

ON COLLECTIONS OF FLOWER FLIES (DIPTERA : SYRPHIDAE)
FROM SOUTH INDIA

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(With 6 Figures)

INTRODUCTION

The Syrphidae, commonly known as flower flies or hover flies include a few species which have been described as early as 1787 by Fabricius from South India (comprising Andhra Pradesh, Tamil Nadu, Karnataka and Kerala). Subsequent additions to the South Indian fauna appear to have been made by Fabricius (1805), Wiedemann (1819, 1824), Guérin-Méneville (1834), Macquart (1842), Bigot (1883), Brunetti (1908, 1915, 1923), Hervé-Bazin (1922, 1923), Cherian (1934), Vockeroth (1969), Knutson, Thompson and Vockeroth (1975), and Joseph and Parui (*in press*).

An attempt is made here to further our knowledge on the fauna of the area on the basis of the collections so far (1970-1981) accumulated in the Zoological Survey of India, Calcutta. As a result of this study, 2 species (with the asterisk) recorded here for the first time are added to 43 species belonging to 21 genera hitherto known from South India.

SYSTEMATIC ACCOUNT

Subfamily SYRPHINAE

Tribe SYRPHINI

1. *Asarkina* (*Asarkina*) *ericetorum* (Fabricius)

1781. *Syrphus ericetorum* Fabricius, *Spec. Insect.*, 2 : 425.

1923. *Asarcina ericetorum* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 63.

1975. *Asarkina* (*Asarkina*) *ericetorum* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 309.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 1 ♂ (ZSI Reg. No. 7165/H₆), Top slip, Coimbatore, Tamil Nadu, 8. xii. 1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur throughout the Oriental region and has also been recorded from Australia, Fiji, Moluccas, New Guinea and Samoa (Knutson *et al.*, 1975). The type-locality of the species is 'Africa aequinoctial'.

2. *Dideopsis aegrota* (Fabricius)

1805. *Eristalis aegrota* Fabricius, *Syst. Antliat.* : 243.

1923. *Asarcina aegrota* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 64.

1975. *Dideopsis aegrota* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 313.

Diagnosis : Datta and Chakraborti (*in press*). Male terminalia illustrated by Vockeroth (1969).

Material examined : 1 ♂ (ZSI Reg. No. 7166/H₆), Idamalaya, Ernakulum Dist., Kerala, 18.xii.1979, Coll. A. N. T. Joseph ; 1 ♂ (ZSI Reg. No. 7167/H₆), Konnakuzhi, Chalakudy, Trichur Dist., Kerala, 22.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur throughout south-east Asia and Nepal, and has also been recorded from Australia and Moluccas (Knutson *et al.*, 1975). The type-locality of the species is China.

3. *Episyrphus balteatus* (De Geer)

1776. *Musca balteata* De Geer, *Me'm. pour serv. His. Ins.*, 6 : 116.

1923. *Syrphus balteatus* (De Geer) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 82.

1975. *Episyrphus balteatus* (De Geer) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 314.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 1 ♀ (ZSI Reg. No. 7168/H₆), Vazhachal, Anamalai Hills, Trichur Dist., 21.xii.1979, Coll. A. N. T. Joseph ; 2 ♀ ♀ (ZSI Reg. Nos. 7169/H₆-7170/H₆), Parambikulam ; Palghat Dist., Kerala, 9.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to be extremely common throughout the Oriental region and occurs also in Australia, Bonin islands, Ethiopian and Palaeartic regions (Brunetti, 1923 ; Knutson *et al.*, 1975 ; Datta and Chakraborti, *in press*). The species has originally been described from Europe.

4. *Ischiodon scutellaris* (Fabricius)

1805. *Scaeva scutellaris* Fabricius, *Syst. Antliat.* : 252.

1923. *Ischiodon scutellaris* (Fabricius) : Brunetti, *Fauna Brit. India*. Diptera, 3 : 97.

1975. *Ischiodon scutellaris* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 315.

Diagnosis : Eye bare ; metasternum bare ; antennal segment 3 subacute apically ; wing with R_{4+5} ending well before wing apex ; upper margin of sternopleuron with distinct yellow spot ; a few short hairs anteriorly below upper patch of sternopleural hairs ; hind trochanter in male with spine-like process ventrally ; male terminalia (Vockeroth, 1969).

Material examined : 1 ♂ (ZSI Reg. No. 7171/H₆), Mustor, Chitradurga, Karnataka, 21.xii.1980, Coll. *S. K. Gupta*.

Remarks : The species has been reported to have wide distribution from the south-east Asia to Japan and has also been recorded from Australia, Hawaii and Micronesia (Knutson *et al.*, 1975). The type-locality of the species is Tamil Nadu in India.

5. *Sphaerophoria indiana* Bigot

1884. *Sphaerophoria indiana* Bigot, *Annls Soc. ent. Fr.* (6) 4 : 99.

1923. *Sphaerophoria indiana* Bigot : Brunetti, *Fauna Brit. India*, Diptera, 3 : 102.

1975. *Sphaerophoria indiana* Bigot : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 318.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 1 ♂ (ZSI Reg. No. 7172/H₆), Eluppara, Kottayam Dist., Kerala, 30. xii. 1970, Coll. *A. N. T. Joseph* ; 2 ♂ ♂ (ZSI Reg. Nos. 7173/H₆-7174/H₆), Nopokula, Mercara, Karnataka, 5.i.1981, Coll. *S. K. Gupta* ; 1 ♂ (ZSI Reg. No. 7175/H₆), Londa, Belgaum Dist., Karnataka, 25. xii. 1980, Coll. *G. K. Srivastava*.

Remarks : The species has been reported to occur in Himachal Pradesh, Karnataka, Maharashtra, Sikkim, Uttar Pradesh and West Bengal of India, and in China, Korea, Nepal, ? Sri Lanka and eastern USSR (Brunetti, 1923 ; Knutson *et al.*, 1975 ; Datta and Chakraborti, *in press*). The type-locality of the species is 'Indes'.

Tribe MELANOSTOMATINI

6. *Melanostoma orientale* (Wiedemann)

1824. *Syrphus orientalis* Wiedemann, *Analecta Ent.* : 36.

1923. *Melanostoma orientale* (Wiedemann) : Bruuetti, *Fauna Brit. India*, Diptera, 3 : 48.

1975. *Melanostoma orientale* (Wiedemann): Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 325.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 2 ♀♀ (ZSI Reg. Nos. 7176/H₆-7177/H₆), Top slip, Coimbatore, Tamil Nadu, 8.xii.1979, Coll. *A. N. T. Joseph* ; 3 ♀♀ (ZSI Reg. Nos. 7178/H₆-7180/H₆), Nopokula, Mercara, Karnataka, 5.i.1981, Coll. *S. K. Gupta* ; 1 ♀ (ZSI Reg. No. 7181/H₆), Muthodi, Chikmagalur, Karnataka, 31.xii.1980, Coll. *S. K. Gupta* ; 1 ♀ (ZSI Reg. No. 7182/H₆), Belgaum Dist., Karnataka, 27.xii.1980, Coll. *G. K. Srivastava*.

Remarks : The species has been reported to occur throughout the Oriental region (Knutson *et al.*, 1975) but has so far been recorded from Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir (Palaeartic part also), Meghalaya, Uttar Pradesh, Sikkim and West Bengal in India and from Bhutan, Pakistan and Sri Lanka (Datta and Chakraborti, *in press*). The type-locality of the species is 'Ind. Or.'

7. *Melanostoma univittatum* (Wiedemann)

1824. *Syrphus univittatum* Wiedemann, *Analecta Ent.* : 36.
1923. *Melanostoma univittatum* (Wiedemann): Brunetti, *Fauna Brit. India*, Diptera, 3 : 50.
1975. *Melanostoma univittatum* (Wiedemann): Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 325.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 2 ♂♂ (ZSI Reg. Nos. 7183/H₆-7184/H₆), Kumily, Idukki Dist., Kerala, 23.xii.1970, Coll. *A. N. T. Joseph* ; 1 ♂, 1 ♀ (ZSI Reg. Nos. 7185/H₆-7186/H₆), Takkachi, Kottayam Dist., Kerala, 22.xii.1970, Coll. *A. N. T. Joseph* ; 1 ♂, (ZSI Reg. No. 7187/H₆), Eluppara, Kottayam Dist., Kerala, 30.xii.1970, Coll. *A. N. T. Joseph* ; 1 ♂, 1 ♀ (ZSI Reg. Nos. 7188/H₆-7189/H₆), Belgaum Dist., Karnataka, 27.xii.1980, Coll. *G. K. Srivastava* ; 1 ♂ (ZSI Reg. No. 7190/H₆), Mudigore, Chikmagalur, Karnataka, 30.xii.1980, Coll. *S. K. Gupta* ; 3 ♂♂ (ZSI Reg. Nos. 7191/H₆-7193/H₆), Nopokula, Mercara, Karnataka, 5.i.1981, Coll. *S. K. Gupta*.

Remarks : The species has been reported to occur throughout south-east Asia, ? Australia, ? Fiji, Japan, ? New Caledonia and ? Samoa (Knutson *et al.*, 1975). The type-locality of the species is 'Ind. Or.'

Tribe PARAGINI

8. **Paragus (Paragus) serratus** (Fabricius)

1805. *Mulio serratus* Fabricius, *Syst. Antliat.* : 186.
 1928. *Paragus serratus* (Fabricius) : Brunetti, *Fauna Brit. India, Diptera*, 3 : 31.
 1975. *Paragus (Paragus) serratus* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 327.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 2 ♂♂, 1 ♀ (ZSI Reg. Nos. 7194/H₆-7196/H₆), Ernakulum, Kerala, 16.xii.1979, Coll. *A. N. T. Joseph* ; 1 ♂, 1 ♀ (ZSI Reg. Nos. 7197/H₆-7198/H₆), Parambikulam, Palghat Dist., Kerala, 9-10.xii.1979, Coll. *A. N. T. Joseph* ; 1 ♂ (ZSI Reg. No. 7199/H₆), Top slip, Coimbatore, Tamil Nadu, 8.xii.1979, Coll. *A. N. T. Joseph* ; 5 ♀♀ (ZSI Reg. Nos. 7200/H₆-7204/H₆), Chalakudy, Trichur Dist., Kerala, 22-23.xii.1979, Coll. *A. N. T. Joseph* ; 1 ♀ (ZSI Reg. No. 7205/H₆), Idamallaya, Ernakulum, 18.xii.1979, Coll. *A. N. T. Joseph* ; 1 ♂ (ZSI Reg. No. 7206/H₆), Mustor, Chitradurga, Karnataka, 21.xii.1980, Coll. *S. K. Gupta*.

Remarks : The species occurs almost everywhere in India and has also been recorded from Borneo, Java, Nepal, Pakistan, Papua and Africa (Datta and Chakraborti, *in press*). The species has originally been described from Tamil Nadu.

* 9. **Paragus (Pandasyophthalmus) rufiventris** Brunetti

1913. *Paragus rufiventris* Brunetti, *Rec. Indian Mus.*, 8 : 157.
 1923. *Paragus rufiventris* Brunetti : Brunetti, *Fauna Brit. India, Diptera*, 3 : 34.
 1975. *Paragus (Pandasyophthalmus) rufiventris* Brunetti : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 328 (As subspecies of *P. (P.) tibialis* (Fallén)).

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 1 ♂ (ZSI Reg. No. 7207/H₆), Chalakudy, Trichur Dist., Kerala, 23.xii.1979, Coll. *A. N. T. Joseph*.

Remarks : The species occurs in Assam, Bihar, Jammu and Kashmir, Sikkim, Uttar Pradesh and West Bengal of India (Datta and Chakraborti, *in press*) and in Nepal, Pakistan and Sri Lanka (Knutson *et al.*, 1975). This has originally been described from Assam. We, however, maintain the species status as per our earlier works (Datta and Chakraborti, 1983 ; *in press*).

Subfamily MILESIINAE

Tribe ERISTALINI

10. *Eristalinus* (*Eristalinus*) *obscuritarsis* (de Meijere)

1908. *Eristalis obscuritarsis* de Meijere, *Tijdschr. Ent.*, 51 : 250.

1923. *Eristalis obscuritarsis* de Meijere : Brunetti, *Fauna Brit. India*, Diptera, 3 : 190.

1975. *Eristalinus* (*Eristalinus*) *obscuritarsis* (de Meijere): Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 348 (As synonym of *E. laetus* (Wiedemann)).

Diagnosis : Eye with sparse hairs on upper part only, black spotted ; antenna orange except brownish upper margin of segment 3, arista bare ; mesonotum shining black, with long yellowish hairs ; scutellum brownish with light margin ; subscutellar fringe represented by a few hairs only ; abdomen black, with large yellow spot on tergites 2 and 3, and curved band on tergite 4 ; male terminalia (Fig. 1).

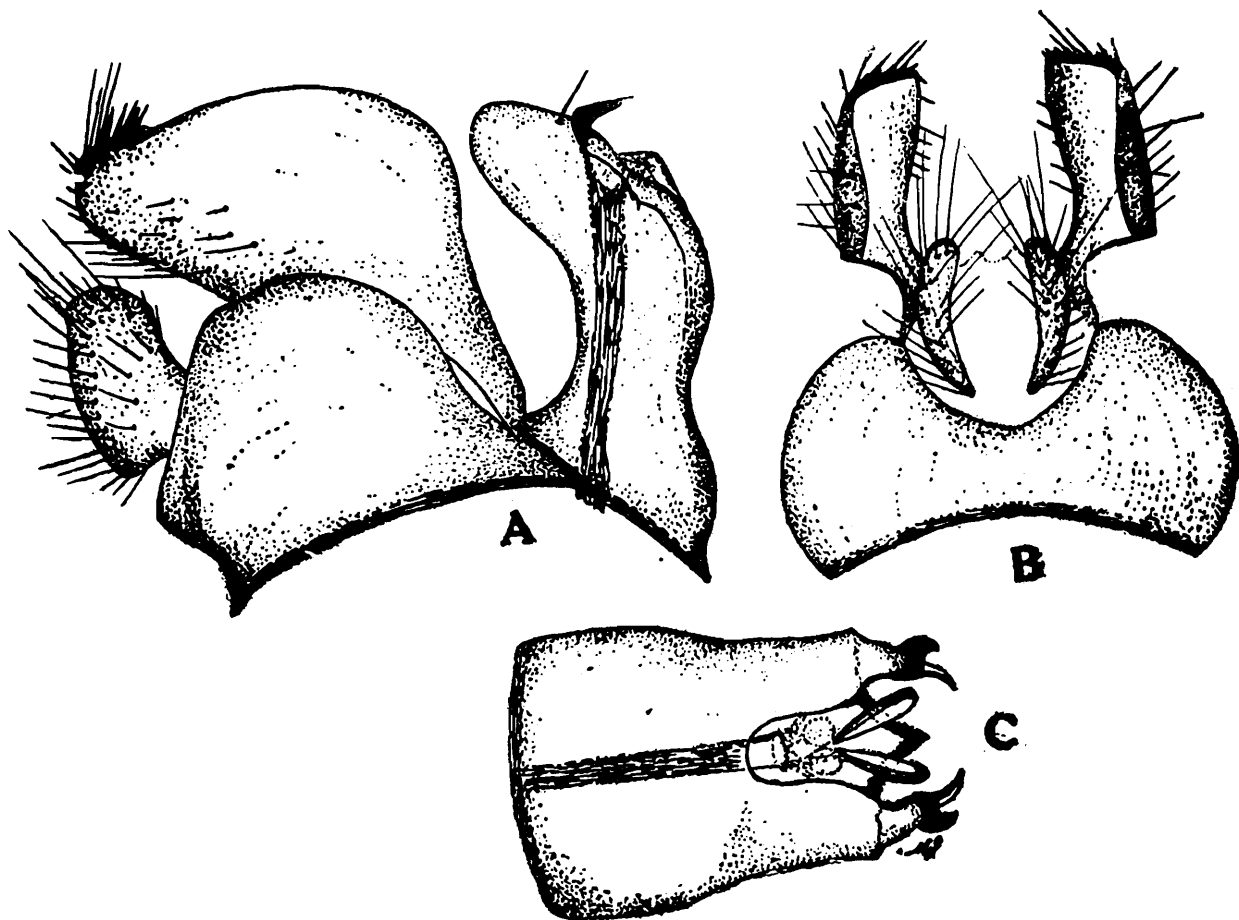


Fig. 1. *Eristalinus* (*Eristalinus*) *obscuritarsis* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Material examined : 1 ♂ (ZSI Reg. No. 7208/H₆), Parambikulum, Palghat Dist., Kerala, 7.xii.1979, Coll. A. N. T. Joseph ; 1 ♀ (ZSI Reg. No. 7209/H₆), Chalakudy, Trichur Dist., Kerala, 23.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur from Kashmir to Bangalore in India, and in Bangladesh, Java and Malaya (Brunetti, 1923 ; Knutson *et al.*, 1975). This has originally been described from Singapore and Bombay. The species is treated here as per Brunetti (*op. cit.*) without synonymization with *E. (E.) laetus* (Wiedemann) for difference in certain characters (Datta and Chakraborti, *in press*).

11. Eristalinus (Eristalinus) quinquestriatus (Fabricius)

1794. *Syrphus quinquestriatus* Fabricius, *Ent. Syst.*, 4 : 289.

1923. *Eristalis quinquestriatus* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 187.

1975. *Eristalinus (Eristalinus) quinquestriatus* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 349.

Diagnosis : Datta and Chakraborti (*in press*).

Material examined : 4 ♂♂, 4 ♀♀, (ZSI Reg. Nos. 7210/H₆-7217/H₆), Kumily, Idukki Dist., Kerala, 13-14.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur throughout the Oriental region and in Japan (Knutson *et al.*, 1975). The type-locality of the species is 'India orientali'.

12. Eristalinus (Merodonoides) multifarius (Walker)

1852. *Eristalis multifarius* Walker, *Insecta Saundersiana*, 1 : 248.

1923. *Eristalis multifarius* Walker : Brunetti, *Fauna Brit. India*, Diptera, 3 : 194.

1975. *Eristalinus (Merodonoides) multifarius* (Walker) : Knutson, Thompson and Vockeroth, *A catalog of Diptera of the Oriental Region*, 2 : 350.

Diagnosis : Eye bare, with two black stripes in addition to dark inner and hind border ; antenna black except orange lower side of segment 3 ; arista bare ; mesonotum dark grey, with shining four black stripes ; scutellum orange ; wing with petiolate marginal cell, hind femur conspicuously incrassated ; subscutellar fringe absent ; abdominal tergite 3 mainly orange, with a very large semicircular blackish spot on hinder half.

Material examined : 1 ♀ (ZSI Reg. No. 7218/H₆), Parambikulam, Palghat Dist., Kerala, 10.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur in Gujarat, Meghalaya, Rajasthan and Tamil Nadu of India (Brunetti, 1923), and has also been recorded from Java, Malaya, Nepal, Sri Lanka and Viet Nam (Knutson *et al.*, 1975). This has originally been described from East Indies (most probably Meghalaya).

***13. *Eristalis polychromata* Brunetti**

1923. *Eristalis polychromatus* Brunetti, *Fauna Brit. India*, Diptera, 3 : 180.

1975. *Eristalis polychromata* Brunetti: Knutson, Thompson and Vockeröth, *A Catalog of Diptera of the Oriental Region*, 2 : 353 (As unplaced species of *Eristalis* Latreille).

Diagnosis : Eye finely haired, with dark spots ; antenna brownish orange, arista bare ; mesonotum dark grey, with 4 shining black stripes ; scutellum shining blue black ; abdominal tergites 2, 3 & 4 orange except posterior margins and median spots ; no arcuate whitish band ; male terminalia (Fig. 2).

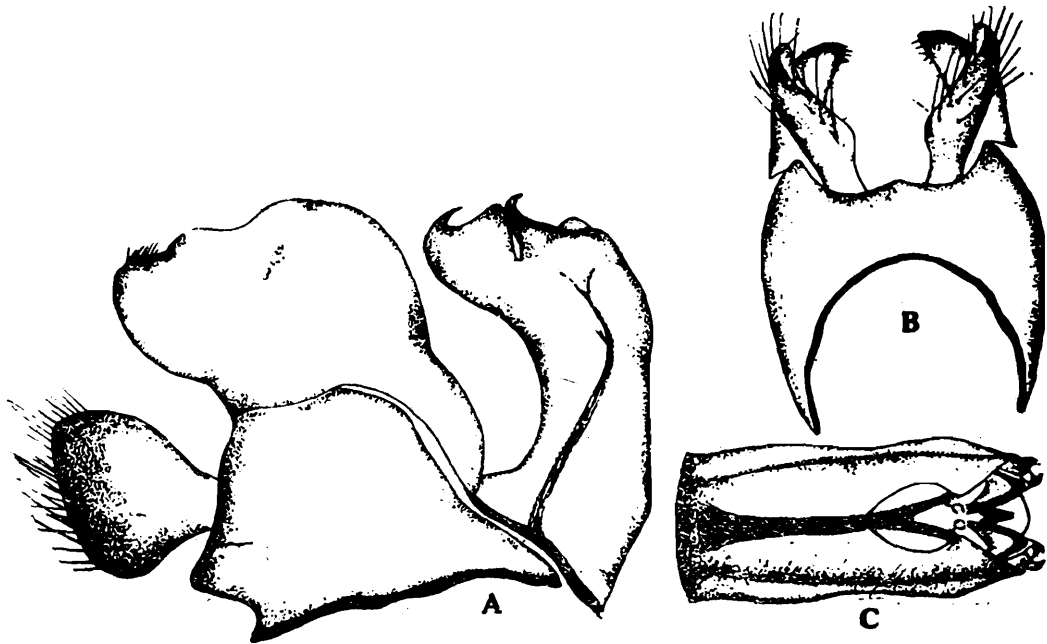


Fig. 2. *Eristalis polychromata* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Material examined : 1 ♂ (ZSI Reg. No. 7219/H₆), Konnakuzi, chalakudy, Trichur Dist., Kerala, 22.xii.1979, Coll. A. N. T. Joseph.

Remarks : This species has so far been known only from the type-locality : Calcutta, West Bengal in India (Brunetti, 1923 ; Knutson *et al.*, 1975).

14. *Mesembrius bengalensis* (Wiedemann)

-1819. *Eristalis bengalensis* Wiedemann, *Zool. Mag. (Wied.)*, 1 : 16.

1923. *Helophilus bengalensis* (Wiedemann) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 209.

1975. *Mesembrius bengalensis* (Wiedemann) : Knutson, Thompson and Vöckeröth, *A Catalog of Diptera of the Oriental Region*, 2 : 356.

Diagnosis : Eye bare ; antennal segments 1 and 2 black, 3 dark brown, with bare arista ; mesonotum grey with three longitudinal black

stripes ; scutellum translucent yellow, dark basally ; subscutellar fringe absent ; mid-femur in male with a tooth basally ; marginal cell open ; abdominal tergite 4 with an inverted, widely open V-mark ; male terminalia (Fig. 3).

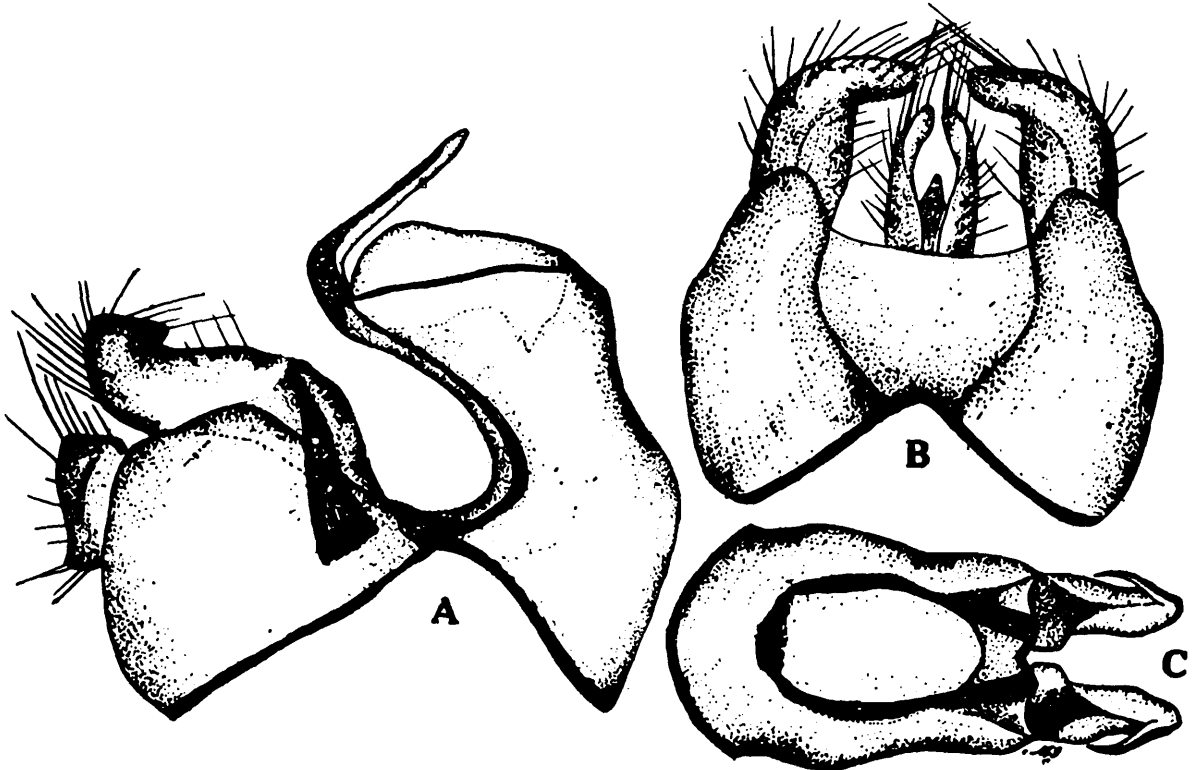


Fig. 3. *Mesembrius bengalensis* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Material examined : 1 ♂ (ZSI Reg. No. 7220/H₆), Mullayarm, Tamil Nadu, 23.vi.1981, Coll. K. Mathew.

Remarks : The species has been reported to occur from the south-east Asia to New Guinea and northern Australia (Knutson *et al.*, 1975). This has originally been described from 'Bengal'.

15. *Phytomia* (*Phytomia*) *errans* (Fabricius)

1787. *Syrphus errans* Fabricius, *Mantissa Insect.*, 2 : 337.

1923. *Megaspis errans* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 199.

1975. *Phytomia* (*Phytomia*) *errans* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 357.

Diagnosis : Eye bare ; antenna orange, arista bare ; metathoracic spiracular patch present ; wing mainly pale brown ; marginal cell petiolate ; hind femur unarmed ; abdomen brownish orange, tergites 2, 3 and 4 with a large blackish brown triangular spot ; male terminalia (Fig. 4).

Material examined : 4♂♂, 1♀ (ZSI Reg. Nos. 7221/H₆-7225/H₆), Idamalaya, Ernakulum Dist., Kerala, 18.xii.1979, Coll. A. N. T. Joseph ; 1♂, 1♀ (ZSI Reg. Nos. 7226/H₆-7227/H₆), Kumily, Idukki Dist., 14.xii.1979, Coll. A. N. T. Joseph ; 1♀ (ZSI Reg. No. 7228/H₆), Top slip, Coimbatore Dist., Tamil Nadu, 8.xii.1979, Coll. A. N. T. Joseph.

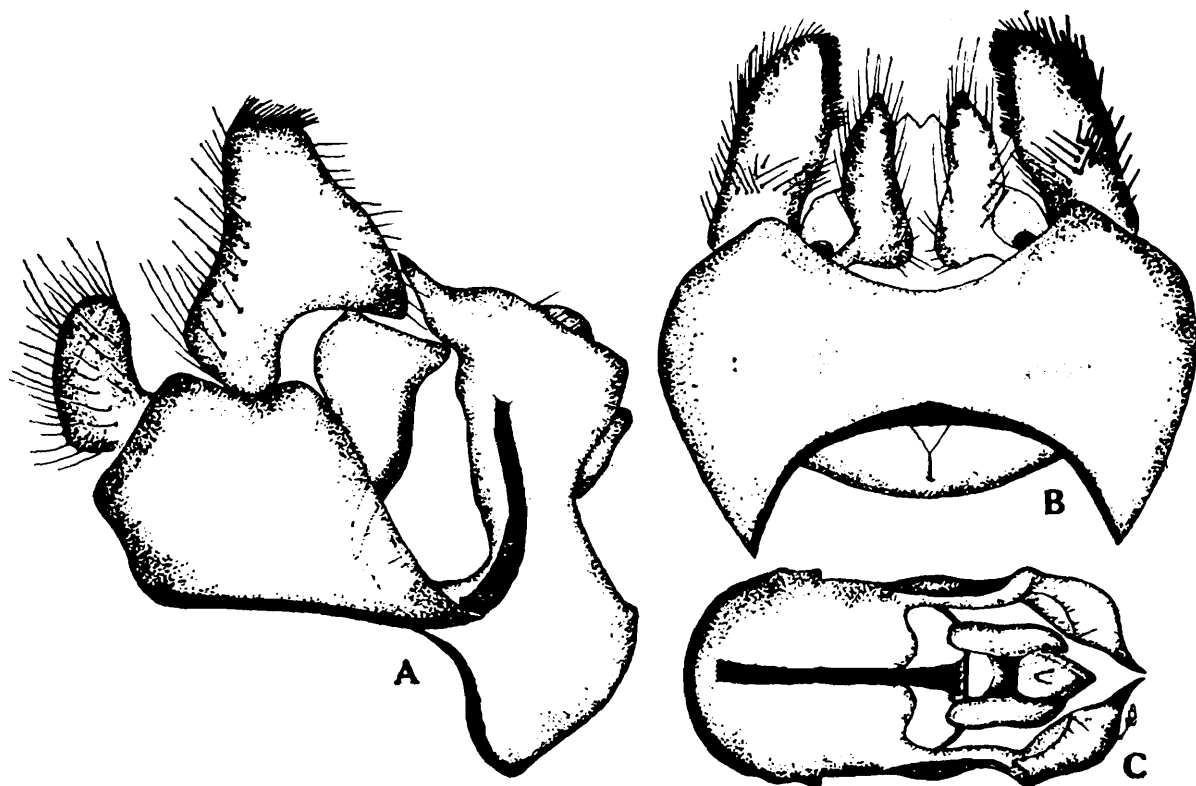


Fig. 4. *Phytomia (Phytomia) errans* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Remarks : The species has been reported to occur throughout south-east Asia, China and Japan (Knutson *et al.*, 1975). The species has originally been described from China.

16. *Phytomia (Phytomia) zonata* (Fabricius)

1787. *Syrphus zonatus* Fabricius, *Mantissa Insect.*, 2 : 337.

1923. *Megaspis zonatus* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 203.

1975. *Phytomia (Phytomia) zonata* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 357.

Diagnosis : Eye bare ; antenna black, arista distinctly hairy except distal one-third ; metathoracic spiracular pile patch present ; wing almost clear, a distinct blackish brown infuscation anteriorly, marginal cell petiolate ; hind femur unarmed, with pale yellow hairs basally on upper side ; abdomen black, tergites 3 and 4 each with two brownish yellow elongate spots.

Material examined : 1 ♂ with damaged abdomen (ZSI Reg. No. 7229/H₀), on road to Valiyaparathodu, Kerala, 5.xii.1980, Coll. R. S. Pillai.

Remarks : The species has been reported to occur throughout the entire south-east Asia, and in Japan, Korea and Manchuria (Knutson *et al.*, 1975 ; Datta and Chakraborti, 1985). This has originally been described from China.

17. *Phytomia (Dolichomerus) crassa* (Fabricius)

1787. *Syrphus crassus* Fabricius, *Mantissa Insect.*, 2 : 334.

1923. *Megaspis crassus* (Fabricius) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 197.

1975. *Phytomia (Dolichomerus) crassa* (Fabricius) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 358.

Diagnosis : Eye bare ; antenna black, arista hairy except distal one-third ; metathoracic spiracular patch present ; wing clear, a dark brown streak from vein 2 to 4, enclosing anterior cross-vein, a dark spot over tip of vein 3 ; marginal cell petiolate ; hind femur with a conspicuous basal tooth ; abdomen shining black, tergites 2, 3 and 4 each with a deep impression of a large circle ; male terminalia (Fig. 5).

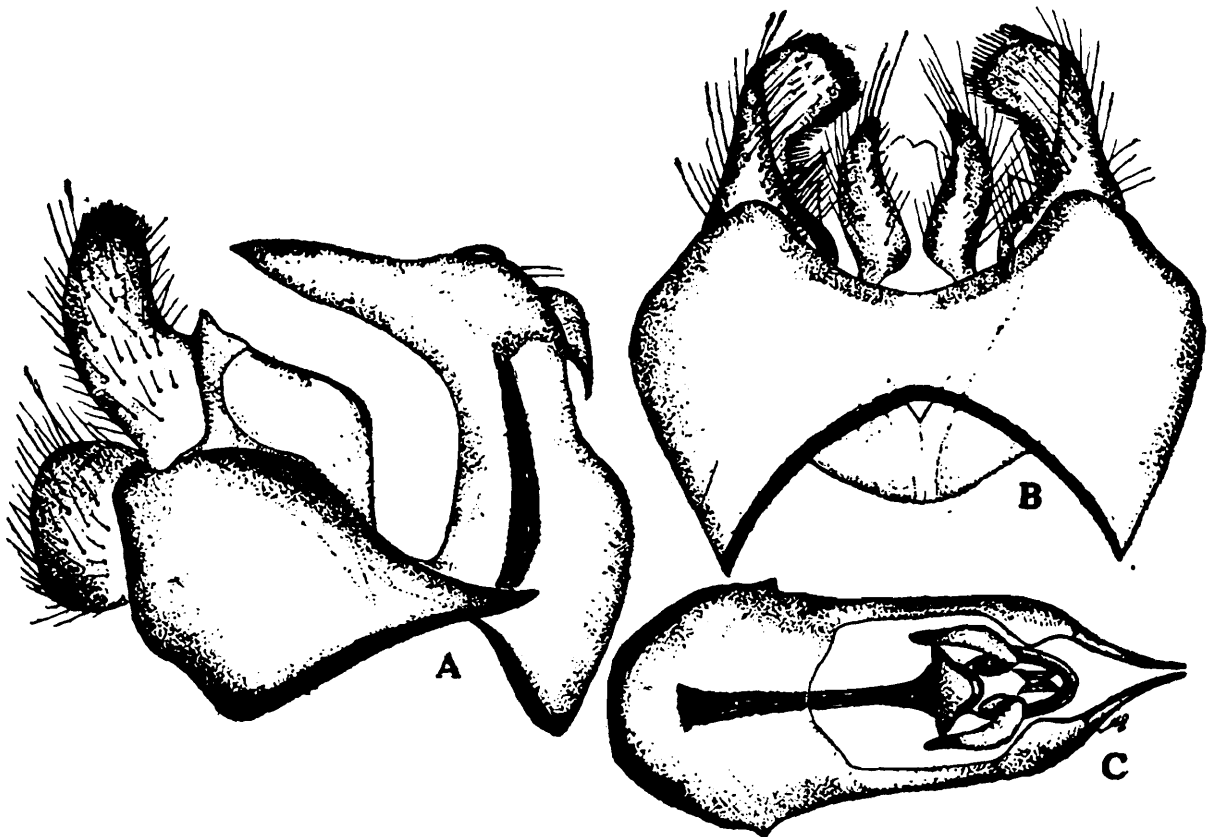


Fig. 5. *Phytomia (Dolichomerus) crassa* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Material examined : 1 ♂ (ZSI Reg. No. 7230/H₆), Idamalaya, Ernakulam Dist., Kerala, 18.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur in Andhra Pradesh, Assam, Bihar, Goa, Karnataka, Kerala, Meghalaya, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal of India, and in Celebes, Laos, Malaya, Nepal, Sri Lanka and Thailand (Brunetti, 1923 ; Knutson *et al.*, 1975). The species has originally been described from Tamil Nadu in India.

18. *Syritta indica* (Wiedemann)

1824. *Eumerus indicus* Wiedemann, *Analecta Ent.* : 33.

1883. *Syritta rufifacies* Bigot, *Annls Soc. Ent. Fr.* (6) : 3 : 538.

1923. *Syritta rufifacies* Bigot : Brunetti, *Fauna Brit. India*, Diptera, 3 : 247.

1975. *Syritta indica* (Wiedemann) : Knutson, Thompson and Vockeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 365.

Diagnosis : Eye bare ; meta-episternum with a few long hairs ; hind femur greatly swollen, with a spinose ridge on outer apical ventral third, brownish orange up to two-thirds from base, rest black ; abdominal tergites 2 and 3 with orange bands ; male terminalia (Fig. 6).

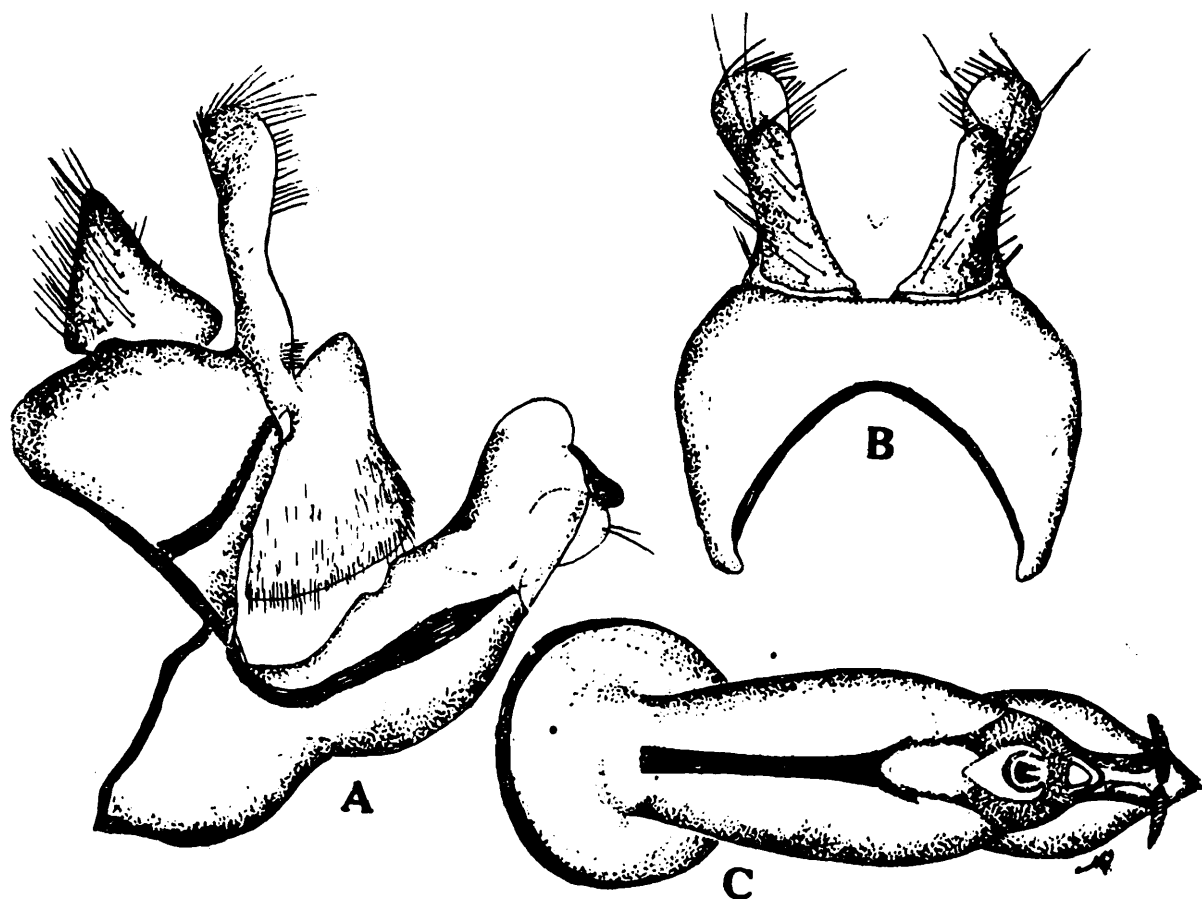


Fig. 6. *Syritta indica* : A, terminalia (lateral view) ; B, tergite 9, cerci and surstyli (dorsal view) ; C, sternite 9, superior lobes and aedeagal base (ventral view).

Material examined : 1 ♂ (ZSI Reg. No. 7231/H₆), Chalakudy, Trichur Dist., Kerala, 23.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur in Assam, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Pondicherry, Uttar Pradesh and West Bengal of India, and in Burma, Nepal and Taiwan (Brunetti, 1923 ; Knutson *et al.*, 1975). This has originally been described from 'East Indies'.

19. *Syritta pipiens* (Linnaeus)

1758. *Musca pipiens* Linnaeus, *Syst. Nat. Ed.* 10 : 594.

1923. *Syritta pipiens* (Linnaeus) : Brunetti, *Fauna Brit. India*, Diptera, 3 : 245.

1975. *Syritta pipiens* (Linnaeus) : Knutson, Thompson and Voekeroth, *A Catalog of Diptera of the Oriental Region*, 2 : 365.

Diagnosis : Eye bare ; meta-episternum with a few long hairs ; hind femur greatly swollen, with a spinose ridge on outer apical ventral third, black with orange base, with an orange streak underside in middle ; abdomen largely black, tergites 2 and 3 each with a pair of pale yellow spots.

Material examined : 1 ♀ (ZSI Reg. No. 7232/H₆), Top slip, Coimbatore, Tamil Nadu, 8.xii.1979, Coll. A. N. T. Joseph.

Remarks : The species has been reported to occur in Himachal Pradesh, Kashmir, Tamil Nadu, Uttar Pradesh and West Bengal of India (Brunetti, 1923 ; Cherian, 1934 ; Datta and Chakraborti, 1983), and in Nepal and Holarctic region (Knutson *et al.*, 1975). This has originally been described from Europe.

SUMMARY

The paper deals with 19 species under 12 genera of the Syrphidae, including new distributional records for 2 species in South India. The male terminalia of 6 species are illustrated herein.

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