or pollinose		...	5
	Metanotal slopes bristly pilose	...	...	6
5.	Face prominent below but scarcely gibbous, antennal arista much longer than the third segment, a long spur vein at base of anterior branch of third vein, anterior cross-vein straight	...		<i>Anacinaces</i> Enderlein
	Facial gibbosity prominent which begins from below antenna, antennal style bristle tipped, not longer than third segment, anterior cross-vein strongly oblique	...	...	<i>Neolophonotus</i> Engel
6.	Fourth posterior cell bulged forward causing discal cell strongly constricted, in male marginal and submarginal cells bulged outward with costa, first vein almost fused with costa, in female ovipositor strongly compressed laterally	...		<i>Clephyroneura</i> Becker
	Fourth posterior cell not bulged forward, discal cell not constricted, ovipositor of different pattern	...	...	7
7.	Tergites with fine pile or bristly hairs except sometimes first tergite, facial gibbosity strong	...	...	8
	Several tergites with stout or slender bristles along lateral part of posterior margins, face usually weakly produced	...	...	10

8. Basitarsi of anterior pair thickened,  
male genitalia pedunculate with  
a gap between epandrium and  
gonocoxite, female ovipositor  
composed of five segments,  
terminal three being laterally  
compressed ... .. *Astochia* Becker
- Basitarsi normal, male genitalia not  
pedunculate, ovipositor not telescopic ... .. 9
9. Antennal style thick and stout, facial  
gibbosity shining black in middle  
and abrupt below, epandrium  
curved at apex with middorsal  
tooth, apex of aedeagus with a  
hook-like filament ... .. *Rhadiurgus* Loew
- Antennal style of normal length, facial  
gibbosity strong, arising gradually,  
epandrium bluntly rounded apically  
and without middorsal tooth,  
aedeagus trifid ... .. *Asilus* Linnaeus
10. Second submarginal cell developed  
slenderly and gradually from base,  
third antennal segment very short,  
arista quite long and slender, face  
convex with some bristles above mystax,  
proctiger directed vertically upward  
or backward ... .. *Senoprosopis* Macquart
- Second submarginal cell wide at base,  
and not developed slenderly  
and gradually ... .. 11
11. Occipital bristles strongly proclinate,  
tergites with distinct bristles  
posteriorly, strong dorsocentral  
bristles upto mesonotal suture,  
epandrium moderately long with a  
deep lateral constriction, five segmented  
ovipositor elongate, laterally compressed ... .. *Neoitamus* Osten Sacken
- Occipital bristles straight or slightly  
curved, ovipositor not elongate  
and slender ... .. 12
12. Epandrium elongate and slender, curved  
apically inward with a spur,  
ovipositor with two upturned spines ... .. *Philonicus* Loew
- No enclosed space between epandrium,  
ovipositor with two upturned spines ... .. 13

13. Disc of scutellum and abdominal tergites from second to fifth matted with stiff piles, antennal style quite short and stout ... *Trichomachimus* Engel  
 Scutellum and abdomen not densely pilose ... 14
14. Facial tubercle highly developed extending almost upto antenna, scutellar disc with long bristly hairs, eighth sternite lappet round at apex, aedeagus three pronged ... *Machimus* Loew  
 Facial tubercle less developed, eighth sternite of different shape, aedeagus without prongs ... 15
15. Mid femur with a cluster of spinous bristles, and mid tibia with a row of spinous bristles along base ... *Hoplopheromerus* Becker  
 Mid femur and tibia without such spines but may be with strong, isolated hairs ... 16
16. Epandrium highly developed and complicated, ovipositor small and not laterally compressed, dorsocentral hairs crossing transverse suture towards front ... 17  
 Epandrium less developed and less complicated, ovipositor long and laterally compressed, dorsocentral hairs not crossing beyond transverse suture towards front ... *Neomochtherus* Osten Sacken
17. Third antennal segment very slender and attenuate, either as long as or little longer than arista, epandrium with a deep lateral terminal notch ... *Orophotus* Becker  
 Third antennal segment short, oval, half as long as arista, epandrium with a deep cleft ... *Heligmoneura* Bigot

### I. Genus *Anacinaces* Enderlein

*Anacinaces* Enderlein 1914, *Zool. Anz.*, 44 : 257. Type species : *Anacinaces gigas* Enderlein, 1914 : 258; original designation.

Very large flies ; occiput bears numerous fine long hairs upto middle, third antennal segment shorter than first with a very long style, mystax exceptionally stout ; second submarginal cell narrow at base and flared at apex ; epandrium with a dorsoapical notch, gonocoxite half as long as epandrium, prominent laterally, hypandrium large, obtuse,

*Anacinaces rufiventris* (Macquart)

*Erax rufiventris* Macquart, 1838, *Dipt. Exot.* 1 (2) : 108. Type locality : Bengal.  
*Anacinaces rufiventris* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 136.

*Distribution* : India.

## II. Genus *Apoclea* Macquart

*Apoclea* Macquart, 1838. *Dipt. Exot.* 1 (2) : 119. Typespecies : *Apoclea pallida* Macquart, 1838, 119 ; monotypic = *fuscana* Macquart = *Asilus algirus* Linnaeus.

Face plane dorsally and prominent below, mystax extends upto base of antennae ; anterior femur with a few bristles ventrally at basal half ; marginal cell of wing closed and stalked, first posterior cell usually closed, fourth posterior cell closed and stalked, an appendiculate stump vein sometimes may exist between anterior and posterior branch of third vein ; abdomen narrower than thorax, epandrium large, prominent, ovipositor at apex with two or three rows of upturned bristles.

1. *Apoclea indica* Bromley, 1935. *Rec. Indian Mus.* 32 : 225. Type locality : Pearl Bank Fisheries, Tamil Nadu.

*Distribution* : India.

2. *Apoclea rajasthanensis* Joseph & Parui, 1984. *Bull. zool. Surv. India*, 6 (1-3) : 247. Type locality : Narana, Rajasthan.

*Distribution* : India.

## III. Genus *Asilus* Linnaeus

*Asilus* Linnaeus, 1758, *Syst. Nat.* 10 : 605. Type-species : *Asilus crabroniformis* Linnaeus ; designated by Latreille (1810 : 443).

Face on lower half distinctly gibbous, third antennal segment as long as or slightly longer than the combined length of first two segments, style as long as or slightly shorter than third segment; metanotal callosity densely covered with bristles and hairs ; base of second submarginal and second posterior cells distinctly widened ; bristles restricted to first tergite or rarely upto second tergite, epandrium long, bluntly rounded apically, gonocoxite about two-thirds of epandrium and turned upwards, proctiger erect, hypandrium well-produced, aedeagus three pronged, ovipositor comprises of eighth segment having bristles all over and ninth and tenth segments.

1. *Asilus aurimystax* Bromley 1928. *Amer. Mus. Novit.* 336 : 3. Type locality : Yen Ping, China.  
The synonyms of this species are listed by Oldroyd 1975 : 137.  
*Distribution* : China, Fukien; India.
2. *Asilus ephippium* Macquart. 1859. *Dipt. Exot. Suppl.* 5 : 62. Type locality : "D" Asie India".  
The synonyms of this species are listed by Oldroyd 1975 : 138.  
*Distribution* : India; Sri Lanka.
3. *Asilus laetus* Wiedemann, 1824. *Analecta Ent.* : 24. Type locality : India Orient.  
The synonyms of this species are listed by Oldroyd 1975 : 138.  
*Distribution* : India.
4. *Asilus pusio* Wiedemann, 1819. *Zool. Mag., (Wied.)* : 1 (3) : 36. Type locality : India, Orient.  
*Distribution* : India; Java
5. *Asilus trifarius* Macquart, 1838. *Dipt. Exot.* 1 (2) : 142. Type locality : Pondichery.  
*Distribution* : India.

#### IV Genus *Astochia* Becker

*Astochia* Becker, 1913. *Ann. Mus. Zool. Acad., St. Peters-bourgh*, 17 : 538,  
Type-species : *Astochia metatarsata* Becker ; monotypic.

Face gibbous on lower half with numerous bristly hairs, third antennal segment as long as the first two together, with very long style ; hind femur swollen at apex, anterior femur with a fringe of bristly hairs ventrally. anterior basitarsi robust ; epandrium and gonocoxite separated by a conspicuous gap, female genitalia telescopic consisting of last five segments.

1. *Astochia bromleyi* Joseph & Parui, 1984. *Oriental Ins.* 18 : 61. Type locality : Dohnavur, Tamil Nadu.  
*Distribution* : India.
2. *Astochia canis* Bromley, 1935 *Rec. Indian. Mus.* 37 : 223. Type locality : Kamiang, Upper Burma.  
*Distribution* : Burma; India.
3. *Astochia guptai* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 20. Type locality : Delhi.  
*Distribution* : India.

4. *Astochia hindostani* (Ricardo)  
*Neoitamus hindostani* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 62. Type locality Dharmoti, Bhowali, Kumaon.  
*Astochia hindostani* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 139.  
*Distribution* : India.
5. *Astochia hulli* Joseph & Parui, 1970. *Pacific Ins.* 12 (3) : 507. Type locality : Tipi, Arunachal Pradesh.  
*Distribution* : India.
6. *Astochia jairami* Joseph & Parui, 1981, *Oriental Ins.* 15 (1) : 19. Type locality : Rajolak Forest, West Bengal.  
*Distribution* : India.
7. *Astochia longistylus* (Wiedemann)  
*Asilus longistylus* Wiedemann, 1828. *Aussereurop. Zweifl. Insekt*, 1 : 433.  
Type locality : Java.  
Synonyms of this species are listed by Oldroyd 1975 : 139.  
*Astochia longistylus* (Wiedemann) : Oldroyd, 1975 *A Catalog of Diptera of the Oriental Region* 2 : 139.  
*Distribution* : Nicobar Island; Philippines; Sumatra; Moluccas.
8. *Astochia maculipes* (Walker)  
*Trupanea maculipes* Walker, 1855. *List. Dipt. Colln. Br. Mus.* 7 (Suppl.) 3 : 605. Type locality : Hong Kong, China.  
*Astochia maculipes* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 139.  
*Distribution* : India.
9. *Astochia muralidharani* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Tripura.  
*Distribution* : India.
10. *Astochia pseudoguptai* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Rangli, Sikkim.  
*Distribution* : India.
11. *Astochia silcharensis* Joseph & Parui, 1984. *Oriental Ins.* 18 : 60. Type locality : Kanny Koorg, Assam.  
*Distribution* : India.
12. *Astochia tiwarii* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 18. Type locality : Coimbatore, Tamil Nadu.

#### V. Genus *Clephydroneura* Becker

*Clephydroneura* Becker, 1925, *Ent. Mitt.* 14 : 68. Type species : *Asilus xanthopus* Wiedemann, designated by Oldroyd (1938 : 450).

Face gibbous, lower half bearing hairs and bristles, first antennal segment more than double the second, third segment short, costa bulged in male, fourth posterior cell produced anteriorly reducing the width of discal cell, epandrium long and slender, proctiger long and erect, gonocoxite and clasper bent downwards forming a gap from lateral side, female genitalia with the last three segments compressed laterally.

1. *Clephydroneura anamalaiensis* Joseph & Parui, 1977. *Ent Scand.* 10 : 40. Type locality : Cinchona, Kerala.

*Distribution* : India.

2. *Clephydroneura annulatus* (Fabricius)  
*Asilus annulatus* Fabricius, 1775. *Syst. Ent.* : 794. Type locality : East India.  
*Asilus barium* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 426. Type locality : Sri Lanka.

*Clephydroneura annulatus* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 140.

*Distribution* : India ; Sri Lanka.

3. *Clephydroneura apicalis* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 462. Type locality : Tinnevalley, S. India.

*Distribution* : India.

4. *Clephydroneura bangalorensis* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 12. Type locality : Bangalore, Karnataka.

*Distribution* : India.

5. *Clephydroneura bannerghattaensis* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 10. Type locality : Bannerghatta, Karnataka.

*Distribution* : India.

6. *Clephydroneura bengalensis* (Macquart)  
*Asilus bengalensis* Macquart, 1838. *Dipt. Expt.* 1 (2) : 141. Type locality : Bengal.

*Clephydroneura bengalensis* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 140.

*Distribution* : India ; Java ; Philippines.

7. *Clephydroneura brevipennis* Oldroyd, 1938, *Ann. Mag. nat. Hist.* (11) 1 : 469. Type localities : Top Slip, Tamil Nadu ; Thekkadi, Kerala.

*Distribution* : India.

8. *Clephydroneura distincta* Oldroyd, 1938, *Ann. Mag. nat. Hist.* (11) 1 : 467. Type locality : Coonoor, Tamil Nadu.

*Distribution* : India.

9. *Clephroneura duvaucelii* (Macquart)  
*Asilus duvaucelii* Macquart, 1838. *Dipt. Exot.* 1 (2) : 141. Type locality Bengal.  
*Clephroneura duvaucelii* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 141.  
*Distribution* : India.
10. *Clephroneura exilis* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 468. Type locality : Burliyar, Tamil Nadu.  
*Distribution* : India.
11. *Clephroneura flavicornis* (Macquart)  
*Asilus flavicornis* Macquart, 1838. *Dipt. Exot.* 1 (2) : 142. Type locality : Bengal.  
*Asilus iamenus* Walker, 1849. *List. Dipt. Colln. Br. Mus.* 2 : 428. Type locality : Bengal.  
*fusca* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 455 (*flavicornis* ssp.). Type locality : Top Slip, Tamil Nadu.  
*Clephroneura flavicornis* (Macquart) : Oldroyd, 1975, *A Catalog of Diptera of the Oriental Region*, 2 : 141.  
*Distribution* : India.
12. *Clephroneura ghorpadei* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 4. Type locality : Bangalore, Karnataka.  
*Distribution* : India.
13. *Clephroneura gravelyi* Joseph & Parui, 1979. *Ent. Scand.* 10 : 38 Type locality : Koyana Valley, Rajasthan.  
*Distribution* India.
14. *Clephroneura gymnura* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 470 Type locality : Khangpur, Uttar Pradesh.  
*Distribution* : India.
15. *Clephroneura indiana* Joseph & Parui, 1979. *Ent. Scand.* 10 : 34 Type locality : Naduvattam, Tamil Nadu,  
*Distribution* : India.
16. *Clephroneura karntakaensis* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 9. Type locality : Bangalore, Karnataka,
17. *Clephroneura lali* Joseph & Parui, 1979. *Ent. Scand.* 10 : 36. Type locality : Naduvattam, Tamil Nadu.  
*Distribution* : India.
18. *Clephroneura martini* Joseph & Parui, 1979, *Ent. Scand.* 10 : 37. Type locality : Nagarjunakonda, Andhra Pradesh.  
*Distribution* : India.

19. *Clephyroneura minor* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 461.  
Type locality : Khasi Hills, Assam.

*Distribution* : India.

20. *Clephyroneura mudigorensis* Joseph & Parui, 1984. *Rec. zool. Surv. India*,  
Occasional paper No. 66 : 14. Type locality ; W. mudigore, Karnataka.

*Distribution* : India.

21. *Clephyroneura mysorensis* Joseph & Parui, 1984, *Rec. zool. Surv. India*.  
Occasional paper No. 66 : 5. Type localities : Bangalore and Bandipur,  
Karnataka.

*Distribution* : India

22. *Clephyroneura nelsoni* Joseph & Parui, 1979. *Ent. Scand.* 10 : 36. Type  
locality : Shevaroy Hills, Tamil Nadu.

*Distribution* India.

23. *Clephyroneura nilaparvata* Joseph & Parui, 1979. *Ent. Scand.* 10 : 39. Type  
locality : Naduvattam, Tamil Nadu.

*Distribution* India.

24. *Clephyroneura pulla* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 467. Type  
locality : Vizagapatana, Andhra Pradesh.

*Distribution* India.

25. *Clephyroneura robusta* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional  
paper No. 66 : 7. Type locality : Mudigore, Karnataka.

*Distribution* India.

26. *Clephyroneura semirufa* Oldroyd, 1938. *Ann. Mag. nat. Hist.* (11) 1 : 465. Type  
locality Madukarai, Tamil Nadu.

*Distribution* India.

27. *Clephyroneura sundaica* (Jaenicke)  
*Asilus sundaica* Jaenicke, 1867. *Abh. Senckenb. Naturf. Ges. Wein*, 6 : 363.  
Type locality : Java.

*Clephyroneura sundaica* (Jaenicke) : Oldroyd, 1975. *A Catalog of Diptera of  
the Oriental Region*, 2 : 141.

*Distribution* India ; Java ; Malaya ; Thailand.

28. *Clephyroneura wilcoxi* Joseph & Parui, 1979. *Ent. Scand.* 10 : 35. Type locality :  
Coimbatore, Tamil Nadu.

*Distribution* India.

VI. Genus *Heligmoneura* Bigot

*Heligmoneura* Bigot, in Thomson 1858, *Arch. Ent.* 2 : 356. Type-species : *Heligmoneura modesta* Bigot, 1858 : 356 ; monotypic.

*Cinadus* van der Wulp, 1898, *Tijdschr. Ent.* 41 : 139. Type-species *Cinadus spretus* van der Wulp ; designated by Hull (1952 : 584).

*Haplonota* Frey, 1934. *Revue Suisse Zool* 41 : 316, Type-species: *Haplonota elegans* Frey, 1934 : 316 ; monotypic.

*Chaetogonophora* Hull, 1962, *Bull. U. S. Natl. Mus.* 224 : 585. Type-species : *Chaetogonophora chaetoprocta* Hull, 1962 : 585 ; original designation.

*Heligmoneura* Bigot : Oldroyd, 1975. *A Aatalog of Diptera of the Oriental Region*, 2 : 142.

Face weakly produced ; vein  $R_5$  distinctly sinuous ; male genitalia club-shaped with clefted epandrium, ovipositor non compressed with downcurved lamellae.

1. *Heligmoneura anamalaiensis* Joseph & Parui, 1980. *Ent. Scand.* 11 : 288, Type locality : Anamalai Hills, Tamil Nadu.

*Distribution* : India.

2. *Heligmoneura andamanensis* Joseph & Parui, 1980. *Ent. Scand.* 11 : 284. Type locality : Andaman Islands.

*Distribution* : India.

3. *Heligmoneura bengalensis* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Darjeeling, West Bengal.

*Distribution* : India.

4. *Heligmoneura bigoti* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 17. Type locality : Mudigore, Karnataka.

*Distribution* : India.

5. *Heligmoneura chaetoprocta* Hull, 1962. *Bull. U. S. Natn. Mus.* 224 : 585. Type locality : Calcutta.

*Distribution* : India.

6. *Heligmoneura cheriani* Joseph & Parui, 1980. *Ent. Scand.* 11 : 286. Type locality : Anamalai Hills, Tamil Nadu.

*Distribution* : India.

7. *Heligmoneura congeda* (Walker)  
*Asilus congeda* Walker, 1851. *Insecta Saundersiana*, 1 : 138. Type locality : East India.  
*Heligmoneura congeda* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*; 2 : 142.  
*Distribution* : India.
8. *Heligmoneura dravidica* Joseph & Parui, 1980. *Ent. Scand.* 11 : 272. Type locality : Marall, Himachal Pradesh.  
*Distribution* : India.
9. *Heligmoneura frommeri* Joseph & Pauri, 1980. *Ent. Scand.* 11 : 287. Type locality : Mercara, Karnataka.  
*Distribution* : India.
10. *Heligmoneura incisularis* n. sp. Joseph & Parui, *Bull. zool. Surv. India.* (in press). Type locality : Mussoorie; Uttar Pradesh.  
*Distribution* : India.
11. *Heligmoneura kumaunensis* Joseph & Parui, 1980. *Ent. Scand.* 11 : 285. Type locality : Almora, Uttar Pradesh.  
*Distribution* : India.
12. *Heligmoneura lavignei* Joseph & Parui, 1980. *Ent. Scand.* 11 : 283. Type locality : Darung, Arunachal Pradesh.  
*Distribution* : India.
13. *Heligmoneura poonmudiensis* Joseph & Parui, 1980. *Ent. Scand.* 11 : 287. Type locality : Poonmudi Range, Kerala.  
*Distribution* : India.
14. *Heligmoneura ricardoi* Joseph & Parui, 1980. *Ent. Scand.* 11 : 283. Type locality : Lebong, West Bengal.  
*Distribution* : India.
15. *Heligmoneura shimogaensis* Joseph & Parui, 1980. *Ent. Scand.* 11 : 289. Type locality : Agumbi Ghat, Karnataka.  
*Distribution* : India.
16. *Heligmoneura tenuicornis* (Walker)  
*Asilus tenuicornis* Walker, 1860. *J. Linn. Soc. London*, 4 : 108. Type locality : Sulawesi.  
*Cinadus spurius* Van der Wulp, 1898. *Tijdschr. Ent.* 41 : 140. Type locality : Toli Toli, Sulawesi.

*Heligmoneura tenuicornis* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 143.

*Distribution* : India ; Sulawesi.

17. *Heligmoneura trisignata* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 61.  
Type localities : Veddachalam and Adoni, South India.

*Distribution* : India.

18. *Heligmoneura tsacasi* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press).  
Type locality : India.

*Distribution* : India.

19. *Heligmoneura yenpingensis* (Bromley)

*Asilus yenpingensis* Bromley, 1928. *Mus. Norit.* 336 : 2. Type locality : Yen ping, China.

*Heligmoneura yenpingensis* (Bromley) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 143.

*Distribution* : China ; India.

## VII Genus *Hoplopheromerus* Becker

*Hoplopheromerus* Becker, 1925. *Ent. Mitt.*, 14 : 241. Type-species.: *Asilus armatipes* Macquart ; designated by Hull.

Large flies; third antennal segment oval but narrowed at apex; mid femur with an anterior cluster of numerous, strong, spinous bristles, mid tibia bears a row of spinous bristles antero-ventrally ; first posterior cell narrowed in the middle but broadened apically to more than double its middle width, epandrium bifurcate beyond middle.

*Hoplopheromerus armatipes* (Macquart)

*Asilus armatipes* Macquart, 1855. *Dipt. Exot. Suppl.* 5 : 63. Type locality N. China.

*Asilus shalmus* Walker, 1857. *Trans. Ent. Soc. London*, 4 : 131. Type locality : N. China.

*Hoplopheromerus armatipes* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of Oriental Region*, 2 : 143.

*Distribution* : China ; Taiwan ; Japan ; Mangolia ; India.

Though not published, a specimen collected from India is present in the National Collection of the ZSI, Calcutta.

## VIII. Genus *Machimus* Loew

*Machimus* Loew, 1849, *Linn. Ent.* 4 : 1. Type-species : *Asilus chrystis* Meigen ; designated by Coquillett, 1910.

The flies of this genus can be separated from the remaining genera of the tribe by the prominent facial gibbosity with dense bristles ; ovipositor laterally strongly compressed with eighth segment moderately long and ninth segment short.

1. *Machimus angularis* (Ricardo)  
*Tolmerus angularis* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 64. Type locality  
 Mussoorie, Uttar Pradesh.  
*Machimus angularis* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the  
 Oriental Region.* 2 : 144.  
*Distribution* : India
2. *Machimus assamensis* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 46. Type  
 locality : Assam.  
*Distribution* : India.
3. *Machimus aurimystax* (Bromley)  
*Tolmerus aurimystax* Bromley, 1928. *Amer. Mus. Novit.* 33 (6) : 3 Type locality:  
 Yen Ping, China.  
*Machimus aurimystax* (Bromley) : Oldroyd, 1975 *A Catalog of Diptera of the  
 Oriental Region,* 2 : 144.  
*Distribution* : China ; India.
4. *Machimus bengalensis* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
 Type locality : Darjiling, West Bengal.  
*Distribution* : India.
5. *Machimus bicolor* Joseph & Parui, 1984. *Oriental Ins.* 18 : 63. Type locality :  
 Runi Thach, Kangra District, Himachal Pradesh.  
*Distribution* : India.
6. *Machimus calicutensis* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
 Type locality ; Chembra Peak Area Kerala.  
*Distribution* : India
7. *Machimus cheriani* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
 Type locality : Morch Tea Plantation, Manipur.  
*Distribution* : India.
8. *Machimus cinchonaensis* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
 Type locality : Cinchona, Tamil Nadu.  
*Distribution* : India.
9. *Machimus coerulescens* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 47. Type  
 locality : Bhim Tal, Uttar Pradesh.  
*Distribution* : India.

10. *Machimus dravidicus* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press):  
Type locality : Kodai Kanal, Tamil Nadu.  
*Distribution* : India.
11. *Machimus dubius* Ricardo, 1910. *Ann. Mag. nat. Hist.* (9) 3 : 47. Type  
locality : Dharmati, Uttar Pradesh.  
*Distribution* : India.
12. *Machimus hirtipes* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 49. Type  
locality : Khasi Hills, Assam.
13. *Machimus incisularis* Bromley, 1935. *Rec. Indian. Mus.* 37 : 220. Type  
locality : Ghumti, West Bengal.  
*Distribution* : India.
14. *Machimus indianus* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 50. Type  
localities : Takula and Shamkhet, Uttar Pradesh.  
*Distribution* : India.
15. *Machimus indicus* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press). Type  
localities : Kapkot, Ranikhet and Bhowali, Uttar Pradesh.  
*Distribution* : India.
16. *Machimus infraferalis* Bromley, 1935. *Rec. Indian Mus* 37 : 221. Type  
locality : Kalimpong, West Bengal.  
*Distribution* : India.
17. *Machimus intilis* Bromley, 1935. *Rec. Indian Mus.* 37 : 222. Type locality :  
Dalhousi, Himachal Pradesh.  
*Distribution* : India.
18. *Machimus Keralaensis* n. sp. Joseph & Parui, *Rec. zool, Surv India* (in press.)  
Type locality : Cinchona, Kerala,  
*Distribution* : India.
19. *Machimus khasiensis* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 51. Type  
locality : N. Khasi Hills, Assam.  
*Distribution* : India.
20. *Machimus montanus* Ricardo, 1917. *Ann. Mug. nat. Hist.* (9) 3 : 52. Type  
locality : Kotagiri, Tamil Nadu.  
*Distribution* : India.
21. *Machimus mussooriensis* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
Type locality : Mussoorie, Uttar Pradesh.  
*Distribution* : India.

22. *Machimus nicobarensis* (Schiner)  
*Tolmerus nicobarensis* Schiner, 1868. *In Reise der Oesterreichischn Fregatte Novara, Dipt.* : 192. Type locality : Nicobar.  
*Machimus nicobarensis* (Schiner) : Oldroyd, 179<sup>5</sup>. *A Catalog of Diptera of the Oriental Region, 2* : 145.  
*Distribution* : India.
23. *Machimus nigrinus* Ricardo, 1619. *Ann. Mag. nat. Hist.* (9) 4 : 53. Type locality : Kumaon, Uttar Pradesh.  
*Distribution* : India.
24. *Machimus pallipes* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 65. Type locality : Kumaon, Uttar Pradesh,  
*Distribution* : India.
25. *Machimus parvus* Ricardo, 1919. *Ann. Mag. nat. Hist.* 9 (3) : Type locality : Kotagirt, Tamil Nadu.  
*Distribution* : India.
26. *Machimus punjabensis* Bromley, 1935. *Rec. Indian Mus.* 3 : 220. Type locality : Baijnath, Himachal Pradesh.  
*Distribution* : India.
27. *Machimus ricardoi* (Bromley)  
*Asilus ricardoi* Bromley, 1935. *Rec. Indian Mus.* 37 : 219. Type locality : Simla, Himachal Pradesh.  
*Machimus ricardoi* (Bromley) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region, 2* : 145.  
*Distribution* India.
28. *Machimus rufipes* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 69. Type locality : Singla, West Bengal.  
*Distribution* : India.
29. *Machimus scarbroughi* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press).  
Type locality : Mussoorie, Uttar Pradesh.  
*Distribution* : India.
30. *Machimus smithi* n. sp. Joseph & Parui, *Rec. zool. Surv. India* (in press). Type locality : Coimbatore District, Tamil Nadu.  
*Distribution* : India.
31. *Machimus tibialis* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 55. Dehra Dun, Uttar Pradesh.  
*Distribution* : India.

### IXX Genus *Neoitmus* Osten Sacken

*Neoitmus* Osten Sacken, 1878, *Smithson. Misc. Collns.* 16 : 82, 235 'replacement name of *Itamus* Loew, 1849 : 84). Type-species : *Asilus cyanurus* Loew ; automatic.

*Trichoitamus* White, 1918, *Pap. Proc. R. Soc. Tasmania.* 1917 : 91. Type-species : *Asilus rudis* Walker, 1855 ; original designation.

Face conspicuously gibbous on lower half, third antennal segment bears a microsegment, style nearly as long as the third segment ; metanotal callosity pilose or bristly, venation as in *Asilus* except base of second posterior cell moderately widened ; all tergites with bristles on posterior margin, epandrium broad at base, slightly curved in the middle, and with deep lateral constriction, gonocoxite bent downwards forming a gap between it and epandrium, hypandrium long, prominent, proctiger nearly erect, ovipositor composed of five segments being compressed laterally with the tenth segment free.

1. *Neoitmus barsilensis* Joseph & Parui, 1984. *Rac. Indian Mus.* Occasional paper No. 66 : 22. Type locality : Barsil, Uttar Pradesh.

*Distribution* : India

2. *Neoitmus bengalensis* (Joseph & Parui)  
*Astochia bengalensis* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 21.  
*Neoitmus bengalensis* (Joseph & Parui) : *Bull. zool. Surv. India* (in press). Type locality : Darjeeling, West Bengal.

*Distribution* : India.

3. *Neoitmus calcuttaensis* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Calcutta, West Bengal.

*Distribution* : India

4. *Neoitmus dhenkundensis* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Dhenkund, Himachal Pradesh.

*Distribution* : India.

5. *Neoitmus grahami* n. sp. Joseph & Parui, *Bull. Zool. Surv. India* (in press.) Type locality : Naini Tal, Uttar Pradesh.

*Distribution* : India.

6. *Neoitmus grandis* Ricardo, 1919. *Annt Mag.-nat. Hist.* (9) 3 : 61 Type locality : Kangra, Himachal Pradesh.

*Distribution* : India.

7. *Neoitmus himalayensis* Joseph & Parui, 1984. *Oriental Ins.* 18 : 64. Type locality : Kangra Valley, Himachal Pradesh.

*Distribution* : India.

8. *Neoitamus inornatus* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 63. Type locality : Mussoorie, Uttar Pradesh.  
*Distribution* : India.
9. *Neoitamus khasiensis* Bromley, 1935. *Rec. Indian Mus.* 37 : 223. Type locality : Mawphlong, Meghalaya.  
*Distribution* : India.
10. *Neoitamus mussooriensis* Joseph & Parui, 1984. *Rec. zool. Surv. India*, Occasional paper No. 66 : 21. Type locality : Mussoorie, Uttar Pradesh.  
*Distribution* : India.
11. *Neoitamus tropicus* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 69. Type locality : Sat Tal, Uttar Pradesh,  
*Distribution* : India.

#### X. Genus *Neolophonotus* Engel

*Neolophonotus* Engel, 1925, *Bull. Soc. R. Ent. Egypte*, 1924 : 348. Type-species : *Asilus chalcogaster* Wiedemann, 1819 (as *chalcogaster*, Loew 1860); original designation.

Face gently convex beginning from below antennae and reaching maximum on subepistome, covered with numerous bristles, antennal style bristle tipped, as long as or shorter than third segment; mesonotum compressed medially, metanotal callosity pubescent, scutellum bears three to four pairs of bristles on border; all femora and tibiae with fringe of long hairs; only first abdominal segment with lateral bristles, epandrium clefted at base, gonocoxite short, hypandrium broad, laterally compressed, female proctiger with an apical spine-like projection.

*Neolophonotus indicus* Bromley, 1935. *Rec. Indian Mus.* 37 : 222. Type locality : Amarkantak, Madhya Pradesh.

*Distribution* : India.

#### XI. Genus *Neomochtherus* Osten Sacken

*Neomochtherus* Osten Sacken, 1878, *Smithson. Misc. Collns.*, 16 : 82, 235 (replacement name of *Mochtherus* Loew, 1849). Type-species : *Asilus pallipes* Meigen, automatic.

Face only slightly produced above epistome with bristles, antennal style shorter than third segment; anterior and mid femora with a few

long bristles ventrally on basal half, anterior tibia with a ventral fringe of bristly hairs ; each abdominal tergite with bristles and setae across the middle on posterior margin, epandrium large, swollen, notched and apposed at apex, hypandrium longer than eighth sternite, ovipositor composed of strongly attenuate and laterally compressed eighth tergite with minute hairs ventrally at apex.

1. *Neomochtherus congedus* (Walker)

*Asilus congedus* Walker, 1851, *Insecta Saundersiana*, 1 : 138. Type locality : East India.

*Neomochtherus congedus* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 1 : 148.

*Distribution* India.

2 *Neomochtherus gnavus* (van der Wulp)

*Mochtherus gnavus* van der Wulp, 1872. *Tijdschr. Ent.* 15 : 243. Type localities : Java ; Halmahera, Obi and Waigeo, Moluccas.

*Neomochtherus gnavus* (van der Wulp) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 148,

*Distribution* : Borneo ; Celebes ; India ; Java ; Moluccas ; Sri Lanka ; Thailand.

3. *Neomochtherus himalayensis* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1-3) : 232. Type locality : Tiger Hills, West Bengal.

*Distribution* India.

4. *Neomochtherus indianus* (Ricardo)

*Heligmoneura indianus* Ricardo, 1919. *Ann. Mag. nat. Hist.* (9) 3 : 74, Type locality : Kotagiri, S. India,

*Neomochtherus indianus* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 148.

*Distribution* India.

5. *Neomochtherus trisignatus* (Ricardo)

*Heligmoneura trisignatus* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 61. Type localities : Veddchalam in Arcot District, Tamil Nadu and Adoni in Bellary District, S. India.

*Neomochtherus trisignatus* (Ricardo) : Oldroyd, 1975, *A Catalog of Diptera of the Oriental Region*, 2 : 148.

*Distribution* India.

## XII. Genus *Orophotus* Becker

*Orophotus* Becker, 1925, *Ent. Mitt.* 14 : 137, Type-species : *Orophotus univittatus* Becker, 1925 : 137 ; monotypic.

Face plane on upper third, then gradually produced below with bristly hairs, antennal style nearly as long as the third segment ; anterior femur bears fringe of stout bristles ventrally ; posterior branch of third vein sigmoid, second posterior cell highly swollen at base ; all abdominal tergites with bristles on posterior margin, epandrium with long process, gonocoxite short and truncate, proctiger broad, flat : ovipositor composed of the last three segments.

*Orophotus montanus* (Ricardo)

*Asilus montanus* Ricardo, 1922. *Ann. Mag. nat. Hist.* (9) 10 : 47. Type locality : Khasi Hills, Assam.

*Orophotus montanus* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 148.

*Distribution* India.

### XIII. Genus *Philodicus* Loew

*Philodicus* Loew, 1848. *Linn. Ent.* 3 : 391. Type-species : *Asilus javanus* Wiedemann, 1819 : 4; original designation.

*Teretromyia* Bigot, 1859. *Ann. Soc. Ent. Fr.* (3) 7 : 416. Type species : *cothurnata* Bigot, 1859 : 416 ; monotypic.

The genus can be separated from the related *Apoclea* Macquart by its three submarginal cells, second submarginal cell begins at or beyond the end of discal cell ; all abdominal tergites with bristles. epandrium laterally convex and apposed at apex, proctiger usually flat, gonocoxite and hypandrium very short, female genitalia comprises of eighth to tenth segments, and the last segment bears two long spines at apex and with many short bristles dorsally and laterally.

1. *Philodicus ceylanicus* Schiner, 1868. *In: Reisc der Osterrichischen Fragatte Novara, Dipt.* : 179. Type locality : Sri Lanka.

*Distribution* India ; Sri Lanka.

2. *Philodicus chinensis* Schiner, 1868. *In: Reise der Osterrichischen Fragatte Novara, Dipt.* : 179, Type locality : Hong Kong.

*Distribution* Hong Kong ; India.

3. *Philodicus femoralis* Ricardo, 1921. *Ann. Mag. nat. Hist.* (9) 8 : 190. Type localities : Okkyl ; Schwegu, Burma.

*Distribution* : Burma ; India.

4. *Philodicus fuscus* (Macquart)

*Trupanea fuscus* Macquart, 1883. *Dipt Exot.* 1 (2) : 104. Type locality : Bengal.

*Philodicus fuscus* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 149.

*Distribution* : India.

5. *Philodicus grandissimus* Ricardo, 1921. *Ann. Mag. nat. Hist.* (9) 8 : 186. Type locality : Disa, Maharashtra.  
*Distribution* : India.
6. *Philodicus hospes* (Wiedemann)  
*Asilus hospes* Wiedemann, 1819. *Zool. Mag.* (Wied.) 1 (3) : 32. Type locality : India.  
*Philodicus hospes* (Wiedemann) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 149.  
*Distribution* : Sri Lanka ; India.
7. *Philodicus jagannathi* Rao, 1969. *Current Science* : 196. Type locality : Puri, Orissa.  
*Distribution* : India.
8. *Philodicus javanus* (Wiedemann)  
*Asilus javanus* Wiedemann, 1819. *Zool. Mag.* (Wied.) 1 (3) : 4. Type locality : Java.  
Other synonyms are listed by Oldroyd 1975 : 194.  
*Philodicus javanus* (Wiedemann) : Oldroyd, 1975. *A Catalog of Diptera of Oriental Region*, 2 : 149.  
*Distribution* : Borneo ; Bangla Desh ; India. ; Java.
9. *Philodicus meridionalis* Ricardo, 1921. *Ann. Mag. nat. Hist.* (9) 8 - 188. Type locality : Sri Lanka.  
*Distribution* : India. ; Sri Lanka.
10. *Philodicus nathi* Joseph & Parui, 1970. *Pacific Ins.* 12 (3) : 507. Type locality : Nagarjunakonda, Andhra Pradesh.  
*Distribution* : India.
11. *Philodicus pallidipennis* Ricardo, 1921. *Ann. Mag. nat. Hist.* (9) 8 ; 191. Type locality : Karachi, Pakistan  
*Distribution* : India ; Pakistan.
12. *Philodicus propinquus* Bromley, 1938. *Indian J. Agric. Sci.* 8 : 866. Type locality : Chowghat, Ponani, Kerala.  
*Distribution* : India.
13. *Philodicus pruthii* Bromley, 1935. *Rec. Indian Mus.* 37 : 224. Type locality : Pearl Bank Fisheries, Tamil Nadu.  
*Distribution* : India.
14. *Philodicus univentris* (Walker)  
*Trupanea univentris* Walker, 1851. *Insecta Saundersiana*, 1 : 114. Type locality : East India.

*Philodicus univentris* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 150.

*Distribution* : India.

#### XIV Genus *Philonicus* Loew

*Philonicus* Loew, 1849. *Linn. Ent* 4 : 144. Type-species : *Asilus albiceps* Meigen, 1820 : monotypic.

Face plane on upper half, gibbous on lower half with bristles all over, third antennal segment equal to the first two segments together, style as long as third segment, hind femora with comparatively more bristles ventrally than others; second posterior cell moderately wide at base, fourth posterior cell closed and stalked ; all tergites with bristles, lateral hairs present upto third segment, epandrium elongate, curved from middle, gonocoxite half as long as epandrium, hypandrium well developed, proctiger oblique, female genitalia comprises of last three tergites and the last one bearing spines.

*Philonicus albices* (Meigen)

*Asilus albiceps* Meigen, 1849. *Linn. Ent.* 4 : 144,

*Philonicus albiceps* (Meigen) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 150.

*Distribution* : India. (collected by Josehp & Parui in 1978 from Eastern India).

#### XV Genus *Promachus* Loew

*Promachus* Loew, 1848. *Linn. Ent.* 3 : 390. Type species : *Asilus maculatus* Fabricius ; designated by Coquillett (1910 : 595).

*Trypanoides* Becker, 1925. *Ent. Mitt.* 14 : 71. Type-species : *Trypanoides testaceipes* Macquart ; designated by Engel (1926 : 22).

*Enagaedium* Engel, 1930. *Konowia*, 8 : 459. Type-species : *Asilus poetinus* Walker, 1849 ; original designation.

Face plane on upper half and moderately gibbous on lower half bearing bristles upto lateral sides of epistome ; metanotal callosity bare ; wings with three submarginal cells, second submarginal cell highly broadened distally ; first four abdominal tergites with bristles, epandrium elongate, apposed apically, proctiger erect, gonocoxite half as long as epandrium, aedæagus three pronged, ovipositor comprises of last three segments.

1. *Promachus binghamensis* Ricardo, 1921. *Ann. Mag. nat. Hist.* (9) 8 : 215. Type locality : Sikkim.  
*Distribution* : India.
2. *Promachus calanus* (Walker)  
*Trupanea calanus* Walker, 1851. *Insecta Saundersiana*, 1 : 122. Type locality : India.  
*Promachus calanus* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 152.  
*Distribution* : India.
3. *Promachus contractus* (Walker)  
*Trupanea contractus* Walker, 1851. *Insecta Saundersiana*, 1 : 259. Type locality : India.  
*Promachus dontractus* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Origion*, 2 : 152.  
*Distribution* : India
4. *Promachus duvaucelii* (Macquart)  
*Trupanea duvaucelii* Macquart, 1838. *Dipt. Exot.* 1. (2) : 97. Type locality : West Bengal.  
*Promachus duvaucelii* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 152.  
*Distribution* : India.
5. *Promachus fuscifemoratus* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 24  
Type locality : Point Calimer.  
*Distribution* : India.
6. *Promachus genitalis* n. sp. Joseph & Parui. *Bull. zool. Surv. India* (in press)  
Type locality ; Jabalpur, Madhya Pradesh.  
*Distribution* : India
7. *Promachus ghumtiensis* Bromley, 1935. *Rec. Indian Mus.* 37 : 224. Type locality : Ghumti, West Bengal.  
*Distribution* : India.
8. *Promachus heteropterus* (Macquart)  
*Trupanea heteropterus* Macquart, 1838. *Dipt. Exot.* 1 (2) : 96. Type locality : Malabar Coast, Kerala.  
*Promachus heteropterus* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 153.  
*Distribution* : India.
9. *Promachus indicus* n.. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press).  
Type locality : India.  
*Distribution* : India.

10. *Promachus jabalpurensis* Joseph & Parui, 1981. *Oriental Ins.* 15 (1) : 25.  
Type locality : Jabalpur, Madhya Pradesh.  
*Distribution* : India.
11. *Promachus lehri* n. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Baripada District, Orissa and Nalanda, Rajgir District, Bihar.  
*Distribution* : India.
12. *Promachus leoninus* Loew, 1848. *Linn. Ent.* 3 : 404. Type localities : Greek Islands and Asia Minor.  
*Distribution* : Burma ; Greek Islands ; India ; Iran ; Turkey.
13. *Promachus leucotrichodes* Bigot, 1892. *Bull. Soc. Zool. Fr.* 17 : 210. Type locality : Mahe.  
*Distribution* : India.
14. *Promachus maculatus* (Fabricius)  
*Asilus maculatus* Fabricius, 1775. *Sy.t. Ent.* : 794. Type locality : India.  
*Trupanea flavibarbis* Macquart, 1838. *Dipt. Exot.* 1 (2) : 96. Type locality : Pondicherry.  
*Promachus maculatus* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 153.  
*Distribution* : India.
15. *Promachus nicobarensis* Schiner, 1863. In : *Reise der Osterreichischen Fregatte Novara*, *Dipt.* : 177. Type locality : Kar nicobar, India.  
*Distribution* : India.
16. *Promachus obscurus* a. sp. Joseph & Parui, *Bull. zool. Surv. India* (in press). Type locality : Panderipani, Sundargar District, Orissa.  
*Distribution* : India.
17. *Promachus ramakrishnai* Bromley, 1939. *Indian J. Agric. Sci.* 8 : 867. Type locality : Taliparamba, N. Malabar, Kerala.  
*Distribution* : India.
18. *Promachus tristis* Bigot, 1892. *Bull. Soc. Zool. Fr.* 17 : 211. Type locality : Mahe.  
*Distribution* : India.
19. *Promachus varipes* (Macquart)  
*Trupanea varipes* Macquart, 1838. *Dipt. Exot.* 1 (2) : 97. Type locality : Bengal.  
*Promachus varipes* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 155.  
*Distribution* : India ; ? Philippines.

20. *Promachus westermanni* (Macquart)  
*Trupanea westermanni* Macquart, 1838. *Dipt. Exot.* 1 (2) : 98. Type locality :  
 Java.  
*Promachus westermanni* (Macquart) : Oldroyd, 1975. *A Catalog of Diptera of  
 the Oriental Regioe*, 2 : 155.  
*istribution* : India ; Java.
21. *Promachus yerburionsis* Ricardo, 1920. *Ann. Mag. nat. Hist.* (9) 5 : 220. Type  
 locality : Trincomalee, Sri Lanka.  
*Distribution* : India ; Sri Lanka.

### XVI. Gemus *Rhadiurgus* Loew

*Rhadiurgus* Loew, 1849, *Linn. Ent.* 4 : 133. Type-species : *Asilus variabilis*  
 Zetterstedt, 1838 ; original designation.

Upper third of face plane, conspicuously developed below bearing  
 numerous stout, curved bristles, third antennal segment longer than the  
 combined length of first two segments ; anterior femur with a ventral  
 fringe of bristly hairs ; first posterior cell of wing narrowed in the  
 middle ; all abdominal tergites with bristles on sides, epandrium  
 elongate with curved apical process, aedeagus exposed.

*Rhadiurgus bifidus* (Fabricius)

*Dasyopogon bifidns* Fabricius, 1805. *Syst. Antliat.* : 179. Type locality : Tranquebar,  
 Tamil Nadu.

*Rhadiurgus bifidns* (Fabricius) : Oldroyd, 1975. *A Catalog of Diptera of the  
 Oriental Region*, 2 : 155.

*Distribution* : India.

### XVII. Genus *Senoprosopis* Macquart

*Senoprosopis* Macquart, 1838. *Dipt. exot.* 1 (2) : 130. Type-species : *Senoprosopis  
 diardii* Macquart, 1838 : 130 ; monotypic.

Face slightly raised above epistome with fine hairs on dorsal half  
 and long bristly hairs on ventral half, first and third antennal segment  
 equal in length ; metanotal slopes with fine hairs ; all femora bear  
 bristles on ventral surface which become very few in hind pair ; second  
 submarginal cell wide at apex, epandrium truncate apically, gonocoxite  
 of medium size, hypandrinm short.

*Senoprosopis diardii* Macquart, 1838. *Dipt. Exot.* 1 (2) : 130. Type locality :  
 Bengal.

*Distribution* : India.

XVIII. Genus *Trichomachimus* Engel

*Trichomachimus* Engel, 1933, *Ark. Zool. (A)*, 25 (22) : 10. Type-species : *Machimus pubescens* Ricardo, 1922 ; original designation.

The genus can be distinguished from the allied *Machimus* Meigen by the densely matted stiff piles on disc of scutellum and from second to fifth abdominal tergites, denser and larger piles on pleurae and more prominent gibbosity of the face.

1. *Trichomachimus excelsus* (Ricardo)

*Machimus excelsus* Ricardo, 1922. *Ann. Mag. nat. Hist. (9)* 10 : 68. Type locality : Gyantse, Tibet.

*Trichomachimus excelsus* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 156.

*Distribution* : India. ; Tibet

2. *Trichomachimus hirsutus* (Bromley)

*Machimus hirsutus* Bromley, 1935. *Rec. Indian Mus.* 37 : 220. Type locality : Khasi Hills, Assam.

*Trichomachimus hirsutus* (Bromley) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 156.

*Distribution* : India.

3. *Trichomachimus kashmirensis* Oldroyd, 1964. *Ann. Mag. nat. Hist. (13)* 7 : 446. Type locality : Gulmarg, Kashmir.

*Distribution* : India.

4. *Trichomachimus opulentus* (Walker)

*Asilus opulentus* Walker, 1851. *Insecta Saundersiana*, 1 : 150. Type locality : East India.

*Trichomachimus opulentus* (Walker) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 156.

*Distribution* : India.

5. *Trichomachimus orientalis* (Ricardo)

*Asilus orientalis* Ricardo, 1922. *Ann. Mag. nat. Hist. (9)* 10 : 46. Type locality : Khasi Hills, Assam.

*Trichomachimus orientalis* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 156.

*Distribution* : India.

6. *Trichomachimus pubescens* (Ricardo)

*Machimus pubescens* Ricardo, 1922. *Ann. Mag. nat. Hist. (9)* 10 : 67. Type locality : Gyantse, Tibet.

*Trichomachimus pubescens* (Ricardo) : Oldroyd, 1975. *A Catalog of Diptera of the Oriental Region*, 2 : 156.

*Distribution* : Afganistan ; Kansu, China ; India ; Tibet.

7. *Trichomachimus rubisetosus* Oldroyd, 1964. *Ann. Mag. nat. Hist.* (13) 7 : 445.  
Type locality : Tropde, Tibet.

*Distribution* : India ; Tibet

#### IX. SUMMARY

The paper deals with a review of the Asilidae occurring in India. It includes an account of the history of the Asilidae, their ecology, interrelationships and distribution. Keys to subfamilies, tribes, and genera are given, which are after Ratanlal (1960), Hull (1962), and Oldroyd (1972). The diagnostic characters of the family, subfamilies and genera are also included. A total number of 331 species of 50 genera are so far described from India ; and 3 undescribed species of 2 more genera, viz. *Grypoctonus* Speiser (2 species) and *Holopogon* Loew (1 species), are also reported.

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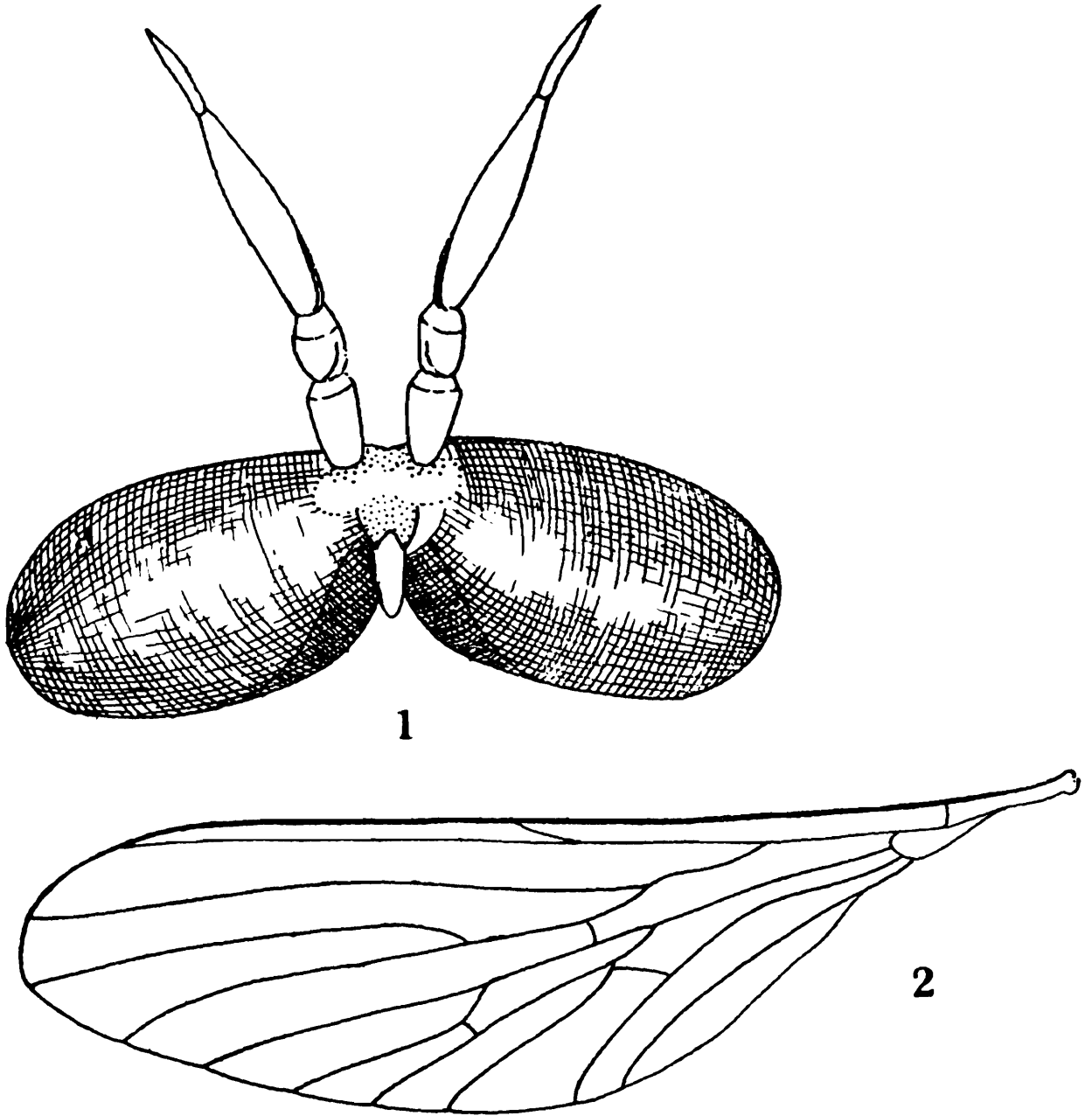
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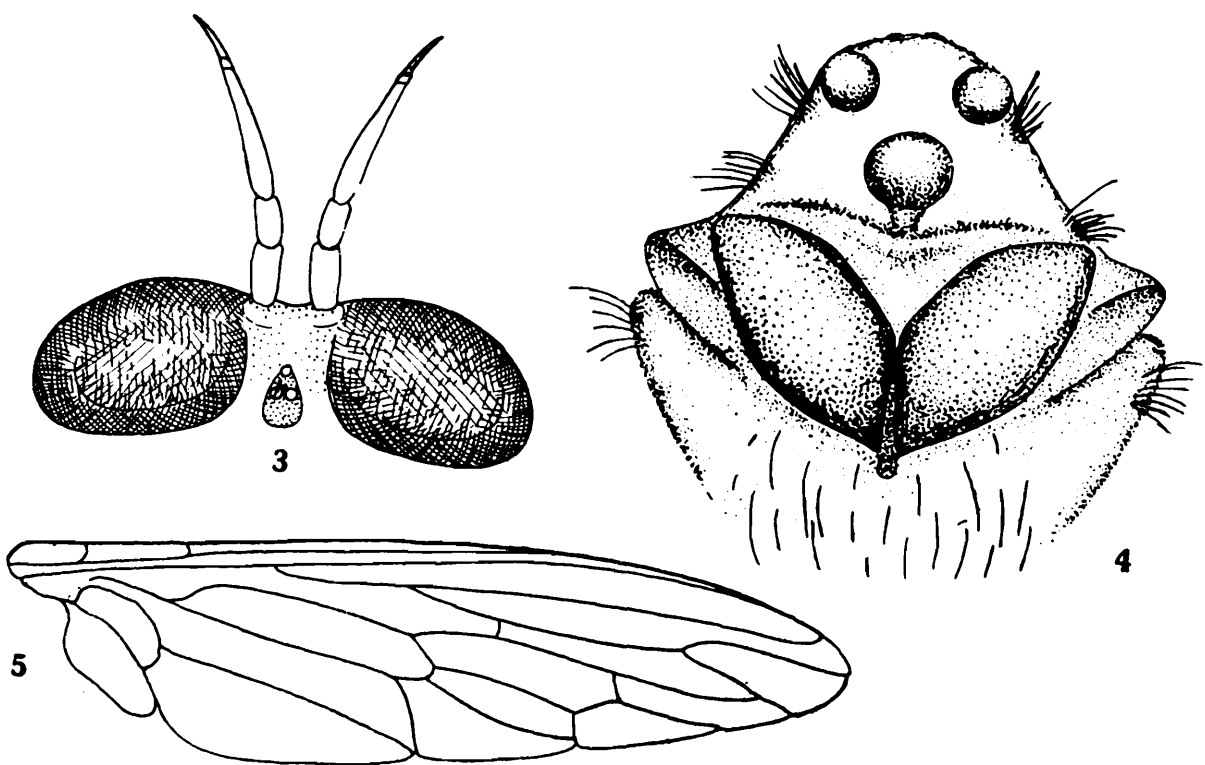
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FIGURES

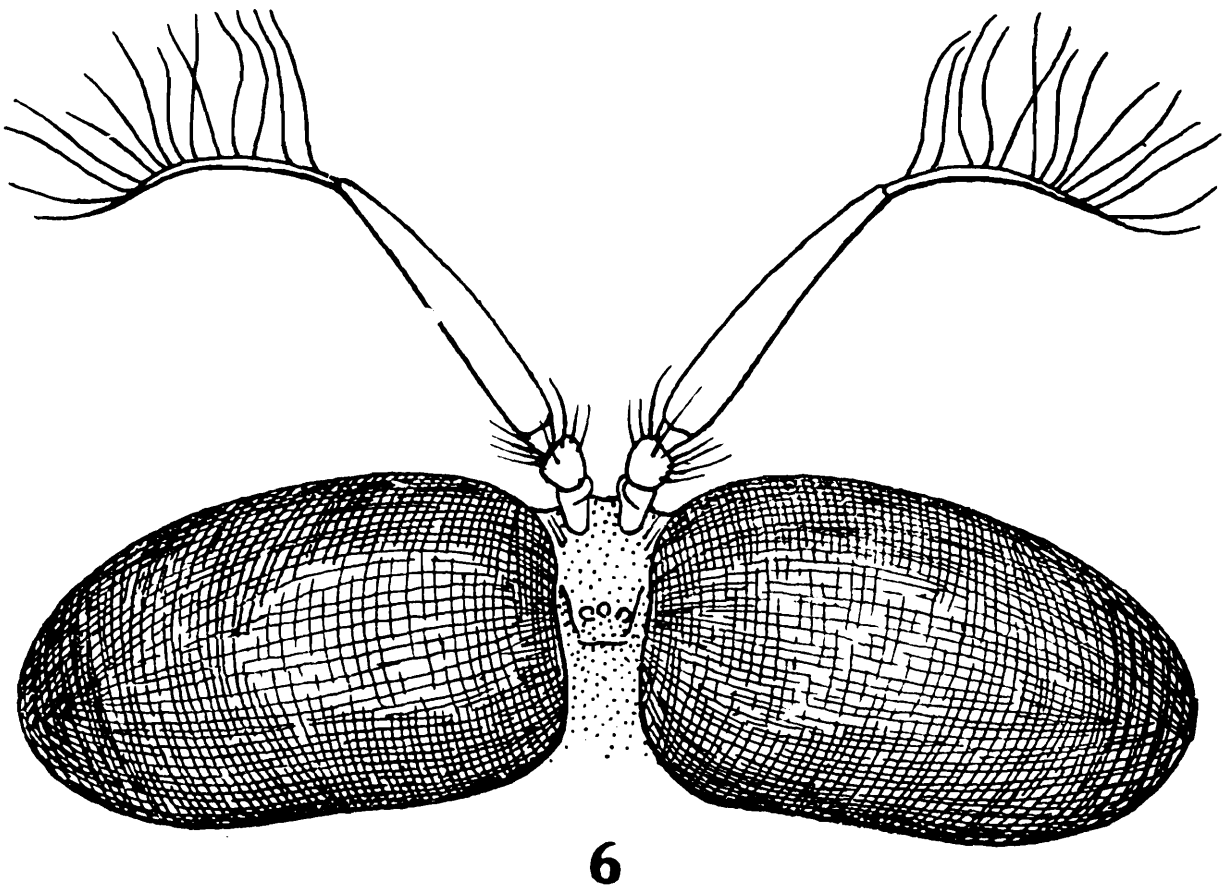
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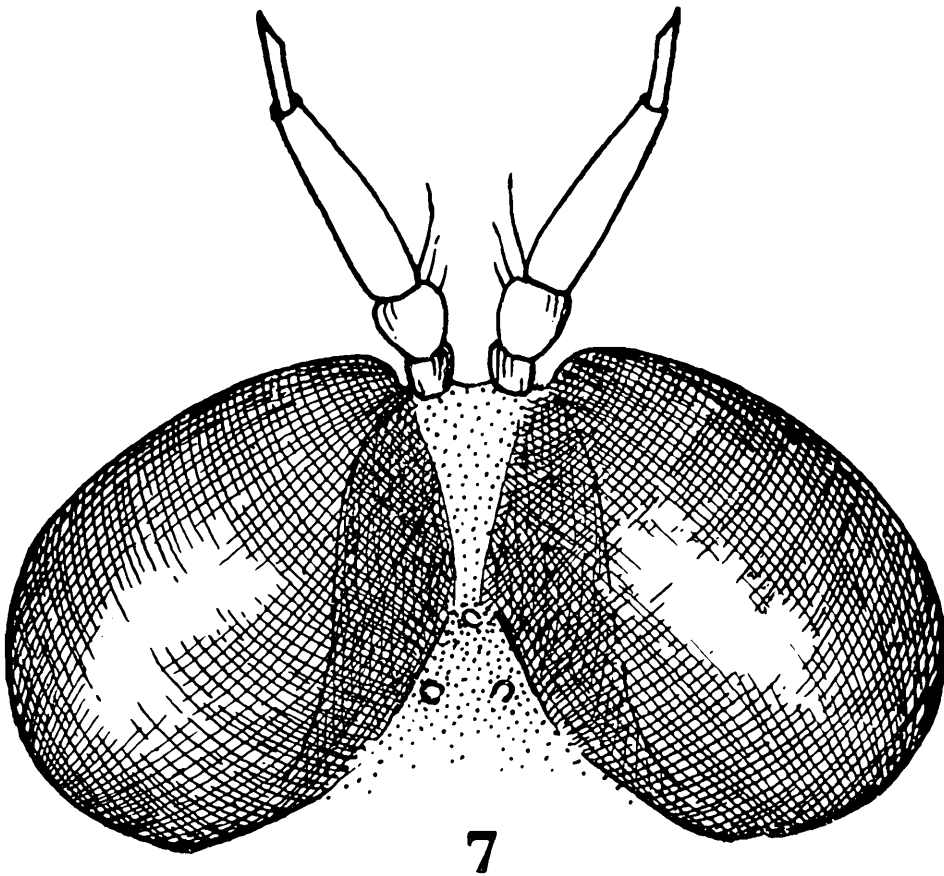
1—2. *Leptogaster cheriani* Bromley ( Leptogastrini ). 1. head ; 2 wing.



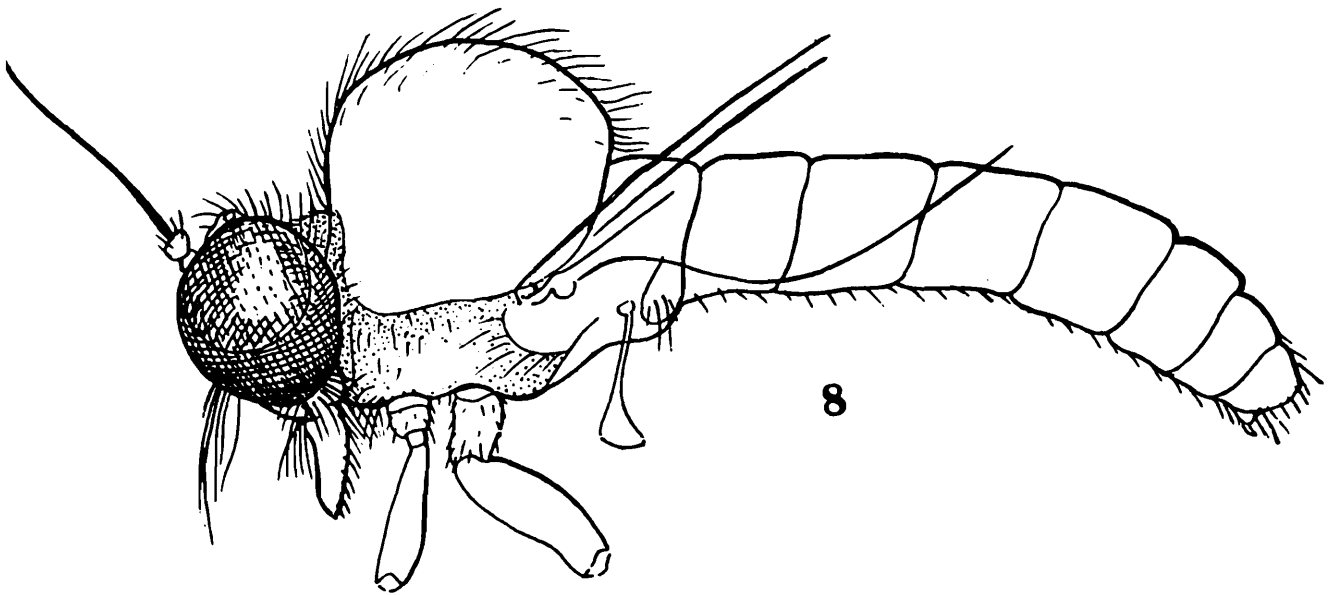
3—5. *Stenopogon manii* Joseph and Parui (Saropogonini). 3, head ; 4. prosternum  
5. wing.



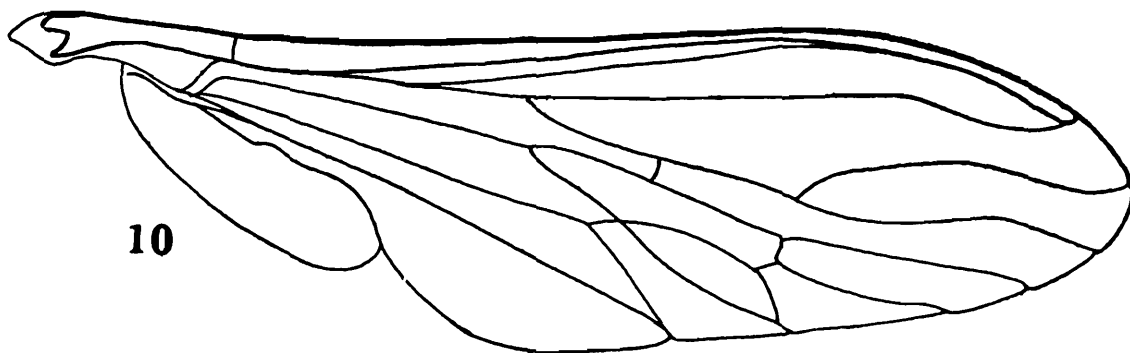
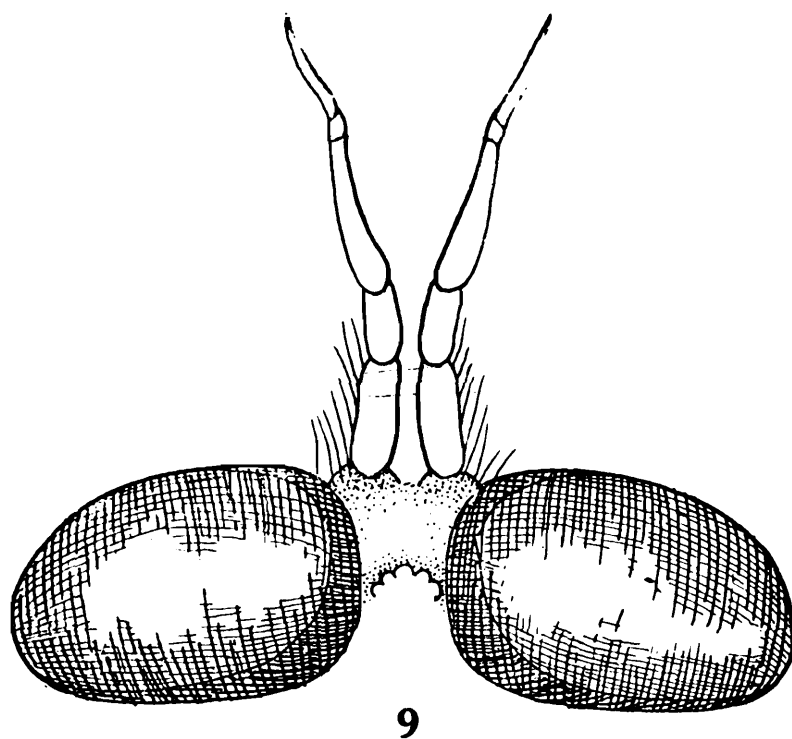
6. *Michotamia indiana* Joseph and Parui (Stichopogonini), head showing normal plumose arista.



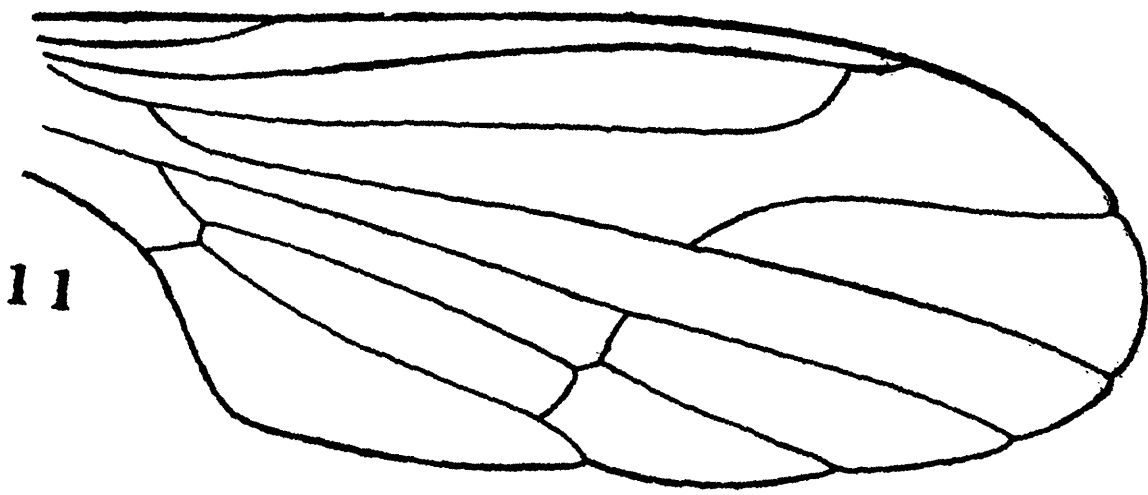
*Stichopogon indicus* Joseph and Parui (Stichopogonini), head : antenna showing exception with apical spine.



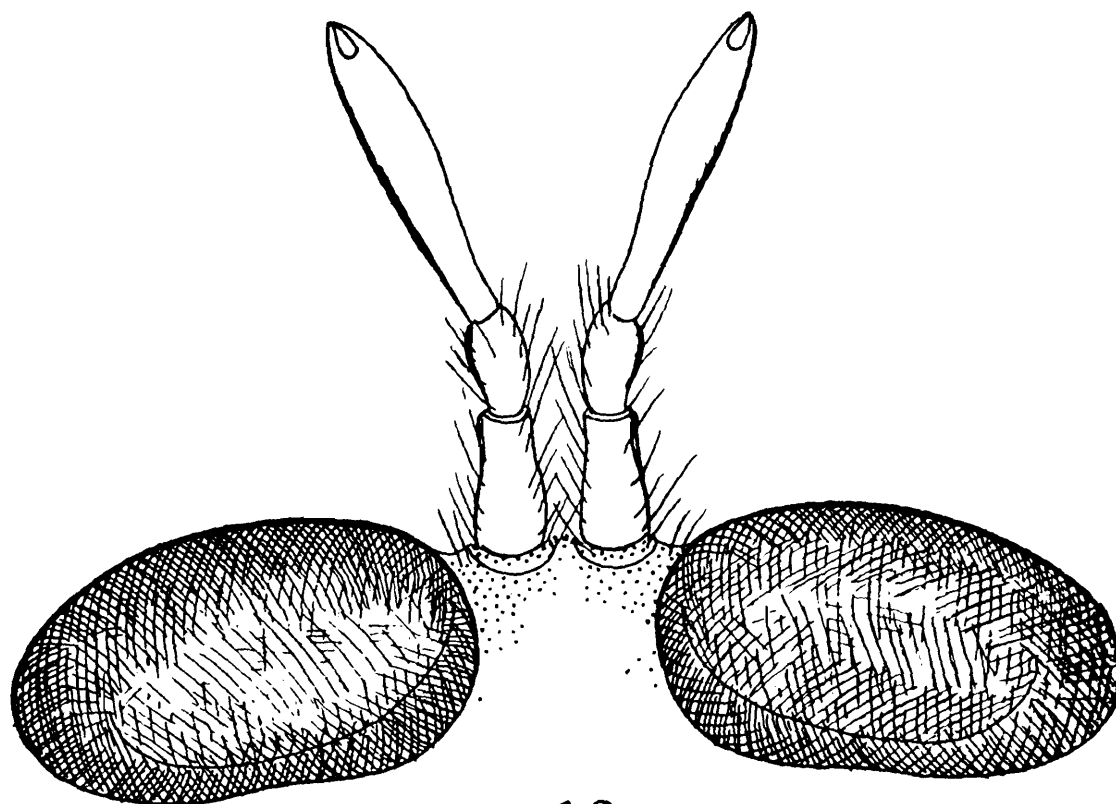
8. *Xenomyza artigasi* Joseph and Parui ( Xenomyzini ), Lateral view.



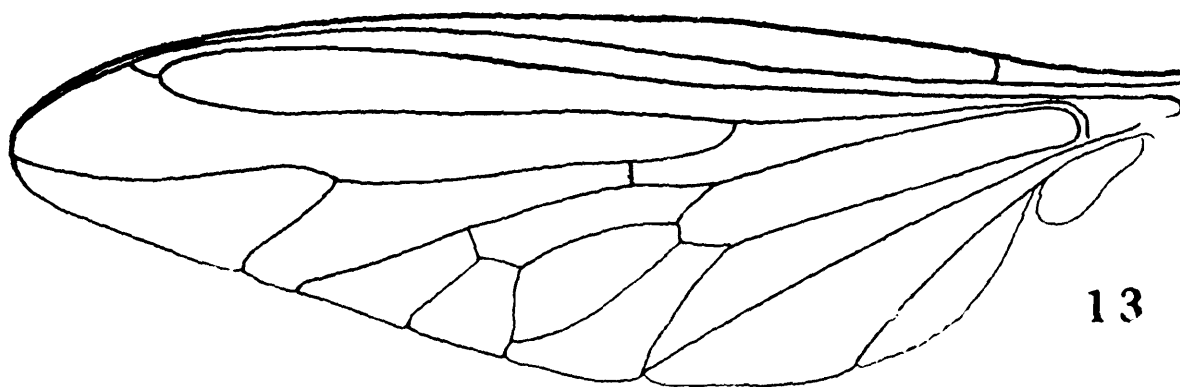
9—10 *Machimus indicus* Joseph and Parui ( Asilini ) 9, head ; 10, Wing.



11. *Anoplothyrea indiana* Joseph and Parui ( Atomosini ), wing.

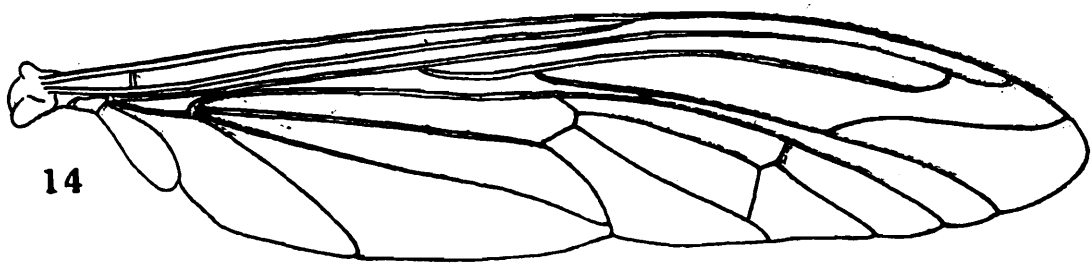


12



13

12—13 *Laphria indica* Joseph and Parui ( Laphriini ). 12, head ; 13. wing showing normal curved vein M<sub>3</sub>.



14. *Orthogonis andmanensis* Joseph and Parui (Laphriini) wing showing exception with straight vein M<sub>3</sub>

## INDEXES

*Synonyms are in italics*

## Index to Genera

## A

<i>Acurana</i> Walker	...	---	...	16
<i>Allocotosia</i> Schiner	---	...	...	36
<i>Ammophilomima</i> Enderlein	...	...	...	9
<i>Anacinaces</i> Enderlein	---	---	...	45
<i>Andrenosoma</i> Rondani	....	....	...	13
<i>Anoplothyrea</i> de Meijere	...	...	...	20
<i>Apoclea</i> Macquart	...	....	...	46
<i>Asilus</i> Linnaeus	...	...	...	46
<i>Astochia</i> Becker	...	...	---	47

## C

<i>Chaetogonophora</i> Hull	....	...	...	52
<i>Choerades</i> Walker	...	....	...	14
<i>Cinadus</i> Wulp	...	....	....	52
<i>Clephyroneura</i> Becker	...	...	...	48
<i>Clincpogon</i> Bezzi		...	...	34
<i>Cophinopoda</i> Hull	---	...	...	35
<i>Cormansis</i> Walker	...	....	....	13
<i>Cyrtopogon</i> Loew	....	...	...	23

## D

<i>Damalis</i> Fabricius	---	....	...	31
<i>Dasythrix</i> Loew	...	....	...	18
<i>Dyseris</i> Loew	...	...	...	16

## E

<i>Elaeotoma</i> Costa	...	---	...	13
<i>Emphysomera</i> Schiner	...	....	---	37
<i>Enagaedium</i> Engel	....	....	...	63
<i>Epholkiolaphria</i> Hermann	...	...	...	14
<i>Euarmostus</i> Walker	...	...	...	23
<i>Euscelidia</i> Westwood	...	---	....	10

<b>G</b>				
<i>Gonypes</i> Latreille	....	....	...	10
<i>Grypocetus</i> Speiser	....	...	...	23
<b>H</b>				
<i>Halictosoma</i> Rondani	---	---	...	18
<i>Haplonota</i> Frey	---	...	...	52
<i>Heligmoneura</i> Bigot	---	---	...	52
<i>Holopogon</i> Loew	....	....	...	24
<i>Hoplopheromerus</i> Becker	...	...	...	54
<i>Hyperochia</i> Schiner	....	....	---	13
<b>L</b>				
<i>Laphria</i> Meigen	....	---	---	14
<i>Laxenecera</i> Macquart		....	...	16
<i>Leptogaster</i> Meigen	....	...	---	10
<i>Lobus</i> Martin	---	...	---	11
<b>M</b>				
<i>Machimus</i> Loew	---	....	....	54
<i>Maira</i> Schiner	....	---	...	16
<i>Merodontina</i> Enderlein	---	...	---	36
<i>Michotamia</i> Macquart	....	...	---	36
<i>Microstylum</i> Macquart	...	...	....	36
<i>Microstylum</i> Macquart	...	....	...	24
<i>Mimoscolia</i> Enderlein	---	....	....	24
<b>N</b>				
<i>Neoitamus</i> Osten Sacken	....	....	...	58
<i>Neolophonotus</i> Engel	...	---	....	59
<i>Neomochtherus</i> Osten Sacken	....	...	....	59
<i>Nusa</i> Walker	...	...	---	18
<b>O</b>				
<i>Oldroydia</i> Hull	---	...	---	26
<i>Ommatius</i> Wiedemann	....	...	...	37

Opeatocerus Hermann	---	...	...	20
Orophotus Becker	...	...	...	60
Orthogonis Hermann	....	...	...	19
<b>P</b>				
<i>Pagidolaphria</i> Hermann	...	....	...	14
<i>Pegesimallus</i> Loew	....	...	...	27
<i>Phitammosius</i> Rondani	...	...	...	23
Philodicus Loew	....	...	....	61
Philonicus Loew	....	...	...	63
Pogonosoma Rondani	...	...	....	19
Promachus Loew	....	....	...	63
Pseudomerodontina Joseph and Parui	....	....	....	41
<b>R</b>				
Rhadiurgus Loew	...	....	...	66
<i>Ropalocera</i> Meigen	...	...	...	41
<b>S</b>				
<i>Saliomima</i> Enderlein	...	....	....	14
Saropogon Loew	....	...	...	27
Scylaticus Loew	...	....	....	28
Senaprosopis Macquart	...	...	...	66
Stenopogon Loew	...	...	...	28
Stichopogon Loew	...	....	....	41
<b>T</b>				
<i>Teretromyia</i> Bigot	....	....	...	61
<i>Toremyia</i> Hull	...	---	...	26
<i>Trichoitamus</i> White	...	...	...	58
Trichomachimus Engel	....	...	....	67
Trigonomima Enderlein	....	....	...	30
<i>Trypanoides</i> Becker	...	...	...	63
<b>X</b>				
Xenomyza Wiedemann	...	...	...	31

## Index to Species

## A

aequalis Walker, Nusa	...	---	---	18
albibarbis Macquart, Laxenecera	...	...	...	16
albibasis Joseph and Parui	....	....	....	18
albiceps Meigen, Philonicus	...	...	...	63
albimana Walker, Leptogaster	....	....	....	10
albimystax Joseph and Parui, Stichopogon	...	...	...	42
albolimbatum van der Wulp, Microstylum	...	...	...	24
alternans Wiedemann, Laphria	...	...	...	14
ambryon (Walker), Stenopogon	...	...	...	28
analis Macquart, Michotamia	...	....	....	36
anamalaiensis Joseph and Parui, Clephroneura	...	---	---	49
anamalaiensis Joseph and Parui, Héligmoneura	...	...	...	52
anamalaiensis Joseph and Parui, Trigonomima	....	....	....	31
anānthakrishnani Joseph and Parui, Microstylum	...	...	...	24
andamanensis Joseph and Parui, Heligmoneura	...	...	...	52
andamanensis Joseph and Parui, Ommatius	...	...	...	37
andamanensis Joseph and Parui, Orthogonis	...	...	...	19
angularis (Ricardo), Machimus	....	....	....	55
annulatus (Fabricius), Clephroneura	....	....	....	49
apicale (Wiedemann), Microstylum	...	....	....	24
apicalis Oldroyd, Clephroneura	...	...	...	49
apiforme (Walker), Microstylum	...	...	...	25
armatipes (Macquart), Hoplopheromerus	...	---	---	54
artigasi (Joseph and Parui), Damalis	...	...	...	31
arunachalensis Joseph and Parui, Ommatius	...	...	...	37
assamensis Joseph and Parui, Laphria	...	...	...	14
assamensis Ricardo, Machimus	...	....	....	55
ater Bromley, Ommatius	....	...	...	38
aurata (Fabricius), Michotamia	....	...	...	36
aurifacies Macquart, Maira	...	....	....	17
aurimystax Bromley, Asilus	...	....	....	47
aurimystax (Bromley), Machimus	...	....	....	55

## B

<i>bangalorensis</i> Joseph and Parui, <i>Clephroneura</i>	...	49
<i>bannerghattaensis</i> Joseph and Parui, <i>Clephroneura</i>		49
<i>barium</i> Walker, <i>Asilus</i>	....	49
<i>barsilensis</i> Joseph and Parui, <i>Neoitamus</i>	...	58
<i>basilaris</i> Coquillett, <i>Leptogaster</i>	...	10
<i>basirufum</i> Bigot, <i>Microstylum</i>	...	25
<i>bengalensis</i> (Macquart), <i>Clephroneura</i>	...	49
<i>bengalensis</i> Joseph and Parui, <i>Heligmoneura</i>	...	52
<i>bengalensis</i> (Wiedemann), <i>Laxenecera</i>	....	16
<i>bengalensis</i> Joseph and Parui, <i>Machimus</i>	...	55
<i>bengalensis</i> (Joseph and Parui), <i>Neoitamus</i>	...	58
<i>bengalensis</i> Joseph and Parui, <i>Nusa</i>	...	18
<i>bengalensis</i> Joseph and Parui, <i>Ommatius</i>	...	38
<i>bhattacharyai</i> Joseph and Parui, <i>Microstylum</i>	...	25
<i>bicolor</i> Joseph and Parui, <i>Maira</i>	....	17
<i>bicolor</i> Joseph and Parui, <i>Machimus</i>	...	55
<i>bicolor</i> Macquart, <i>Microstylum</i>	...	25
<i>bifidus</i> (Fabricius), <i>Rhadiurgus</i>	...	66
<i>bigoti</i> Joseph and Parui, <i>Heligmoneura</i>	...	52
<i>binghamensis</i> Ricardo, <i>Promachus</i>	...	64
<i>brevipennis</i> Oldroyd, <i>Clephroneura</i>	---	49
<i>bromleyi</i> Joseph and Parui, <i>Astochia</i>	...	47
<i>brunipenne</i> Macquart, <i>Microstylum</i>	....	25

## C

<i>calanus</i> (Walker), <i>Promachus</i>	...	64
<i>calcuttaensis</i> Joseph and Parui, <i>Neoitamus</i>	....	58
<i>calicutensis</i> Joseph and Parui, <i>Machimus</i>	....	55
<i>calicutensis</i> n. sp. Joseph and Parui, <i>Damalis</i>	....	31
<i>canis</i> Bromley, <i>Astochia</i>	....	47
<i>carmichaeli</i> Bromley, <i>Ommatius</i>	....	38
<i>cederholmi</i> (Joseph and Parui), <i>Damalis</i>	...	31
<i>cedrusa</i> Ricardo, <i>Pogonosoma</i>	....	19

<i>ceylanicus</i> Schiner, <i>Philodicus</i>	...	...	61
<i>chaetoprocta</i> Hull, <i>Heligmoneura</i>	...	...	52
<i>cheriani</i> Joseph and Parui, <i>Heligmoneura</i>	...	...	52
<i>cheriani</i> Bromley, <i>Leptogaster</i>	...	...	11
<i>cheriani</i> Joseph and Parui, <i>Machimus</i>	...	...	55
<i>chinensis</i> (Fabricius), <i>Cophinopoda</i>	...	...	35
<i>chinensis</i> Schiner, <i>Philodicus</i>	...	...	61
<i>choprai</i> Bromley, <i>Andrenosoma</i>	...	...	13
<i>cinchonaensis</i> Joseph and Parui, <i>Machimus</i>	...	...	55
<i>cinchonaensis</i> Joseph and Parui, <i>Stenopogon</i>	...	...	28
<i>claripennis</i> Bromley, <i>Damalis</i>	...	...	31
<i>coerulescens</i> Ricardo, <i>Machimus</i>	...	...	55
<i>coimbatorensis</i> Joseph and Parui, <i>Microstylum</i>	...	...	25
<i>compta</i> Walker, <i>Maira</i>	...	...	17
<i>congeda</i> (Walker), <i>Heligmoneura</i>	...	...	53
<i>congedus</i> (Walker), <i>Neomochtherus</i>	...	...	60
<i>congrua</i> Walkér, <i>Laphria</i>	...	...	18
<i>conopsoides</i> Wiedemann, <i>Ommatius</i>	...	...	38
<i>consurgens</i> Walker, <i>Laphria</i>	...	...	18
<i>contractus</i> (Walker), <i>Promachus</i>	...	...	64
<i>corephe</i> Walker, <i>Ommatius</i>	...	...	35

## D

<i>damias</i> (Walker), <i>Stenopogon</i>	...	...	28
<i>delfinado</i> Joseph and Parui, <i>Maira</i>	...	...	17
<i>dentata</i> (Joseph and Parui), <i>Damalis</i>	...	...	32
<i>dhenkundensis</i> Joseph and Parui, <i>Neoitamus</i>	...	...	58
<i>diardii</i> Macquart, <i>Senoprosopis</i>	...	...	66
<i>dimidiata</i> Macquart, <i>Laphria</i>	...	...	14
<i>distincta</i> Oldroyd, <i>Clephydroneura</i>	...	...	49
<i>dravidica</i> Joseph and Parui, <i>Heligmoneura</i>	...	...	53
<i>dravidica</i> (Joseph and Parui), <i>Damalis</i>	...	...	32
<i>dravidicus</i> Joseph and Parui, <i>Machimus</i>	...	...	56
<i>dravidicus</i> Joseph and Parui, <i>Ommatius</i>	...	...	38

dubius Ricardo, Machimus	...	...	56
dubius Joseph and Parui, Ommatius	...	...	38
duvaucelii (Macquart), Clephyroneura		...	50
duvaucelii (Macquart), Promachus	...	...	64

## E

elva (Walker), Nusa	...	...	18
ephippium Macquart, Asilus	...	...	47
erythropygum Bigot, Microstylum	....	...	25
excelsus (Ricardo), Trichomachimus	...	...	67
exilis Oldroyd, Clephyroneura	...	...	50

## F

femoralis Ricardo, Philodicus	...	...	61
femorata Joseph and Parui, Oldroydia		....	26
flava (Linne), Laphria	....	...	15
<i>flavescens</i> Fabricius, <i>Dasyopogon</i>	....	...	35
flavibarbis Macquart, Laxenecera	...	....	16
<i>flavibarbis</i> Macquart, <i>Trupanea</i>	...	...	65
flavicornis (Macquart), Clephyroneura		...	50
formio Walker, Nusa	...	....	18
frauenfeldi Schiner, Ommatius	....	...	38
frommeri Joseph and Parui, Heligmoneura		..	53
frommeri Joseph and Parui, Laphria	...	....	15
furva van der Wulp, Laphria	....	....	15
<i>fulvidus</i> Wiedemann, Ommatius	....	...	35
fusca Walker, Damalis	...	...	32
<i>fusca</i> Oldroyd, Asilus	...	...	50
fuscifemorata Joseph and Parui, Michotamia		....	37
fuscifemoratus Joseph and Parui, Promachus		...	64
fuscopoda Joseph and Parui, Trigonomima		...	31
fuscus Joseph and Parui, Ommatius		...	38
fuscus (Macquart), Philodicus	...	...	61

## G

genitalis Joseph and Parui, Promachus	...	64
ghorpadei Joseph and Parui, Clephyroneura	...	50
ghorpadei Joseph and Parui, Nusa	...	19
ghumtiensis Bromley, Promachus	....	64
gilvoides ven der Wulp, Laphria	...	15
gloriosa Walker, Maira	---	17
gnavus (van der Wulp), Neomochtherus	...	60
gopalpurensis Joseph and Parui, Ommatius	...	38
grahami Joseph and Parui, Neoitamus	....	58
grandis Ricardo, Neoitamus	---	58
grandissimus Ricardo, Philodicus	...	62
gravelyi Joseph and Parui, Clephyroneura	...	50
guptai Joseph and Parui, Astochia	....	47
gymnura Oldroyd, Clephyroneura	...	50
gymnurus Oldroyd, Stichopogon	....	42

## H

halictides Walker, Cormansis	---	13
hamata Hull, Oldroydia	...	26
heteropterus (Macquart), Promachus	...	64
himalayae Martin, Lobus	....	11
himalayensis Joseph and Parui, Neoitamus	---	58
himalayensis Joseph and Parui, Neomochtherus	....	60
himalayensis (Joseph and Parui), Damalis	...	32
hindostani (Ricardo), Astochia	....	48
hirsutus (Bromley, Trichomacnismus	....	67
hirtipes Ricardo, Machimus	...	56
hospes (Wiedemann), Philodicus	...	62
hradskyi Joseph and Parui, Ommatius	...	38
hulli Joseph and Parui, Astochia	....	48
hulli Joseph and Parui, Ommatius	...	38
hulli Joseph and Parui, Saropogon	---	27

## I

<i>iamenus</i> Walker, Asilus	...	....	...	50
<i>imbutum</i> Walker, Microstylum			...	25
<i>inaequalis</i> (Loew), Stichopogon	...		....	42
<i>incisularis</i> Joseph and Parui, Heligmoneura			---	53
<i>incisularis</i> Bromley, Machimus	...		...	56
<i>indiana</i> Joseph and Parui, Anoplothyrea			....	20
<i>indiana</i> Joseph and Parui, Clephyroneura			...	50
<i>indiana</i> Joseph and Parui, Michotamia			...	37
<i>indiana</i> Joseph and Parui, Merodontina			...	36
<i>indiana</i> Joseph and Parui, Maira			....	17
<i>indianus</i> Ricardo, Machimus	...	...	....	56
<i>indianus</i> (Ricardo), Neomochtherus	...		...	60
<i>indica</i> Bromley, Apoclea	....	...	...	46
<i>indica</i> Joseph and Parui, Laphria	...		...	15
<i>indica</i> Joseph and Parui, Nusa	...		....	19
<i>indica</i> Joseph and Parui, Pseudomerodontina			....	41
<i>indica</i> (Joseph and Parui), Damalis	...		...	32
<i>indicus</i> Joseph and Parui, Machimus			...	56
<i>indicus</i> Bromley, Neolophonctus	...		...	59
<i>indicus</i> Joseph and Parui, Ommatius	...		....	39
<i>indicus</i> Bromley, Scylaticus	...		...	28
<i>indicus</i> Joseph and Parui, Stichopogon			....	42
<i>indicus</i> Joseph and Parui, Promachus			...	64
<i>infrafemoralis</i> Bromley, Machimus	...		...	56
<i>infuscata</i> (Joseph and Parui), Damalis			....	32
<i>inronatus</i> Ricardo Neoitamus	...		...	59
<i>inutilis</i> Bromley, Machimus	....		...	56

## J

<i>jabalpurensis</i> Joseph and Parui, Ommatius			...	39
<i>jabalpurensis</i> Joseph and Parui, Promachus			---	65
<i>jagannathi</i> Rao, Philodicus	---		...	62
<i>jairnmi</i> Joseph and Parui, Astochia	...		...	48

jairami Joseph and Parui, Lobus	...	...	11
javanus (Wiedemann), Philodicus		....	62
jayaraji Joseph and Parui, Pseudomerodontina			41
jonesi Joseph and Parui, Ommatius		...	39

## K

karnatakaensis Joseph and Parui, Clephyroneura		....	50
kashmirensis Oldroyd Trichomachimus		...	67
kempi Joseph and Parui, Ommatius		...	39
keralae Martin, Lobus	....	....	11
keralaensis Joseph and Parui, Laphria	...	....	15
keralaensis Joseph and Parui, Machimus		...	56
keralaensis (Joseph and Parui), Damalis		....	32
khasiensis Bromley, Cyrtopogon	....	...	23
khasiensis Ricardo, Machimus	...	....	56
khasiensis Bromley, Neoitamus	...	...	59
kherai Joseph and Parui, Stenopogon	...	...	29
kollari van der Wulp, Maira	...	....	17
kumaunensis Joseph and Parui, Heligmoneura		...	53

## L

laetus Wiedemann, Asilus	...	....	47
lali Joseph and Parui, Clephyroneura		....	50
laphrides Walker, Cyrtopogon	...	....	23
lavignei Joseph and Parui, Heligmoneura		...	53
laxenecera Bromley, Cyrtopogon	...	....	23
lehri Joseph and Parui, Promachus		....	65
leoninus Loew, Promachus	...	....	65
leucopogon Wiedemann, Ommatius	...	....	39
leucotrichodes Bigot, Promachus	...	....	65
lividipes Bigot, Ommatius	...	....	39
loewi Joseph and Parui, Stenopogon	...	....	29
longirostrata Bromley, Maira	....	....	17
longistylus (Wiedemann), Astochia	....	...	48
luteopilosa Joseph and Parui, Laphria		...	15

## M

macquarti Joseph and Parui, <i>Michotamia</i>	....	37
maculatus (Fabricius), <i>Promachus</i>	....	65
maculipes (Walker), <i>Astochia</i>	...	48
malabaricus Joseph and Parui, <i>Ommatius</i>	....	39
manii Joseph and Parui, <i>Stenopogon</i>	...	29
manipurensis Joseph and Parui, <i>Stenopogon</i>	...	29
marion (Walker), <i>Euscelidia</i>	....	10
marion Walker, <i>Leptogaster</i>	...	10
martini Joseph and Parui, <i>Clephroneura</i>	...	50
martini Joseph and Parui, <i>Lobus</i>	...	11
marudamalaiensis Joseph and Parui, <i>Microstylum</i>		26
mercaraensis (Joseph and Parui), <i>Damalis</i>	....	32
meridionalis Ricardo, <i>Philonicus</i>	...	62
meridionalis Oldroyd, <i>Stichopogon</i>	...	42
minor Oldroyd, <i>Clephroneura</i>	---	51
minor Doleschall, <i>Ommatius</i>	....	39
montanus Ricardo, <i>Machimus</i>	...	56
montanus (Oldroyd), <i>Orophotus</i>	...	61
mudigorensis Joseph and Parui, <i>Clephroneura</i>	....	51
muralidharani Joseph and Parui, <i>Astochia</i>	...	48
mussooriensis Joseph and Parui, <i>Machimus</i>		56
mussooriensis Joseph and Parui, <i>Neoitamus</i>	...	59
mysorensis Joseph and Parui, <i>Clephroneura</i>	...	51
mysorensis Joseph and Parui, <i>Stenopogon</i>	....	29

## N

nanus Walker, <i>Ommatius</i>	....	39
nathai Joseph and Parui, <i>Philodicus</i>	...	62
nathani Joseph and Parui, <i>Stenopogon</i>	....	29
nathani Joseph and Parui, <i>Laphria</i>	....	15
nelsoni Joseph and Parui, <i>Clephroneura</i>	...	51
nicobarensis (Schiner), <i>Clinopogon</i>	...	35

<i>nicobarensis</i> (Schiner), <i>Machimus</i>	...	...	57
<i>nicobarensis</i> Joseph and Parui, <i>Ommatius</i>		...	39
<i>nicobarensis</i> Schiner, <i>Promachus</i>	....	...	65
<i>nigrifemorata</i> Bromley, <i>Ommatius</i>	....	....	40
<i>nigrinus</i> Ricardo, <i>Machimus</i>	...	....	57
<i>nigrofasciatus</i> Brunetti, <i>Stenopogon</i>	...	....	29
<i>nigrohirsuta</i> Lichtwardt, <i>Laphria</i>		. .	15
<i>nilaparvata</i> Joseph and Parui, <i>Clephroneura</i>		...	51
<i>noctifer</i> Walker, <i>Ommatius</i>	...	...	39

## O

<i>obscurus</i> Joseph and Parui, <i>Promachus</i>		...	65
<i>oldroydi</i> Joseph and Parui, <i>Stenopogon</i>		....	29
<i>ophiones</i> Frey, <i>Leptogaster</i>	...	....	11
<i>opulentus</i> (Walker), <i>Trichomachimus</i>		....	67
<i>orientalis</i> Joseph and Parui, <i>Laphria</i>		....	15
<i>orientalis</i> (Ricardo), <i>Trichomachimus</i>		....	67

## P

<i>pallidipennis</i> Ricardo, <i>Philodicus</i>	...	...	62
<i>pallipes</i> Ricardo, <i>Machimus</i>	...	..	57
<i>paria</i> Bigot, <i>Maira</i>	...	....	17
<i>parvus</i> Ricardo, <i>Machimus</i>	...	....	57
<i>pashokensis</i> Joseph and Parui, <i>Ommatius</i>		...	40
<i>pennus</i> Walker, <i>Ommatius</i>	....	...	36
<i>peregrinus</i> (van der Wulp), <i>Ommatius</i>		...	40
<i>pillaii</i> Joseph and Parui, <i>Ommatius</i>	....		40
<i>planiceps</i> Fabricius, <i>Damalis</i>	....	....	32
<i>platymelas</i> Walker, <i>Ommatius</i>	...	---	40
<i>ponti</i> Joseph and Parui, <i>Ommatius</i>	...	...	40
<i>poonmudiensis</i> Joseph and Parui, <i>Heligmoneura</i>		---	53
<i>pradhani</i> Joseph and Parui, <i>Stenopogon</i>		....	29
<i>propinquus</i> Bromley, <i>Philodicus</i>	---	....	62
<i>pruthii</i> Joseph and Parui, <i>Michotamia</i>		...	37

pruthii Bromley, <i>Philodicus</i>	...	---	...	62
pseudoalbibarbis n. sp. Joseph and Parui, <i>Nusa</i>			...	19
prytanis (Walker), <i>Damalis</i>	....		---	33
pseudoartigasi (Joseph and Parui), <i>Damalis</i>			...	33
pseudodraavidicus Joseph and Parui, <i>Ommatius</i>			...	40
pseudoguptai Joseph and Parui, <i>Astochia</i>			...	48
pseudokempi Joseph and Parui, <i>Ommatius</i>			...	40
pubescens (Ricardo), <i>Trichomachimus</i>	....		...	67
pulla Oldroyd, <i>Clephyroneura</i>	...		...	51
pulverifer (Walker), <i>Stenopogon</i>	...		...	29
punjabensis Bromley, <i>Machimus</i>	...		...	57
purpurata (Westwood), <i>Opeatocerus</i>	---		....	21
pusio Wiedemann, <i>Asilus</i>	...	....	...	47

## R

rajasthanensis Joseph and Parui, <i>Apoclea</i>			...	46
ramakrishnai Bromley, <i>Promachus</i>	...		---	65
ramakrishnai Joseph and Parui, <i>Stichopogon</i>			....	42
raven (Bromley), <i>Stenopogon</i>	...		---	30
ricardoi Joseph and Parui, <i>Heligmoneura</i>			---	53
ricardoi (Bromley), <i>Machimus</i>	...		...	57
ricardoi Bromley, <i>Asilus</i>	...	---	...	57
robusta Joseph and Parui, <i>Clephyroneura</i>			....	51
robusta Ramachandra Rao and Parui, <i>Merodontina</i>				36
rubescens Frey, <i>Ammophilomima</i>	...		....	10
rubisetosus Oldroyd, <i>Trichomachimus</i>			---	68
rufipes Ricardo, <i>Machimus</i>	....		....	57
rufiventris (Macquart), <i>Anacinaces</i>	....		...	46
rufoabdominalis (Joseph and Parui), <i>Damalis</i>			....	33

## S

scalaris Bigot, <i>Saropogon</i>	....	---	....	27
scarbroughi Joseph and Parui, <i>Maceimus</i>			....	57
semifulva Bigot, <i>Laphria</i>	....	---	---	15
semirufa Oldroyd, <i>Clephyroneura</i>	....		...	51

senomera Macquart, Laphria	...	...	14
sexfasciata (Walker), Laxenecera	...	...	16
shimogaensis Joseph and Parui, Heligmoneura	...	...	53
sikkimensis Enderlein, Merodontina	...	...	36
silcharensis Joseph and Parui, Astochia	...	...	48
simplex Bigot, Leptogaster	....	...	10
simplex (Bigot), Euscelidia	...	...	10
singlensis Oldroyd, Ommatius	...	...	40
smithi Joseph and Parui, Machimus	...	...	57
spathulatus Doleschall, Ommatius	....	...	40
speculiventris de Meijere, Damalis	...	....	33
<i>spinibarbis</i> van der Wulp, Ommatius	...	...	39
splendida (Guerin—Meneville), Maira	....	...	17
<i>spretus</i> van der Wulp, <i>Cinadus</i>	...	...	52
strigatum Enderlein, Microstylum	...	...	26
subgracilis Bromley, Ommatius	...	...	40
subtus Bromley, Stenopogon	...	...	30
sundaica (Jaennicke), Clephyroneura	....	....	51

## T

tamenensis Joseph and Parui, Ommatius	...	...	41
tandoni Joseph and Parui, Ommatius	...	...	41
tenellus van der Wulp, Ommatius	...	....	41
tenuicornis (Walker), Heligmoneura	....	....	53
<i>testaceus</i> Bigot, Lochites	...	...	36
tibialis Ricardo, Machimus	...	---	57
tiwarii Joseph and Parui, Astochia	...	...	48
tomentosus Oldroyd, Stichopogon	....	...	42
trifarius Macquart, Asilus	---	....	47
trimelas (Walker), Microstylum	....	...	26
tresignata Ricardo, Heligmoneura	....	....	54
tresignatus (Ricardo), Neomochtherus	---	---	60
tristis Bigot, Promachus	...	...	65

tropicus Ricardo, Neoitams	...	...	59
truncatus Joseph and Parui, Ommatius		...	41
tsacasi Joseph and Parui, Heligmoneura		...	54
tuberculatus Joseph and Parui, Ommatius		...	41

## U

univentris (Walker), Philodicus	...	—	62
---------------------------------	-----	---	----

## V

varipes (Macquart), Promachus	...	...	65
varshneyi Joseph and Parui, Microstylum		...	26
volcatus (Walker), Pegesimallus		...	27

## W

waigiensjs Bigot, Maira	....	...	18
westermanii (Macquart), Promachus		...	66
wilcoxi Joseph and Parui, Clephyroneura		...	51

## X

xylocopiformis (Walker), Hyperechia	---	...	14
-------------------------------------	-----	-----	----

## Y

yenpingensis (Bromley), Heligmoneura		...	54
yerburiensis Ricardo, Promachus	...	...	66
yerburyi Londt, Pegesimallus	...	...	27



## ADDENDA

As final proofs of this paper came to our hands some additional information has come to light, which are given below.

## Page 17

2. *Maira bicolor* Joseph & Parui, 1987. *Bull. zool. Surv. India*, 8 (1—3) : 223.
6. *Maira indiana* Joseph & Parui, 1987. *Ibid.* 8 (1—3) : 90.

## Page 18

3. *Nusa bengalensis* Joseph & Parui, 1987. *Oriental Ins.* 21 : 136.

## Page 19

5. *Nusa ghorpadei* Joseph & Parui, 1987 *Ibid.* 21 : 138.
6. *Nusa indica* Joseph & Parui, 1987. *Ibid.* 21 : 139.
7. *N. pseudo albibasis* Joseph & Parui, 1987, *Ibid.* 21 : 140.

## Page 20

*Anoplothyrea indiana* Joseph & Parui, 1987. *Ibid* 21 : 129.

## Page 25

9. *Microstylum coimbatorensis* Joseph & Parui, 1987, *Bull. zool Surv. India.* 8 (1—3) : 225.

## Page 26

10. *Microstylum marudamalaiensis* Joseph & Parui, 1987. *Ibid.* 8 (1—3) : 91.
11. *Oldroydia femorata* Joseph & Parui, 1987. *Oriental Ins.* 21 : 148.

## Page 31

II Genus *Damalis* Fabricius

*Xenomyza* Wiedemann is a synonym of *Damalis* Fabricius (Opinion, 1985). Consequently Londt (1989) has placed all the species described under the former in the latter without mentioning all the individual species.

## Page 31

1. *Damalis artigasi* (Joseph & Parui)  
*Xenomyza artigasi* Joseph & Parui, 1984. *Ent. Scand.* **15** : 447.
3. *Damalis cederholmi* (Joseph & Parui)  
*Xenomyza cederholmi* Joseph & Parni, 1984. *Ibid.* **15** : 448.

## Page 32

5. *Damalis dentata* (Joseph & Parui)  
*Xenomyza dentata* Joseph & Parui, 1987. *Bull. zool. Surv. India.* **8** (1—3) : 93
6. *Damalis dravidica* (Joseph & Parui)  
*Xenomyza dravidica* Joseph & Parui, 1984. *Ent. Scand.* **15** : 144.
8. *Damalis himalayensis* (Joseph & Parui)  
*Xenomyza himalayensis* Joseph & Parui, 1987. *Bull. zool. Surv. India* **8** (1—3) : 94.
9. *Damalis indica* (Joseph & Parui)  
*Xenomyza indica* Joseph & Parui, 1984. *Ent. Scandu* **15** : 444.
10. *Damalis infuscata* (Joseph & Parui)  
*Xenomyza infuscata* Joseph & Parui, 1984. *Oriental Ins.* **18** ; 54.
11. *Damalis keralaensis* (Joseph & Parui)  
*Xenomyza keralaensis* Joseph & Parui, 1984. *Ent. Scand.* **15** : 445.
12. *Damalis mercaraensis* (Joseph & Parui)  
*Xenomyza mercaraensis* Joseph & Parui, 1984. *Ibid.* **15** : 437.

## Page 33

15. *Damaiis pseudoartigasi* (Joseph & Parui)  
*Xenomyza pseudoratigasi* Joseph & Parui, 1987. *Bull. zool. Surv India* **8** (1—3) : 226.

16. *Damalis fuscoabdominalis* (Joseph & Parui)  
*Xenomyza fuscoabdominalis* Joseph & Parui, 1984. *Ent. Scand.* 15 : 445.

Page 37

6. *Michotamia pruthii* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 95.

Page 38

4. *Ommatius bengalensis* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 228.

Page 39

16. *Ommatius jonesi* Joseph & Parui, 1984. *Oriental Ins.* 18 : 57.

Page 40

26. *Ommatius pillaii* Joseph & Parui, 1986. *Rec. Indian Mus.* 84 : 158.

29. *Ommatius pseudokempi* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 210.

Page 42

1. *Stichopogon albimystax* Joseph & Parui, 1988. *Oriental Ins.* 22 : 88.

6. *Stichopogon ramakrishnai* Joseph & Parui, 1988. *Ibid.* 22 : 92.

Page 48

9. *Astochia muralidharani* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 99.

10. *Astochia pseudoguptai* Joseph & Parui, 1987. *Ibid.* 8 (1—3) : 100.

Page 52

3. *Heligmoneura bengalensis* Joseph & Parui, 1986. *Rec. zool. Surv. India* 83 : 87

## Page 53

10. *Heligmoneura incisularis* Joseph & Parui, 1986. *Ibid.* 83 : 89.

## Page 54

18. *Heligmoneura tsacasi* Joseph & Parui, 1986. *Ibid.* 83 : 91.

## Page 55

4. *Machimus bengalensis* Joseph & Parui, 1986. *Rec. zool. Surv. India*,  
Occasional paper No. 96 : 11
6. *Machimus calicutensis* Joseph & Parui, 1986. *Ibid.* No. 96 : 13.
7. *Machimus cheriani* Joseph & Parui, 1986. *Ibid.* No. 96 : 15.
8. *Machimus cinchonaensis* Joseph & Parui, 1986, *Ibid.* No. 96 : 16.

## Page 56

10. *Machimus dravidicus* Joseph & Parui, 1986. *Ibid.* No. 96 : 19.
15. *Machimus indicus* Joseph & Parui, 1986. *Ibid.* No. 96 : 27.
18. *Machimus keralaensis* Joseph & Parui, 1986. *Ibid.* No. 96 : 32.
21. *Machimus mussooriensis* Joseph & Parui, 1986. *Ibid.* No. 96 : 37.

## Page 57

29. *Machimus scarbroughi* Joseph & Parui, 1986. *Ibid.* No. 96 : 49.
30. *Machimus smithi* Joseph & Parui, 1986 *Ibid* No. 96 : 51.

## Page 58

2. *Neoitamus bengalensis* (Joseph & Parui), 1986. *Rec. zool. Surv. India* 83 (3 & 4) : 96.
3. *Neoitamus calcuttaensis* Joseph & Parui, 1986. *Ibid.* 83 (3 & 4) : 97.

4. *Neoitamus dhenkundensis* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 106.

5. *Neoitamus grahami* Joseph & Parui, 1986 *Rec. zool. Surv. India* 83 (3 & 4) : 95

Page 64

6. *Promachus genitalis* Joseph & Parui, 1987. *Bull. zool. Surv. India* 8 (1—3) : 233.

9. *Promachus indicus* Joseph & Parui, 1986. *Rec. zool. Surv. India* 83 (3 & 4) : 102.

Page 65

11. *Promachus lehri* Joseph & Parui, *Bull. zool. Surv. India* 8 (1—3) : 212.

16. *Promachus obscurus* Joseph & Parui, 1987. *Ibid.*, 8 (1—3) : 213.

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## E R R A T A

<i>Page</i>	<i>Line</i>	<i>For</i>	<i>Read</i>
4	24	<i>Cryptopogon</i>	<i>Cyrtopogon</i>
9	37	medical	medial
13	12	<i>Elacotoma</i>	<i>Elaeotoma</i>
21	3	loality	locality
	9	shor	short
	13	eck	Neck
24	6	<i>Gryptoconus</i>	<i>Grypoctonus</i>
	24	Fnderlein	Enderlein
25	7	ype	Type
	33	riental	Oriental
26	13	Bype	Type
	14	of	—
	28	dens	dense
27	7	w!th	with
	26	iwth	with
28	4	ocoiput	occiput
31	1	283	(2 & 3)
	18	Preemade	Peermade
33	5	Walker	(Walker)
	30	lon	long
35	9	<i>Cliopogon</i>	<i>Clinopogon</i>
36	16	<i>Anx.</i>	<i>Anz.</i>
37	12	Pilbht	Pilbhit
38	28	<i>hardsky</i>	<i>hradsky</i>
39	5	Pradish	Pradesh
40	12	l	—
41	10	Occasionl	Occasional
41	14	—	:
41	18	Pseudomerodontna	Pseudomerodontina
41	19	genus	genus
41	20	beut	bent
41	33	enlargen	enlarged
41	33	bood	hood
43	5	Roa	Rao
	11	sogment	segment
	37	patern	pattern
44	9	telescepic	telescopic
	21	sybmarginal	submarginal

<i>Page</i>	<i>Line</i>	<i>For</i>	<i>Read</i>
46	15	vain	vein
	27	eombined	combined
47	24	apex	apex,
	25	ventrally	ventrally,
48	4	Ricaro	Ricardo
50	30	<i>Karntakaensis</i>	<i>Karnatakaensis</i>
51	18	Vizagapatan	Vizagapatam
52	10	Aatalog	Catalog
	21	Iudia	India
53	7	22	282
	8	Manall	Manali
55	20	<i>bengalensia</i>	<i>bengalensis</i>
	27	Area	Area,
56	21	intilis	<i>inutilis</i>
60	5	eighte	eighth
61	19	rclated	related
	22	proctigcr	proctiger
	26	Reisc	Reise
64	13	<i>dntractus</i>	<i>contractus</i>
67	5	denselv	densely
71	18	komments	comments
71	28	Enomologist	Entomologist.
72	4	<i>Cerdistuc</i>	<i>Cerdistus</i>
	6	<i>Promacus</i>	<i>Promachus</i>
	17	ERGFL	ENGEL
73	15	Dasypogyninac	Dasypogoninae
	20	Australion	Australian
74	12	Aat	Nat
	20	Divtera	Diptera
	31	Rerliner	Berliner
75	3	Neva	Nova
	15	Leqtogastrinen	Leptogastrinen
81	15	Conuos	Connus
	21	Uuited	United