

**OCCASIONAL PAPER NO. 231**

**RECORDS OF THE  
ZOOLOGICAL SURVEY OF INDIA**

**Checklist of Calliphoridae (Diptera) of India**

**B. C. NANDI**

**ZOOLOGICAL SURVEY OF INDIA**

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# RECORDS OF THE ZOOLOGICAL SURVEY OF INDIA

## Checklist of Calliphoridae (Diptera) of India

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सत्यमेव जयते

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Kolkata**

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## INTRODUCTION

Calliphorid flies are very important in medical, sanitary, veterinary, forensic and agricultural sciences and are distributed in all zoogeographical regions. The adult flies have a great role in transmitting various types of viruses, bacteria, fungi, protozoans and helminthes which cause summer diarrhea, bacillary and amoebic dysentery, poliomyelitis, cholera, plague and tuberculosis (Greenberg, 1971). They are regarded as the greatest hygienic important flies because they are attracted to and breed in different kinds of dead bodies, garbage, excreta of different animals and thus cause public hazards by transmitting various micro-pathogens mechanically from putrefied materials to human food. The larvae are parasitic, saprophagous or scavengers, sanguivorous and predaceous. Some of the parasitic larvae cause myiasis in different body parts of man and other animals (James, 1947; Dasgupta, 1962; Zumpt, 1965). During severe outbreak of cutaneous myiasis in sheep, 30% of the flocks may die (Kettle, 1995). A very few larvae are useful in detecting the approximate time of untimely death of a person in murder case and thus they are very helpful in forensic science (Smith, 1986). The parasitic or predator larvae affect earthworms, snails, toads, frogs, nestling birds and locusts (Draber-Mónko, 1981; Rognes, 1992b) and some of them can be used as agents for biological control of some of the important insect pests. Few larvae cause loss of dried fish and various kinds of fish and meat products (Esser, 1991; Sinha and Nandi, 2004) and thus they pose a threat to all kinds of meat-products. A few larvae were earlier used for the treatment of chronic osteomyelitis (Stewart, 1934) and at present also are being used in treatment in cases where antibiotics are ineffective and surgery is impracticable (Sherman and Pechter, 1988). In some cases they are also used for treatment in tubercular abscesses and complex fractures (Busvine, 1980) and thus they have a significant role in medical science.

The members of the family are usually known as blowflies, blue bottles or green bottles due to their blue, green, yellow, brown, gray or black colours. They are generally oviparous (a few are viviparous) and breed in decaying animal matter and on living animals. The adults of the family can be distinguished from other related families in having well developed thoracic squamae, two notopleural and a distinct row of hypopleural bristles and the larvae in having posterior spiracles in slight depression in posterior plate.

Senior-White (1922, 1923, 1924a,d,1925,1926), Townsend (1917) and Senior-White *et al.*(1940) had made valuable contributions to Indian Calliphoridae and described substantial number of new species from Indian subcontinent. Later, very scattered works have been done from different parts of India by different authors. The aim of this paper is to provide a complete checklist of all Indian Calliphoridae with updated distributional record of species from Indian states and union territories. A total of 112 species under thirty genera are included here from 35 political subdivisions of Indian subregion (Table 1). Only 6 species have been left with no states and union territories records.

\* Key words : Calliphoridae, India, checklist, distributional record

## CHECKLIST

Subfamily AMENIINAE

Tribe CATAPICEPHALINI

Genus *Catapicephala* Macquart, 1850*Type-species* : *Catapicephala splendens* Macquart, 18501. *Catapicephala pattoni* Senior-White, Aubertin and Smart, 19401940. *Catapicephala pattoni*, Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 105.*Type-locality* : India (Kalighat).*Distribution* : Uttaranchal (Mussorie), West Bengal (Kalighat, Kolkata, Ranaghat Hijuli Forest).2. *Catapicephala splendens* Macquart, 18511851. *Catapicephala splendens* Macquart, *Mém. Soc. Sci. Agric. Lille*, 1850 : 210.*Type locality* : Java (Indonesia).*Distribution* : Arunachal Pradesh (Deban).

Tribe AMENIINI

Genus *Silbomyia* Macquart, 1843*Type-species*: *Musca fusipennis* Fabricius, by designation of Engel, 1825.3. *Silbomyia asiatica* Crosskey, 19651965. *Silbomyia asiatica* Crosskey, *Bull. Br. Mus. nat. Hist. (Ent.)*, 16 : 80.*Type-locality* : Thailand (Biserat).*Distribution* : West Bengal (Mungpoo).4. *Silbomyia parvula* Baranov, 19381938. *Silbomyia parvula* Baranov, *Bull. ent. Res.*, 29(4) : 414.*Type-locality* : Tamil Nadu (Coimbatore).*Distribution* : Tamil Nadu (Coimbatore).

Subfamily HELICOBOSCINAE

Genus *Gulmargia* Rognes, 1992*Type-species* : *Gulmargia angustisquama* Rognes, 1992

5. *Gulmargia angustisquama* Rognes, 1992

1992. *Gulmargia angustisquama* Rognes, *Ent. scand.*, 23(4) : 395.

*Type-locality* : Uttaranchal (Mussorie).

*Distribution* : Jambu & Kashmir (Gulmarg), Uttaranchal (Mussorie).

Subfamily CALLIPHORINAE

Tribe Calliphorini

Genus *Aldrichina* Townsend, 1934

*Type-species* : *Calliphora grahami* Aldrich, 1930

6. *Aldrichina grahami* (Aldrich), 1930

1930. *Calliphora grahami* Aldrich, *Proc. U. S. natn. Mus.*, 78(1) : 1.

*Type-locality* : China (Szechuen, Suifu).

*Distribution* : West Bengal (Darjeeling, Jalapahar).

Genus *Calliphora* Robineau-Desvoidy, 1830

*Type-species* : *Musca vomitoria* Linnaeus, 1758

7. *Calliphora pattoni* Aubertin, 1931

1931. *Calliphora pattoni* Aubertin, *Ann. Mag. nat. Hist.*, (10)8 : 615.

*Type-locality* : India (Darjeeling).

*Distribution* : Arunachal Pradesh (Tezu), Jambu & Kashmir (Gulmarg), Meghalaya (Khasi Hills, Mishmi Hills), Sikkim (Gangtok, Mangan), Uttar Pradesh (Agra), West Bengal (Darjeeling, Kalighat, Kurseong, Lebong, Rajabhatkhawa, Senchal Lake area).

8. *Calliphora vicina* Robineau-Desvoidy, 1830

1830. *Calliphora vicina* Robineau-Desvoidy, *Mém. prés. div. Sav. Acad. Sci. Inst. Fr.*, 2(2) : 435.

*Type-locality* : USA (Philadelphia).

1826. *Calliphora erythrocephala* Meigen, *Syst. Besch. Europ. zweifl. Insekt.*, 5 : 62.

1852. *Musca aucta* Walker, *Insecta saundersiana*, 1 : 334.

*Distribution* : Himachal Pradesh (Shimla), Jambu & Kashmir (Jambu), Meghalaya (Khasi Hills), Sikkim (Gangtok, Mangan, Phensang, Tadong), Tamil Nadu (Chennai), Uttar Pradesh (Agra), Uttaranchal (Dehra Dun, Mussorie, Nainital), West Bengal (Alipurduar, Birpara,

Darjeeling, Ghoramara Island, Kalimpong, Kolkata, Kurseong, Rajabhatkhawa).

**9. *Calliphora vomitoria* (Linnaeus), 1758**

1758. *Musca vomitoria* Linnaeus, *Syst. Nat. Ed.*, 1 : 595.

*Type-locality* : Sweden.

1834. *Calliphora erythrocephala* Macquart (nec Meigen), *Mém. Soc. Sci. Agric. Lille*, 1833 : 160.

1835. *Musca affinis* Macquart, *Hist. nat. Dipt.*, 2 : 263.

1891. *Calliphora capensis* Brauer & Bergenstamm, *Denkschr. Akad. Wiss. Wien*, 58 : 442.

*Distribution* : Himachal Pradesh (Shimla), Meghalaya (Jaintia), Sikkim (Dentam, Gangtok, Gazeing), West Bengal (Darjeeling, Senchal Lake area, Sukna Forest).

**Tribe Phumosiini**

**Genus *Phumosia* Robineau-Desvoidy, 1830**

*Type-species* : *Phumosia abdominalis* Robineau-Desvoidy, 1830

**10. *Phumosia indica* (Surcouf), 1914**

1914. *Caiusa indica* Surcouf, *Nouv. Archs. Mus. natn. Hist. nat. Paris*, (5)6 : 53.

*Type-locality* : India (Trichinopoly).

*Distribution* : Orissa, Jeypore Hills, Tamil Nadu (Kattapuli, Komarada, Trichinopoly).

**11 *Phumosia testacea* (Senior-White), 1924**

1924. *Caiusa testacea* Senior-White, *Spolia zeylan.*, 12 : 310.

*Type-locality* : Sri Lanka (Emelina Estate, Maskeliya).

1927. *Caiusa dubiosa* Villeneuve, *Rev. zool. afr.*, 15 : 392.

*Distribution* : Tamil Nadu (Coimbatore).

**Subfamily BENGALIINAE**

**Tribe Bengaliini**

**Genus *Bengalia* Robineau-Desvoidy, 1830**

*Type-species* : *Bengalia labiata* Robineau-Desvoidy, 1830

**12. *Bengalia bezzii* Senior-White, 1924**

1924. *Bengalia bezzii* Senior-White, *Spolia zeylan.*, 12 : 306.

*Type-locality* : Sri Lanka (Suduganga).

1927. *Bengalia inermis* Malloch, *Ann. Mag. nat. Hist.*, (9)20 : 413.

*Distribution* : Orissa (Asanput), Tamil Nadu (Guindy).

13. *Bengalia chromatella* Séguy, 1946

1946. *Bengalia chromatella* Séguy, *Encycl. ent. (BII) Dipt.*, 10 : 84.

*Type-locality* : Tamil Nadu (Guindy).

*Distribution* : Tamil Nadu (Guindy).

14. *Bengalia escheri* Bezzi, 1913

1913. *Bengalia escheri* Bezzi, *Ent. Mitt.*, 2 : 76.

*Type-locality* : Formosa (Taiwan).

*Distribution* : Meghalaya (Garo Hills, Khasi Hills), Uttar Pradesh (Allahabad).

15. *Bengalia hastativentris* Senior-White, 1924

1924. *Bengalia hastativentris* Senior-White, *Spolia zeylan.*, 12 : 305.

*Type-locality* : Sri Lanka (Matale).

*Distribution* : Delhi (Zoo Garden).

16. *Bengalia jejuna* (Fabricius), 1794

1794. *Musca jejuna* Fabricius, *Ent. Syst.*, 4 : 312.

*Type-locality* : Keil.

1819. *Musca torosa* Wiedemann, *Zool. Mag., Keil*, 1(3) : 21.

1940. *Bengalia lateralis* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 91, not Macquart.

*Distribution* : Bihar (Banhar), Karnataka (Kaimara), Kerala (Cochin, Tribandrum, Walayar Forests), Pondicherry (Aurovil), Sikkim (Phensang), Tamil Nadu (Chennai, Coimbatore, Tranquebar), Uttaranchal (Mussorie, Naini Tal), Uttar Pradesh (Agra), West Bengal (Alipurduar, Buxa, Jainti, Kalchini, Kolkata, Rajabhatkhawa, Ranaghat).

17. *Bengalia labiata* Robineau-Desvoidy, 1830

1830. *Bengalia labiata* Robineau-Desvoidy, *Mém. prés. div. Sav. Acad. Sci. Inst. Fr.*, 2 : 426.

*Type-locality* : India (Bengal, locality doubtful).

1830. *Bengalia melanocera* Robineau-Desvoidy, *Mém. prés. div. Sav. Acad. Sci. Inst. Fr.*, **2** : 426.

*Distribution* : Sikkim (Dentam), West Bengal (Ranaghat Hijuli Forest).

**18. *Bengalia martinleakei* Senior-White, 1931**

1930. *Bengalia martinleakei* Senior-White, *Rec. Indian Mus.*, **32** : 69.

*Type-locality* : Orissa (Jeypore Hills, Rayaghada).

*Distribution* : Orissa (Jeypore Hills).

**19. *Bengalia pallidicoxa* Séguy, 1946**

1946. *Bengalia pallidicoxa* Séguy, *Encycl. ent. (BII) Dipt.*, **10** : 84.

*Type-locality* : India (Trichinopoly).

*Distribution* : Tamil Nadu (Trichinopoly).

**20. *Bengalia surcoufi* Senior-White, 1924**

1924. *Bengalia surcoufi* Senior-White, *Spolia zeylan.*, **12** : 306.

*Type-locality* : India (Mungpoo).

*Distribution* : Assam (Silchar), Karnataka (Bangalore, Kaimara), Kerala (Cochin), Meghalaya (Khasi Hills), Pondicherry (Aurovil), Sikkim (Chungthang), Tamil Nadu (Chennai, Coimbatore, Tranquebar), Uttaranchal (Mussorie, Nainital), Uttar Pradesh (Allahabad), West Bengal (Mungpoo, Nagrakata, Senchal Lake area, Sukna Forest).

**21. *Bengalia varicolor* (Fabricius), 1805**

1805. *Musca varicolor* Fabricius, *Syst. Antliat.*, xiv : 296.

1910. *Bengalia latro* de Meijere, *Tijdschr. ent.*, **53** : 336.

*Type-locality* : Tamil Nadu (Tranquebar).

*Distribution* : Tamil Nadu (Tranquebar).

**22. *Bengalia xanthopyga* Senior-White, 1924**

1924. *Bengalia xanthopyga* Senior-White, *Spolia zeylan.*, **13** : 107.

*Type-locality* : Singapore.

*Distribution* : Punjab (Muktesar).

Subfamily MELANOMYINAE

Genus *Melinda* Robineau-Desvoidy, 1830

*Type-species* : *Musca cognata* Meigen, by designation of Coquillett, 1910

23. *Melinda abdominalis* (Malloch), 1931

1931. *Paradichosia abdominalis* Malloch, *Ann. Mag. nat. Hist.*, (10)7 : 198.

*Type-locality*: Malaysia.

*Distribution* : Uttaranchal (Mussorie), Uttar Pradesh (Allahabad).

24. *Melinda bengalensis* Nandi, 1994

1994. *Melinda bengalensis* Nandi, *J. Beng. nat. Hist. Soc.*, 13(2) : 38.

*Type-locality* : West Bengal (Shibpur Botanical Garden).

*Distribution* : West Bengal (Shibpur Botanical Garden).

25. *Melinda pusilla indica* Kurahashi, 1970

1970. *Melinda pusilla indica* Kurahashi, *Pacif. Insects.*, 12(3) : 534.

*Type-locality* : Uttaranchal (Mussorie).

*Distribution* : Uttaranchal (Mussorie).

26. *Melinda pusilla* (Villeneuve), 1927

1927. *Gymnadichosia pusilla* Villeneuve. *Rev. zool. afr.*, 15 : 388.

*Type-locality* : Formosa (Taiwan).

*Distribution* : Uttaranchal (Mussorie).

27. *Melinda scutellata* (Senior-White), 1924

1924. *Paradichosia scutellata* Senior-White, *Spolia zeylan.*, 12 : 312.

*Type-locality* : West Bengal (Mungpoo).

*Distribution* : Meghalaya (Shillong), Sikkim (Gangtok, Gezing), West Bengal (Birpara, Mungpoo).

Subfamily LUCILIINAE

Tribe Luciliini

Genus *Hemipyrellia* Townsend, 1917

*Type-species* : *Lucilia fernendica* Macquart, 1855

**28. *Hemipyrellia ligurriens* (Wiedemann), 1830**

1830. *Musca ligurriens* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 655.

*Type-locality* : China and Java (Indonesia).

1922. *Lucilia ballardi* Patton, *Indian J. Med. Res.* 9 : 573.

1926. *Lucilia albipilosa* Senior-White, *Rec. Indian Mus.*, 28 : 130.

1927. *Hemipyrellia orientalis* Townsend, *Supplta ent.*, 16 : 56.

*Distribution* : Assam (Gauhati), Bihar (Purnea), Sikkim (Gangtok), Tamil Nadu (Chennai, Kallar, Foot of Nilgiri Hills), West Bengal (Barasat, Bhagabatpur, Bijanbari, Burdwan, Budge Budge, Buxa Duars, Ganga Sagar, Kalimpong, Kalyani, Kolkata, Madarihat, Rajarhat, Ranaghat, Shibpur, Siliguri, Sukna Forest).

**29. *Hemipyrellia pulchra* (Wiedemann), 1830**

1830. *Musca pulchra* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 406.

*Type-locality* : Unknown.

1849. *Musca phellia* Walker, *List. Dipt. Br. Mus.*, 4 : 884.

*Distribution* Bihar (Gaya, Purnea), Orissa (Baripada, Kapilas Deer Park), Pondicherry (Aurovil), Punjab (Ludhiana), Tamil Nadu (Coimbatore), Uttar Pradesh (Agra), West Bengal (Canning, Kamdevpur, Jaigoan, Shibpur, Subhasgram).

Genus *Hypopygiopsis* Townsend, 1916

*Type-species* : *Hypopygiopsis splendens* Townsend, 1916

**\*30. *Hypopygiopsis infumata* (Bigot), 1877**

1877. *Semomyia infumata* Bigot, *Annls soc. ent. Fr.*, 5(7) : 42.

*Type-locality* : Burma (Myanmar).

*Distribution* : India.

**\*31. *Hypopygiopsis tumrasvini* Kurahashi, 1977**

1977. *Hypopygiopsis tumrasvini* Kurahashi, 1977, *Kontyû*, 45 : 556.

*Type-locality* : Sai Yok, Kanchana Buri, Thailand.

*Distribution* : India.

Genus *Lucilia* Robineau-Desvoidy, 1830

*Type-species* : *Musca caesar* Linnaeus, 1758.

32. *Lucilia ampullacea* Villeneuve, 1922

1922. *Lucilia ampullacea* Villeneuve, *Bull. Mus. natn. Hist. nat., Paris*, 28 : 515.

*Type-locality* : Rambouillet, France.

1925. *Lucilia krameri* Séguy, *Encycl. ent. (BII) Dipt.*, 2 : 94.

*Distribution* : Kerala (Malabar Coast), West Bengal (Darjeeling, Siliguri, Sukna Forest).

33. *Lucilia bazini* Séguy, 1934

1934. *Lucilia bazini* Séguy, *Encycl. ent. (BII) Dipt.*, 7 : 15.

*Type-locality* : Zi-ka-wei , Kou-ling (China).

*Distribution* : West Bengal (Shibpur Botanical Garden).

34. *Lucilia cuprina* (Wiedemann), 1830

1830. *Musca cuprina* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 654.

*Type-locality* : China.

1846. *Lucilia argyricephala* Macquart *Mém. Soc. Sci. Agric. Lille*, 1844 : 326.

1924. *Strongyloneura nigricornis* Senior-White, *Spolia zeylan.*, 13 : 115.

*Distribution* : West Bengal (Alipurduar, Jaigoan, Jambu Island, Kalyani, Rajabhatkhawa, Ranaghat, Sagar Island, Sealdah) and almost well distributed in India.

35. *Lucilia fumicosta* Malloch, 1926

1926. *Lucilia (Lucieliella) fumicosta* Malloch, *Ann. Mag. nat. Hist.*, (9)17 : 507.

*Type-locality* : Philippine Islands, Los Banos.

*Distribution* : Arunachal Pradesh (Dunn Bridge, Tipi).

36. *Lucilia illustris* (Meigen), 1826

1826. *Musca illustris* Meigen, *Syst. Besch. Europ. zweifl. Insekt.*, 5 : 54.

*Type-locality* : Germany.

*Distribution* Sikkim (Jorethang), West Bengal (Darjeeling, Jalapahar, Jalpaiguri, Kolkata, Senchal Lake area, Siliguri).

### 37. *Lucilia papuensis* Macquart, 1843

1843. *Lucilia papuensis* Macquart, *Mém. Soc. Sci. Agric. Lille.*, 2(3) 1842 : 298.

*Type-locality* : Papua (Offak).

1849. *Musca metilia* Walker, *List. Dipt. Br. Mus.*, 4 : 898.

1852. *Musca inducta* Walker, *Insecta saundersiana*, 1 : 335.

*Distribution* : Arunachal Pradesh (Deban, Hornbill), Jambu & Kashmir (Jambu), Kerala (Malabar Coast), Meghalaya (Khasi Hills), Tamil Nadu (Nilgiri Hills), West Bengal (Kakdwip, Rajabhatkhawa, Ranaghat, Sagar Island, Shibpur Botanical Garden).

### 38. *Lucilia porphyrina* (Walker), 1856

1856. *Musca porphyrina* Walker, *J. Proc. Linn. Soc. Lond. zool.*, 1 : 24.

*Type-locality* Mount Ophir, Malaysia.

1877. *Somomyia obesa* Bigot, *Annl. Soc. ent. Fr.*, (5)7 : 43.

1922. *Lucilia craggi* Patton, *Indian. J. Med. Res.*, 9 : 553.

1927. *Lucilia flavicornis* Malloch, *Proc. Linn. Soc. N.S.W.*, 52 : 322.

*Distribution* : Arunachal Pradesh (Pasighat), Assam (Mishmi Hills, Dalai V, Sadiya), Delhi (Zoo Garden), Himachal Pradesh (Shimla), Jambu & Kashmir (Gulmarg, Kasauli), Sikkim (Jorethang), West Bengal (Burdwan, Coochbehar, Ganga Sagar, Kakdwip, Rajabhatkhawa, Ranaghat, Sagar Island, Shibpur, Singtom).

### 39. *Lucilia sericata* (Meigen), 1826

1826. *Musca sericata* Meigen, *Syst. Besch. Europ. zweifl. Insekt.*, 5 : 53.

*Type-locality* : German.

1843. *Lucilia flavipennis* Macquart, *Mém. Soc. Sci. Agric. Lille*, 2(3) 1842 : 296.

*Distribution* West Bengal (Bamankhali, Darjeeling, Ghoramara Island, Kalimpong, Malda, Siliguri, Sukna Forest, Takvar) and almost throughout India.

Subfamily POLLENIINAE

Tribe Polleniini

Genus *Pollenia* Robineau-Desvoidy, 1830

*Type-species* : *Musca rudis* Fabricius, 1794

40. *Pollenia asiatica* (Senior-White), 1923

1923. *Paratricyclea asiatica* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, 8(4) : 38.

*Type-locality* : Maharashtra (Matheran).

*Distribution* : Maharashtra (Matheran).

41. *Pollenia rudis* (Fabricius), 1794

1794. *Musca rudis* Fabricius, *Ent. Syst.*, 4 : 314.

*Type-locality* : German.

*Distribution* : Jambu & Kashmir (Jambu).

42. *Pollenia townsendi* (Senior-White, Aubertin and Smart), 1940

1940. *Onesia townsendi* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 119.

*Type-locality* : Himachal Pradesh (Shimla).

*Distribution* : Himachal Pradesh (Shimla), Punjab (Lyallpur).

Tribe **Melanodexiini**

Genus *Morinia* Robineau-Desvoidy, 1830

*Type-species* : *Morinia parva* Robineau-Desvoidy, 1830

43. *Morinia argenticincta* (Senior-White), 1923

1923. *Idiopsis argenticincta* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, 8(4) : 48.

*Type-locality* : Himachal Pradesh (Shimla).

*Distribution* : Bihar (Pusa), Himachal Pradesh (Muktesar, Shimla).

Genus *Polleniopsis* Townsend, 1917

*Type-species* : *Polleniopsis pilosa* Townsend, 1917

44. *Polleniopsis kashmirensis* Kurahashi and Tsunemaru Okadome, 1976

1976. *Polleniopsis kashmirensis*, Kurahashi and Tsunemaru Okadome, *Bull. Jap. ent. Acad.*, 9(2) : 42.

*Type-locality* : Kashmir (Mt. Haramukh).

*Distribution* : Jambu & Kashmir (Mt. Haramukh, Aru).

45. *Polleniopsis pilosa* Townsend, 1917

1917. *Polleniopsis pilosa* Townsend, *Rec. Indian Mus.*, 13(4) : 202.

*Type-locality* : West Bengal (Darjeeling).

*Distribution* : Assam (Gauhati), Bihar (Purnea), Meghalaya (East Khasi Hills, Shillong), West Bengal (Darjeeling, Kalimpong, Sukna Forest).

Genus *Tainanina* Villeneuve, 1926

*Type-species* *Tainanina grisella* Villeneuve=*Pollenia pilisquama*, Senior-White, 1925

46. *Tainanina pilisquama* (Senior-White), 1925

1925. *Pollenia pilisquama* Senior-White, *Rec. Indian Mus.*, 27 : 84.

*Type-locality* : Sri Lanka.

1926. *Tainanina grisella* Villeneuve, *Bull. Anns Soc. r. ent. Belg.*, 66 : 272.

*Distribution* : Assam (Dibrugarh).

\*47. *Tainanina sarcophagoides* (Malloch) 1931

1931. *Calliphora sarcophagoides* Malloch, *Ann. Mag. nat. Hist.*, (10)7 : 192.

1940. *Tainanina sarcophagoides* : Senior-White, Aubertin and Smart, *Fauna Brit. India, Dipt.*, 6 : 110.

*Distribution* : India.

Genus *Onesia* Robineau-Desvoidy, 1830

*Type-species* : *Musca floralis* Robineau-Desvoidy, 1830

48. *Onesia khasiensis* (Senior-White), 1922

1922. *Nitellia khasiensis* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, 7 : 49.

*Type-locality* : Meghalaya (Khasi Hills, Shillong).

1940. *Pollenia khasiensis* Senior-White, Aubertin and Smart, *Fauna Brit. India, Dipt.*, 6 : 119.

*Distribution* : Assam (Dibrugarh), Meghalaya (Shillong), Sikkim (Kabi Chulung), West Bengal (Darjeeling, Lebong).

Genus *Dexopollenia* Townsend, 1917

*Type-species* : *Dexopollenia testacea* Townsend, 1917

49. *Dexopollenia testacea* Townsend, 1917

1917. *Dexopollenia testacea* Townsend, *Rec. Indian Mus.*, 13(4) : 201.

*Type-locality* : Assam (Mangaldai).

*Distribution* : Assam (Mungaldai), West Bengal (Bijanbari, Darjeeling, Jaigoan, Sukna Forest).

Subfamily CHRYSOMYINAE

Tribe Chrysomyini

Genus *Chrysomya* Robineau-Desvoidy, 1830

*Type-species* : *Chrysomya regalis* Robineau-Desvoidy, 1830 = *Musca marginalis* Wiedemann, 1930.

50. *Chrysomya albiceps* (Wiedemann), 1819

1819. *Musca albiceps* Wiedemann, *Zool. Mag., Keil*, 1(3) : 38.

*Type-locality* : Cape (of Good Hope).

1855. *Lucilia arcuata* Macquart, *Mém. Soc. Sci. Agric. Lille*, 2(1) 1854 : 132.

*Distribution* : Punjab (Lyallpur).

51. *Chrysomya bezziana* Villeneuve, 1914

1914. *Chrysomya bezziana* Villeneuve, *Rev. zool. afr.*, 3 : 430.

*Type-locality* : Africa.

*Distribution* : Arunachal Pradesh (Dunn Bridge, Tipi), West Bengal (Budge Budge, Burdwan, Kolkata, Shibpur Botanical Garden).

52. *Chrysomya defixa* (Walker), 1856

1856. *Musca defixa* Walker, *J. Proc Linn. Soc. Lond. zool.*, 1 : 24.

*Type-locality* : Malaysia (Singapore).

1922. *Chrysomya combrea* Patton, *Bull. ent. Res.*, 13 : 112.

*Distribution* : Arunachal Pradesh (Hornbill).

53. *Chrysomya indica* Sinha and Nandi, 2004

2004. *Chrysomya indica* Sinha and Nandi, *J. Bombay nat. Hist. Soc.*, (in press).

*Type-locality* : West Bengal (Canning).

*Distribution* : West Bengal (Canning).

**54. *Chrysomya megacephala* (Fabricius), 1794**

1794. *Musca megacephala* Fabricius, *Ent. Syst.*, 4 : 317.

*Type-locality* : Guinea, probably error according to Senior-White, Aubertin and Smart, 1940.

1830. *Chrysomyia duvaucelii* Robineau-Desvoidy, *Mém. prés. div. Sav. Acad. Sci. Ins. Fr.*, 2(2) : 451.

1843. *Musca flaviceps* Macquart, *Mém. Soc. Sci. Agric Lille*, 2(3) 1842 : 145.

1887. *Semomyia dives* Bigot, *Bull. Soc. zool. Fr.*, 12 : 600.

*Distribution* Andaman & Nicobar Islands (Port Blair), Arunachal Pradesh (Hornbill, Tipi), Assam (Charduar, Jairampur, Lekhabali, Sonai Rupai Forest), Jharkhand (Mandar), Lakshadweep (Kavarti), Meghalaya (Cherrapunji), Orissa (Hirakud), Sikkim (Jorethang, Namchi), Tamil Nadu (Coromandel), Tripura (Birchandra Nagar, Kanthal Chhari, Sabrum, Sonamura), West Bengal (Alipurduar, Bally, Barrackpore, Bijanbari, Canning, Diamond Harbour, Digha, Jaigoan, Jayanti, Kalyani, Kolkata, Kurseong, Malda, Panighat, Panitanki Rajabhatkhawa, Ranaghat, Sagar Island, Sealdah, Shibpur, Siliguri, Singla Bazar, Sukna Forest, Titagarh) and almost throughout India.

**55. *Chrysomya nigripes* Aubertin, 1932**

1932. *Chrysomyia nigripes* Aubertin, *Ann. Mag. nat. Hist.*, (10)9 : 26.

*Type-locality* : Sri Lanka (Trincomalee).

*Distribution* : Jharkhand (Old Anqua), Uttaranchal (Mussorie).

**56. *Chrysomya phaonis* Séguy, 1928**

1928. *Chrysomyia phaonis* Séguy, *Bull. Soc. ent. Fr.*, 1928 : 154.

*Type-locality* China (Yunnan Fu).

*Distribution* Uttaranchal (Mussorie), Uttar Pradesh (Varanasi).

**57. *Chrysomya pinguis* (Walker), 1858**

1858. *Lucillia pinguis*, Walker, *Trans. ent. Soc. Lond. zool.*, (n. s.), 4 : 213.

*Type-locality* : Tamil Nadu (Coonoor).

1922. *Chrysomyia nigriceps* Patton, *Indian J. Med. Res.*, 9 : 558.

1922. *Chrysomyia combrea* Patton (nec Walk.), *Bull. ent. Res.*, 13 : 112.

*Distribution* : Arunachal Pradesh (Hornbill, Tezu), Assam (North Lakhimpur), Himachal Pradesh (Shimla), Meghalaya (Dalai, Khasi Hills, Mishmi Hills, Shillong), Tamil Nadu (Chennai, Coonoor, Kallar), West Bengal (Darjeeling).

**58. *Chrysomya rufifacies* (Macquart), 1842**

1842. *Lucilia rufifacies* Macquart, *Mém. Soc. Sci. Agric. Lille.*, 1842 : 303; *Dipt. Exot.*, 2(3) : 1843 : 146.

*Type-locality* : Australia.

1842. *Lucilia orientalis* Macquart, *Mém. Soc. Sci. Agric. Lille*, 1842 : 302; *Dipt. Exot.*, 2(3) : 1843 : 145.

1868. *Lucilia pavonina* Schiner, *Dipt. Reise Novara*, 1868 : 305.

*Distribution* : Andaman & Nicobar Islands (Port Blair), Jharkhand (Karu), Pondicherry (Aurovil), Sikkim (Jorethang), West Bengal (Alipurduar, Barrackpore, Bijanbari, Jaigoan, Kalyani, Kurseong, Madarihat, Panighat, Panitanki, Rajabhatkhawa, Ranaghat, Sagar Island, Sealdah, Shibpur, Singla Bazar, Siliguri and almost all over India.

**59. *Chrysomya villeneuvei* Patton, 1922**

1922. *Chrysomyia villeneuvei* Patton, *Indian J. Med. Res.*, 9 : 567.

*Type-locality* : South India.

*Distribution* : Tamil Nadu (Kallar, Coonoor).

Subfamily RHINIINAE

Tribe Rhiniini

Genus *Chlororhinia* Townsend, 1917

*Type-species* : *Chlororhinia viridis* Townsend, 1917

**60. *Chlororhinia exempta* (Walker), 1856**

1856. *Musca exempta* Walker, *J. Proc. Linn. Soc. Lond. zool.*, 1 : 128.

*Type-locality* : Borneo (Malaysia).

1917. *Chlororhinia viridis* Townsend, *Rec. Indian Mus.*, 13(4) : 191.

*Distribution* : Arunachal Pradesh (Tamen), Assam (Gauhati), Manipur (Churachandpur), Meghalaya (Khasi Hills, Shillong),

**61. *Chlororhinia tamenensis* Joseph and Rao, 1972**

1972. *Chlororhinia tamenensis* Joseph and Rao, *Rec. zool. Surv. India*, 66(1-4) : 125.

*Type-locality* : Arunachal Pradesh (Tamen).

*Distribution* : Arunachal Pradesh (Tamen).

Genus *Idiella* Brauer and Bergenstamm, 1889

*Type-species* : *Idia mandarina* Wiedemann, 1830

62. *Idiella divisa* (Walker), 1861

1861. *Idia divisa* Walker, *J. Proc. Linn. Soc. Lond. zool.*, 5 : 267.

*Type locality* : East India.

1887. *Rhyncomyia palliceus* Bigot, *Bull. Soc. zool. Fr.*, 12 : 594.

*Distribution* : Bihar (Chapra, Chota Nagpur, Jeraikela, Patna, Titalagarh), Madhya Pradesh (Jabalpur), Punjab (Jalandhar), Uttar Pradesh (Allahabad), West Bengal (Kurseong).

63. *Idiella euidielloides* (Senior-White), 1922

1922. *Stomorhina euidielloides* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)* 7 : 166.

*Type-locality* : Meghalaya (Shillong).

*Distribution* Assam (Margarihita), Kerala (Cardamam Estate, Coimbatore), Meghalaya (Shillong), Orissa (Ashanput), Sikkim (Gangtok), West Bengal (Darjeeling).

64. *Idiella mandarina* (Wiedemann), 1830

1830. *Stomorhina mandarina* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 350.

*Type-locality* : China.

1830. *Idia bengalensis* Robineau-Desvoidy, *Mém. prés. div. Sav. Acad. Sci. Ins. Fr.*, 2(2) : 421.

1887. *Stomorhina bivittata* Bigot, *Bull. soc. zool. Fr.*, 12 : 592.

*Distribution* : Assam (Jorehat), Bihar (Giridhi), Delhi (Safdarjung Tomb), Haryana (Karnal), Kerala (Trivandrum), Maharashtra (Mumbai), Madhya Pradesh (Jabalpur), Meghalaya (East Khasi Hills), Orissa (Joypore Hills, Sundargarh), Tripura (Sabrum), Uttaranchal (Shimla), West Bengal (Darjeeling).

65. *Idiella tripartita* (Bigot), 1874

1874. *Idia tripartita* Bigot, *Annl. Soc. ent. Fr.*, (5)4 : 236.

*Type-locality* : Indies Orientales.

1926. *Idiella orientalis* Malloch, *Ann. Mag. nat. Hist.* (9)18 : 506.

*Distribution* : Sikkim (Namchi, Phensang), West Bengal (Darjeeling).

Genus *Idiellopsis* Townsend, 1917

*Type-species* : *Idiellopsis similes* Townsend, 1917

66. *Idiellopsis xanthogaster* (Wiedemann), 1820

1820. *Idia xanthogaster* Wiedemann, *N. Dipt. Gen.*, viii 21.

*Type-locality* : Java (Indonesia).

1917. *Idiellopsis similis* Townsend, *Rec. Indian Mus.*, 13(4) : 190.

*Distribution* : Assam (Mangaldai), Bihar (Chota Nagpur, Katihar, Paresnath Hill), Madhya Pradesh (Bilaspur), Sikkim (Gangtok), Tamil Nadu (Dhikala), Uttaranchal (Nainital).

Genus *Rhinia* Robineau-Desvoidy, 1830

*Type-species* *Rhinia testacea* Robineau-Desvoidy, 1830

67. *Rhinia mallochi* (Senior-White, Aubertin and Smart), 1940

1940. *Stomorhina mallochi* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 204.

*Type-locality* : West Bengal (Kolkata).

*Distribution* : Sikkim (Phensang), Uttar Pradesh (Allahabad), West Bengal (Budge Budge, Kolkata, Kalimpong, Krishnagar, Purulia, Sukna Forest),

68. *Rhinia melanostoma* (Wiedemann), 1830

1830. *Idia melanostoma* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 353.

*Type-locality* : Java (Indonesia).

1917. *Euidiella purpurea* Townsend, *Rec. Indian Mus.*, 13(4) : 193.

*Distribution* Himachal Pradesh (Shimla), Tamil Nadu (Chennai), Uttaranchal (Nainital), West Bengal (Buxar Duars, Sidapur).

69. *Rhinia unicolor* (Townsend), 1917

1917. *Euidiella unicolor* Townsend, *Rec. Indian Mus.*, 13(4) : 193.

*Type-locality* : Borneo (Sarawak, Mujang).

*Distribution* : Assam (Mangaldai), Kerala (Cochin).

Genus *Stomorhina* Rondani, 1861

*Type-species* : *Musca lunata* Fabricius, 1805

70. *Stomorhina discolor* (Fabricius), 1794

1794. *Musca discolor* Fabricius, *Ent. Syst.*, 4 : 320.

*Type-locality* : Ind. (Orientale).

1835. *Idia metallica* Macquart, *Hist. nat. Ins. Dipt.*, 2 : 246.

*Distribution* : Arunachal Pradesh (Kimin, Pinjuli, Tipi), Assam (Dibrugarh), Jharkhand (Basia Mandir), Kerala (Cardamam Estate), Meghalaya (East Khasi Hills), Manipur (Churachandpur), Sikkim (Mangan), Tripura (Birchandra Nagar, Kanthalchuri, Mamghat, Sabrum), Uttar Pradesh (Allahabad), West Bengal (Darjeeling, Sukna Forest).

71. *Stomorhina procula* (Walker), 1849

1849. *Idia procula* Walker, *List. Dipt. Coll. Br. Mus.*, 4 : 808.

*Type-locality* : Africa.

1922. *Euidiella nila* Senior-White, *Mém. Dip. Agric. India, (ent. ser.)* 7 : 168.

*Distribution* : Assam (Dibrugarh), Tamil Nadu (Chennai, Coonoor), West Bengal (Darjeeling).

## Tribe Cosminini

Genus *Thoracites* Brauer and Bergenstamm, 1891

*Type-species* : *Musca abdominalis* Fabricius, 1805

72. *Thoracites abdominalis* (Fabricius), 1805

1805. *Musca abdominalis* Fabricius, *Syst. Antliat.*, xiv : 294.

*Type-locality* : East India.

1856. *Cosmina varia* Walker, *Insecta saundersiana*, 1 : 350.

*Distribution* : Orissa (Puri).

73. *Thoracites nudus* (Ghezta and Kumar), 1991

1991. *Strongyloneura nudus*, Ghezta and Kumar, *Reichenbachia Mus. Tierk. Dresden*, 28(34) : 181.

*Type-locality* : India (Chandigarh).

*Distribution* : Chandigarh (Botanical Garden).

Genus *Cosmina* Robineau-Desvoidy, 1830

*Type-species* : *Cosmina fuscipennis* Robineau-Desvoidy, 1830.

**74. *Cosmina bicolor* (Walker), 1857**

1856. *Idia bicolor* Walker, *J. Proc. Linn. Soc. Lond. Zool.*, **1** : 23.

*Type-locality* : Malacca (Malaysia).

1946. *Cosmina coomani* Séguéy, *Encycl. ent. (BII) Dipt.*, **10** : 88.

*Distribution* : Arunachal Pradesh (Deojoo, Kimin), Assam (Jorehat), Bihar (Purnea), Karnataka (Bangalore), Kerala (Coorg, Nilgiris), Meghalaya (Shillong), Tamil Nadu (Coimbatore), West Bengal (Kalimpong).

**75. *Cosmina biplumosa* (Senior-White), 1924**

1924. *Stomorhina biplumosa* Senior-White, *Spolia. zeylan.*, **13** : 110.

*Type-locality* : Chengmai, N. Siam (Thailand).

1926. *Cosmina nigrocoerulea* Malloch, *Ann. Mag. nat. Hist.*, (9)**18** : 519.

*Distribution* : Arunachal Pradesh (Dejoo).

**76. *Cosmina lambipennis* (Macquart), 1848**

1848. *Idia lambipennis* Macquart, *Mém. Soc. Sci. Agric. Lille.*, **1847(2)** : 214.

*Type-locality* : Java (Indonesia).

1929. *Cosmina confusa* Malloch, *Ann. Mag. nat. Hist.*, (10)**4** : 339.

*Distribution* : Assam (Jorehat).

**77. *Cosmina prasina* (Brauer and Bergenstamm), 1889**

1889. *Idiopsis prasina* Brauer and Bergenstamm, *Denkschr. Akad. Wiss. Wien*, **56** : 171.

*Type-locality* : Egypt and Sicily.

1923. *Cosmina indica* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, **8(4)** : 42.

*Distribution* : Uttar Pradesh (Allahabad).

**78. *Cosmina simplex* (Walker), 1858**

1858. *Idia simplex* Walker, *Trans. ent. Soc. Lond. zool.*, ( *n. ser.*), **4** : 212.

*Type-locality* : India.

1917. *Euidiella unicolor* Townsend (nec Macq.), *Rec. Indian Mus.*, **13**(4) : 193.

*Distribution* : Arunachal Pradesh (Kimin, Pinjli, Tipi), Assam (Mangaldai), Kerala (Cochin).

**Tribe Isomyiini**

**Genus *Strongyloneura* Bigot, 1886**

*Type-species* : *Strongyloneura prasina* Bigot, 1886

**79. *Strongyloneura prolata* (Walker), 1860**

1860. *Idia prolata* Walker, *J. Proc. Linn. Soc., Lond. zool.*, **4** : 133.

*Type-locality* : Celebes.

1917. *Chloroidia flavifrons* Townsend, *Rec. Indian Mus.*, **13**(4) : 196.

*Distribution* : Kerala (Chalakydy)

**Genus *Isomyia* Walker, 1860**

*Type-species* : *Musca delectans* Walker, 1860.

**80. *Isomyia aurifacies* James, 1970**

1970. *Isomyia aurifacies* James, *Smith. Contr. zool.*, **67** : 9.

*Type-locality* : Assam (Tinsukia).

*Distribution* : Assam (Tinsukia).

**81. *Isomyia coerulana* (Townsend), 1917**

1917. *Strongyloneura coerulana* Townsend. *Rec. Indian Mus.*, **13**(4) : 198.

*Type-locality* : Andaman Islands (Port Blair).

*Distribution* : Andaman & Nicobar Islands (Port Blair).

**82. *Isomyia delectans* Walker, 1860**

1860. *Isomyia delectans* Walker, *J. Proc. Linn. Soc. Lond. zool.*, **4** : 134.

*Type-locality* : Makasar, Clebes (Indonesia).

*Distribution* : Arunachal Pradesh (Dejoo), Himachal Pradesh (Shimla), Uttaranchal (Mussorie).

**83. *Isomyia electa* (Villeneuve), 1927**

1927. *Thelychaeta electa* Villeneuve, *Rev. zool. afr.*, **15** : 217.

*Type-locality* : Fosempo, Formosa (Taiwan).

1949. *Thelychaetopsis pellita* Séguy, *Revta bras. Biol.*, **9** : 140.

*Distribution* : Tamil Nadu (Trichinopoly).

**84. *Isomyia flavicornis* (Bigot), 1887**

1887. *Phumosa flavicornis* Bigot, *Bull. Soc. zool. Fr.*, **12** : 611.

*Type-locality* : Java.

1940. *Strongyloneura pseudonebulosa* Senior-White, Aubertin and Smart, 1940. *Fauna Br. India, Dipt.*, **6** : 163.

*Distribution* : Assam (Gauhati, Haflong, Jorhat), Bihar (Chota Nagpur, Goikera, Patna), Maharashtra (Mumbai), Meghalaya (Tura), West Bengal (Darjeeling, Kolkata).

**85. *Isomyia fuscocincta* (Bigot), 1877**

1877. *Somomyia fuscocincta* Bigot, *Annl. Soc. ent. Fr.*, (5)7 : 40.

*Type-locality* : India (Assam).

*Distribution* : Assam (Gauhati).

**86. *Isomyia gomenzmenori* (Peris), 1951**

1951. *Thelychaeta gomenzmenori* Peris. *Eos. Madr.*, **27** : 246.

*Type-locality* : Uttar Pradesh (Mussorie).

*Distribution* : Uttaranchal (Mussorie), Uttar Pradesh (Agra).

**87. *Isomyia malayensis* (Townsend), 1927**

1927. *Strongyloneuroopsis malayensis* Townsend, *Philip. J. Sci.*, **34** : 376.

*Type-locality* : Malay (Singapore).

*Distribution* : Sikkim (Chungthang, Gezing), West Bengal (Darjeeling, Lebong, Sukna Forest).

**88. *Isomyia nebulosa* (Townsend), 1917**

1917. *Strongyloneura nebulosa* Townsend, *Rec. Indian Mus.*, **13**(4) : 197.

*Type-locality* : India (Assam).

1946. *Strongyloneura pavonica* Séguy, *Encycl. ent. (BII) Dipt.*, 10 : 86.

*Distribution* : Assam (Gauhati, Sadiya), West Bengal (Darjeeling).

89. *Isomyia nigrofasciata* (Peris), 1951

1951. *Thelychaeta nigrofasciata* Peris, *Eos. Madr.*, 27 : 247.

*Type-locality* : Assam (Sadiya).

*Distribution* : Assam (Sadiya).

90. *Isomyia oestracea* (Séguy), 1934

1934. *Pachycosmina oestracea* Séguy, *Encycl. ent. (BII) Dipt.*, 7 : 68.

*Type-locality* : China (Kou-Ling).

*Distribution* : Meghalaya (East Khasi Hills).

91. *Isomyia perisi* James, 1970

1970. *Isomyia perisi* James, *Smith. Contr. zool.*, 67 : 10.

*Type-locality* Tamil Nadu (Anamalai Hills, Kadamparai).

*Distribution* Tamil Nadu (Annamalai Hills, Cinchona, Kadamparai).

92. *Isomyia phryxea* (Séguy), 1949

1949. *Apollenia phryxea* Séguy, *Revta bras. Biol.*, 9 : 123.

*Type-locality* West Bengal (Kurseong).

*Distribution* : West Bengal (Kurseong).

93. *Isomyia pseudocoerulana* (Senior-White, Aubertin and Smart), 1940

1940. *Strongyloneura pseudocoerulana* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 165; new name for *coerulana* Senior-White, 1923.

*Type-locality* : Sri Lanka.

*Distribution* Bihar (Chota Nagpur, Goilkera), Meghalaya (Khasi Hills, Shillong), West Bengal (Kolkata).

94. *Isomyia pseudonebulosa* (Senior-White, Aubertin and Smart), 1940

1940. *Strongyloneura pseudonebulosa* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 163.

*Type-locality* : Sri Lanka (Trincomali).

*Distribution* : Assam (Gauhati, Haflong), Bihar (Chota Nagpur, Goikera), Maharashtra (Mumbai), West Bengal (Darjeeling, Kolkata).

**95. *Isomyia pseudonepalana* (Senior-White, Aubertin and Smart), 1940**

1940. *Strongyloneura pseudonepalana* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 162.

*Type-locality* : Sri Lanka (Kekirawa).

*Distribution* : Assam (Dibrugarh), Meghalaya (Khasi Hills, Shillong).

**96. *Isomyia pseudoviridana* (Peris), 1952**

1952. *Thelychaeta pseudoviridana* Peris, *Ann. Estac. exp. Aula Dei*, 3 : 183. new name for *Thelychaeta tibialis* Senior-White, Aubertin and Smart, 6 : 167.

*Type-locality* : Meghalaya (Shillong).

*Distribution* : Himachal Pradesh (Kumaon, Muktesar), Meghalaya (Khasi Hills, Shillong), Orissa (Jeypore Hills, Taptapani), Tamil Nadu (Artham), Uttar Pradesh (Varanasi).

**\*97. *Isomyia sivah* (Bigot), 1878**

1878. *Pyrellia sivah* Bigot, *Anns Soc. ent. Fr.*, (5)8 : 33.

*Type-locality* : India.

*Distribution* : India.

**98. *Isomyia versicolor* (Bigot), 1877**

1877. *Somomyia versicolor* Bigot, *Anns Soc. ent. Fr.*, (5)7 : 42.

*Type-locality* : Sri Lanka (Suduganga).

*Distribution* : Bihar (Palamu), Meghalaya (Ri-Bhoi, EastKhasi Hills), West Bengal (Kurseong).

**99. *Isomyia viridana* (Townsend), 1917**

1917. *Strongyloneura viridana* Townsend, *Rec. Indian Mus.*, 13(4) : 197.

*Type-locality* : West Bengal (Kolkata), Assam (Sadiya).

*Distribution* : Assam (Sadiya), West Bengal (Kolkata).

**100. *Isomyia viridaurea* (Wiedemann), 1819**

1819. *Musca viridaurea* Wiedemann, *Zool. Mag., Keil*, 1(3) : 22.

*Type-locality* : East India.

1877. *Somomyia rubiginosa* Bigot, *Annl. Soc. ent. Fr.*, (5)7 : 44.

*Distribution* : Assam (Sadiya).

101. *Isomyia zeylanica* (Senior-White, Aubertin and Smart), 1940

1940. *Strongyloneura zeylanica* Senior-White, Aubertin and Smart, *Fauna Br. India, Dipt.*, 6 : 164.

*Type-locality* : Sri Lanka, Malay Cave, Trincomalee.

*Distribution* : Meghalaya (Khasi Hills).

#### Tribe **Rhyncomyiini**

Genus *Borbororhinia* Townsend, 1917

*Type-species* : *Borbororhinia pubescens* Townsend, 1917

102. *Borbororhinia bivittata* (Walker), 1856

1856. *Idia bivittata* Walker, *J. Proc. Linn. Soc. Lond. zool.*, 1 : 128.

*Type-locality* : Borneo (Malaysia).

1917. *Borbororhinia pubescens* Townsend, *Rec. Indian Mus.*, 13(4) : 183.

*Distribution* : Assam (Assam Hills), Kerala (Cochin).

Genus *Metallea* van der Wulp, 1880

*Type-species* : *Metallea notata* van der Wulp, 1880

103. *Metallea flavibasis* Senior-White, 1922

1922. *Metallea flavibasis* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, 7 : 168.

*Type-locality* : Sri Lanka (Suduganga, Matale).

1923. *Metallea nigrofemorata* Senior-White, *Mém. Dept. Agric. India, (ent. ser.)*, 8(4) : 46.

2001. *Rhyncomyia flavibasis*: Kurahashi, *Jap. J. syst. Ent.*, 7(2) : 247.

*Distribution* : Uttar Pradesh (Allahabad).

104. *Metallea notata* van der Wulp, 1880

1880. *Metallea notata* van der Wulp, *Tijdschr. Ent.*, 23 : 175.

*Type-locality* : Java (Indonesia).

*Distribution* : Andaman and Nicobar Islands (Port Blair), Assam (Shillong), Bihar (Daltongaunj), Meghalaya (East Khasi Hills), Orissa (Lahamani, Puri, Sundergarh), Sikkim (Gangtok), Tamil Nadu (Coimbatore), Uttar Pradesh (Allahabad), West Bengal (Kurseong).

105. *Metallea setosa* (Townsend), 1917

1917. *Metalliopsis setosa* Townsend, *Rec. Indian Mus.*, 13(4) : 198.

*Type-locality* : Eastern Himalaya (Kurseong).

*Distribution* : West Bengal (Kurseong, Siliguri).

Genus *Rhyncomya* Robineau-Desvoidy, 1830

*Type-species* : *Musca felina* Robineau-Desvoidy, 1830

106. *Rhyncomya bicolor* Macquart, 1843

1843. *Rhyncomyia bicolor*, Macquart, *Mém. Soc. Sci. Agric. Lille*, 2(3) : 282.

*Type-locality* : Pondichery.

(James (1977) reported it unplaced species of Rhiniinae but Macquart (1843) when described placed it under the genus *Rhyncomyia*).

*Distribution* : Pondicherry (Aurovil), Tamil Nadu (Chennai).

107. *Rhyncomya catalypsa* Séguy, 1946

1946. *Rhyncomyia catalypsa* Séguy, *Encycl. ent. (BII) Dipt.*, 10 : 89.

*Type-locality* : Tamil Nadu (Coromandel, Genji).

*Distribution* : Tamil Nadu (Coromandel, Genji).

108. *Rhyncomya divisa* (Walker), 1853

1853. *Musca divisa* Walker, *Insecta saundersiana*, 1 : 333.

*Type-locality* : East India.

1923. *Metallea nigrofemorata* Senior-White, *Mém. Dept. Agric. India (ent. ser.)*, 8 : 46.

*Distribution* : Bihar (Chapra, Chota Nagpur, Jeraikela, Patna, Titlagarh), Punjab (Jalandhar), Madhya Pradesh (Jabalpur), Uttar Pradesh (Allahabad), West Bengal (Kurseong).

\*109. *Rhyncomya flavipes* (Robineau-Desvoidy), 1830

1830. *Idia flevipes* Robineau-Desvoidy. *Mém. pres. div. Sav. Acad. Sci. Inst. Fr.*, 2(2) : 420.

*Type-locality* : India.

*Distribution* India

110. *Rhyncomya pollinosa* (Townsend), 1917

1917. *Trichometallea pollinosa* Townsend, *Rec. Indian Mus.*, 13(4) : 194.

*Type-locality* : Pounjab (Umballa).

*Distribution* : Punjab (Umballa), Maharashtra (Dhond, Mumbai), Tamil Nadu (Trichinopoly), Uttar Pradesh (Agra, Gonda).

111. *Rhyncomya sarotes* (Séguy), 1928

1928. *Rhynchomyiopsis sarotes* Séguy, *Encycl. ent. (BII) Dipt.*, 4 : 190.

*Type-locality* : Tamil Nadu (Trichinopoly).

*Distribution* : Tamil Nadu (Trichinopoly).

\*112. *Rhyncomya viridaurea* (Wiedemann), 1824

1824. *Tachina viridaurea* Wiedemann, *Analecta ent.*, 43.

*Type-locality* : Ostindien.

*Distribution* : India.

## DISCUSSION

There are differences of opinion regarding the classification of the family Calliphoridae. Senior-White *et. al.* (1940) classified the family Calliphoridae into four subfamilies : Calliphorinae, Chrysomyinae, Rhiniinae and Sarcophaginae and accommodated 214 species from British India under thirtyseven genera. At present the subfamily Sarcophaginae has given a separate family status (Hall, 1947; Roback, 1951). Lehrer (1970) divided the family Calliphoridae into ten subfamilies: Ameniinae, Bengaliinae, Calliphorinae, Chrysomyinae, Mesembrinellinae, Mimodexiinae, Phormiinae, Polleniinae, Rhiniinae and Tricycleinae. Of these six subfamilies: Ameniinae, Bengaliinae, Calliphorinae, Chrysomyinae, Polleniinae and Rhiniinae are represented in Indian subcontinent in addition to Luciliinae and most of the subfamilies are with single tribe except Rhiniinae. There is so much controversy regarding the tribal subdivisions of all the subfamilies except Rhiniinae. Different authors subdivided Rhiniinae into several tribes and subtribes and placed the genera under these tribes and subtribes differently. Lehrer (1970) also divided Rhiniinae into 6 tribes: Isomyiini, Rhiniini, Rhyncomyiini, Stegosomini, Sokotrini and Trychoberiini, and accommodated the oriental genera *Rhinia*, *Chlororhinia* and *Stomorphina* under the tribe Rhiniini and *Borbororhinia*, *Cosmina*, *Metallea*, *Rhyncomya* and

*Thoracites* under the newly created tribe Rhyncomyiini. Kano and Shinonaga (1968) and James (1977) placed the oriental species under four subfamilies: Ameniinae, Calliphorinae, Chrysomyinae and Rhiniinae and placed all the species of Rhiniinae without any tribal subdivision. Pont (1980) also did not give any tribal subdivision of Rhiniinae. Schuman (1986) almost followed the classification of James (1977) in placing the palaeartic genera into different tribes and subtribes. On the basis of genitalia of both sexes, Fan (1988) grouped this subfamily into two tribes : Cosminini and Rhiniini, and placed the genera *Chlororhinia*, *Idiella*, *Rhinia* and *Stomorphina* under the subtribe Rhiniina of the tribe Rhiniini; *Borbororhinia* and *Alikangiella* under the subtribe Borbororhiniina, *Strongyloneura* and *Cosmina* under the subtribe Cosminina, *Isomyia* under the subtribe Isomyiina and *Metallioptis*, *Metallea* and *Rhyncomya* under the subtribe Rhyncomyiina of the tribe Cosminini. Kurahashi (1989) and Kurahashi and Thapa (1994) accommodated the oriental species of Rhiniinae under one tribe Rhiniini. Kurahashi and Chohanadisai (2001) divided this subfamily also into two tribes Cosminini and Rhiniini and placed the genera *Chlororhinia*, *Idiella*, *Rhinia* and *Stomorphina* under the former tribe and *Cosmina*, *Borbororhinia*, *Isomyia*, *Metallea*, *Rhyncomya* and *Strongyloneura* under the latter tribe. They synonymised the genus *Idielloptis* with *Stomorphina*. Most of the present day authors have abandoned the subtribal divisions of the subfamily Rhiniinae. To provide a reasonable and acceptable arrangement of the tribal division of this family, particularly subfamily Rhiniinae a precise revisionary work based on world wide is very much needed. The subfamily and tribal classifications adopted here follows largely that of Kurahashi and Thapa (1994) and Kurahashi and Chohanadisai (2001) with slight modifications. The fauna of the present day Indian calliphorid flies are now diversified with 112 species under thirty genera distributed in nine subfamilies: Ameniinae, Bengaliinae, Calliphorinae, Chrysomyinae, Helicoboscinae, Luciliinae, Melanomyinae, Polleniinae and Rhiniinae and the subfamily Rhiniinae into four tribes: Rhiniini, Cosminini, Isomyiini and Rhyncomyiini. The knowledge on the Indian calliphorid fauna is still inadequate because several states (7) and union territories (2) are still unexplored. Out of the 35 political subdivisions in the Indian subcontinent, the highest number of 48 species accommodated in nineteen genera occur in West Bengal, 30 species under seventeen genera all in Assam followed by Tamil Nadu which harbours 27 species under fifteen genera. The distribution of the species so far known from Indian subcontinent is provided in table 1. It is interesting to note that about 43% of the species are found in West Bengal where a thorough faunistic survey has been done earlier. To get a clear idea for accommodating the Indian genera into tribes and subtribes, a satisfactory classification of all the taxa known from India is inevitable. The total number of species of Indian calliphorid fauna is only about 1.08 % (Pont, 1980) of the world fauna and further research work on this group is very much essential. India is regarded as a centre of megadiversity due to its diverse natural and physical characteristics and it is expected that more known and unknown species will be available in this subcontinent if thorough faunistic survey of the states particularly from the hill area is done. Therefore, the studies on the taxonomic and biological diversities of this group would need much more attention. Moreover, the detailed structure of male and particularly female genitalia has not been investigated in India. It is expected that this checklist will stimulate future research on this family from India and neighbouring countries.

## SUMMARY

A checklist of 112 species of calliphoridae of India is provided and all the species are accommodated in 30 genera of 9 subfamilies. Distributional records of the species of all states and union territories so far recorded are included.

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Name of the species	A	AN	AnP	ArP	B	CH	C	DD	D	DN	G	Gu	H	HP	Jh	JK	Kt
110 <i>pollinosa</i>																	
111 <i>sarotes</i>																	
112 <i>*viridaurea</i>																	
Total number of species	30	4	X	16	16	X	1	X	3	X	X	X	1	9	4	7	3
Total number of genera	17	3	X	8	10	X	1	X	3	X	X	X	1	7	2	5	2

Name of the Species	K	Ld	MnP	Me	MP	Mr	Mz	N	O	Po	P	R	S	TN	T	UP	UT	WB
110 <i>pollinosa</i>						A					A			A		A		
111 <i>sarotes</i>														A				
112 <i>*viridaurea</i>																		
Total number of species	12	1	2	21	4	5	X	X	10	5	7	X	20	27	3	18	15	48
Total number of genera	8	1	2	13	3	4	X	X	7	4	6	X	13	15	3	12	10	19

A-denotes available. \*Species distribution within states and union territories was not recorded. Abbreviations used in the table: AN-Andaman & Nicobar Islands; AnP-Andhra Pradesh; ArP-Arunachal Pradesh; A-Assam; B-Bihar; C- Chandigarh; CH-Chhattisgarh; DD-Daman & Diu; D-Delhi; DN-Dadra & Nagar Haveli; G-Goa; Gu-Gujarat; H-Haryana; HP-Himachal Pradesh; Jh-Jharkhand; JK-Jambu & Kashmir; Kt-Karnataka; K- Kerala; Ld-Lakshadweep; MP-Madhya Pradesh; Mr-Maharashtra; MnP-Manipur; Me-Meghalaya; Mz- Mizoram; N-Nagaland; O-Orissa; Po-Pondicherry; P-Punjab; R-Rajasthan; S-Sikkim; TN-Tamil Nadu; T- Tripura; UP-Uttar Pradesh; UT-Uttaranchal; WB-West Bengal.