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AN INVENTORY OF NECROPHAGOUS FLIES FROM INDIA

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Author OK, DG, AM, KM, AN, DP, JS and DB managed the structure of the article, designed the study and managed the data analyses. Author OK wrote first draft of the manuscript. Authors DB and AN revised the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

India has experienced an increase in violent murder cases in recent years. In 2021, there were over 29 thousand murders reported across India. Furthermore, more than 55 thousand attempted murder cases were filed in the country that year. A consistent increase in attempted murder cases was seen over the years till 2017. The reasons for death have been elucidated using necrophagous fly data in recent years. Forensic entomology focuses on the close bond between insects and corpses in addition to the use of insects in medicolegal investigations and as well as necrophagous flies play a crucial role in the decay of corpses. A checklist of necrophagous flies from India is hence provided. A total of 349 species belonging to 56 genera under 16 families are documented in this list along with their details of distribution. This is the first checklist of necrophagous flies from India which gives the complete scenario of the diversity of such flies from this megadiverse country. This checklist might serve as a new source of data on criminal cases and wildlife poaching in India.

Keywords: Diptera; checklist; nutrient-recycling; diversity; decomposition; forensic entomology; carcass.

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ABBREVIATIONS

NCZ : National Zoological Collection
ZRS : Zoological Record Series
SFS : State Fauna Series

1. INTRODUCTION

The act of eating dead or rotting animal flesh is known as necrophagy. Though scavenger vertebrates such as vultures and jackals play a significant function in the detrivore community by eating on the dead creature, necrophagous arthropods play an equally vital role from an ecological standpoint [1]. In practically all natural systems, detrivores influence the decomposition of detrital resources, with extensive implications for community structure and ecosystem processes [2,3] contribute to nutrient cycling and microbial decomposition by disintegrating, eating, and converting organic matter [4,5].

Carrion is defined as a unique microhabitat marked by rapid ecological successions, as it is a highly ephemeral micro-ecosystem quickly degraded by the arthropods that inhabit it. It is a rich source of energy and a highly specialized ecosystem that is primarily used by entomological species. Even in countries with identical climates, the arthropods participating in succession differ as per geographic regions. Furthermore, the number of individuals and species populating these microhabitats differs significantly from one patch to the next and throughout time.

Necrophagous insects, also known as carcass insects, play an important role in the decomposition process, which is linked to decaying human and animal remnants and are used by insects as micro-niches, resulting in different micro-communities [6]. This major community is made up of a diversified fauna of necrophagous organisms that belong to the following groups:Coleoptera, Diptera, Hymenoptera, and Arachnida are the four orders of insects [7].

Several necrophagous insect species can be found on or around a carcass, and based on their predilection for a certain stage of decomposition; a specific colonization process is predicted to occur [8]. The arthropods engaged in the breakdown of animal and plant remnants belong to a variety of taxa, but the flies are the first true colonizer of the dead plants and animals. Necrophagous flies of the insect order Diptera are the first and often the most essential carrion consumers and they play an important ecological role as decomposers by assisting in ecosystem functions such as nutrient recycling. They also represent an important insect group used in criminal cases [9]. Insects and other arthropods used in criminal investigations with application to forensic entomology, a field of research. In a decomposing vertebrate body insects or arthropods are present [10]. These insect colonisers can be employed to calculate the postmortem index (PMI), or the time between death and corpse discovery, as well as the movement of the corpse, the method and cause of death, and the connection of culprits at the scene of the crime [11].

Blowflies (Calliphoridae), flesh flies (Sarcophagidae), and house flies (Muscidae) are among the approximately 18,000 species of Calyptratae flies (Diptera: Brachycera) found worldwide [12]. Because of their decomposer and synanthropic behaviors, these families are significant from a forensic standpoint [13].

Other than these families, phoridae, psychodidae, sepsidae, stratiomyidae, fanniidae, piophilidae, chloropidae, ephydridae, neriidae etc. have also been documented of visiting carcasses [14]. The calliphorids [15], sarcophagids [16,17], and muscids [18,19] are the most common necrophagous fly groups found in India and are noted for colonising carcasses. Flies from the fannidae, stratiomyidae [20,21], phoridae [22], sepsidae [23], piophilidae, neriidae, and ulidiidae families have also been recorded [24]. Studies on decomposer or necrophagous flies have been concentrated on forensic entomology research in India, although there have been no local systematic inventories of this fauna.

2. MATERIALS AND METHODS

The checklist (Table 1) is mainly based on taxonomic literature which were reviewed for extracting out Indian species of the necrophagous dipteran flies from relevant literatures and Catalog of Life (Bánki et al. 2022), Systema Dipterorum (v3.8) [25] (the binomial names are based on the valid nomenclature from Systema Dipterorum), Bionames [26], Catalog of Oriental Diptera [27], Zoo records series (upto 2022) and State Fauna Series, the National Zoological Collection (NCZ) and General diptera collection was also consulted from the Central Entomological labs of Zoological Survey of India, H.Q. Instead of considerable new taxonomic work, the study is relied on the body of existing literature.

Table 1. Checklist of necrophagous flies from the different states of India

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
Family- Sarcophagidae	Sub Family- Miltogrammatinae	
	Tribe- Amobiini	
	Subtribe- Amobiina	
	I. Genus- *Amobia* Robineau-Desvoidy, 1830	Tamil nadu (Coimbatore)
	Subgenus- *Amobia* Robineau-Desvoidy, 1830	
	1 *Amobia (Amobia) auriceps* (Baranov, 1935)	
	II. Genus- *Metopia* Meigen, 1803	
	2 *Metopia argentata* Macquart, 1851	Jammu and Kashmir
	3 *Metopia campestris* (Fallen, 1810)	Jammu and Kashmir
	4 *Metopia fastuosa* (Meigen, 1824)	Jammu and Kashmir Valley
	5 *Metopia nudibasis* (Malloch, 1930)	Karnataka
	III. Genus- *Wohlfahrtia* Brauer & Bergenstamm, 1889	
	6 *Wohlfahrtia nuba* (Wiedemann, 1830)	Rajasthan, Punjab
	7 *Wohlfahrtia trina* (Wiedemann, 1830)	Rajasthan, Punjab
	IV. Genus- *Phylloteles* Loew, 1844	
	8 *Phylloteles hyalipennis* (Baranov, 1934)	Assam

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	V.	Genus- *Hoplocephalomima* Verves, 1988	
	9	*Hoplacephala indica* Verves, 1988	Tamil Nadu
	10	*Hoplacephala nathani* Verves, 1988	Tamil Nadu
	11	*Hoplacephala mirabilis* Verves, 1979	Jammu and Kashmir, Karnataka
	VI.	Genus- *Taxigramma* Perris, 1852	
	12	*Taxigramma heteroneura* (Meigen, 1830)	Tamil Nadu
	VII.	Genus- *Phrosinella* Robineau-Desvoidy, 1863	
	13	*Phrosinella fedtshenkoi* (Rohdendorf, 1925)	Jammu and Kashmir Valley
	VIII.	Genus- *Protomiltogramma* Townsend, 1916	
	14	*Protomiltogramma nandii* Verves, 1979	Tamil Nadu
	15	*Protomiltogramma obscurior* (Villeneuve, 1916)	Kerala
	16	*Protomiltogramma rufiventris* (Baranov, 1938)	India
	17	*Eremasiomyia macularis* (Wiedemann, 1824)	Tamil Nadu, Bihar
	18	*Pterella krombeini* Verves, 1979	India
	IX.	Genus- *Senotainia* Macquart, 1846	
	19	*Senotainia albifrons* (Rondani, 1859)	Jammu and Kashmir, Tamil Nadu Assam, Bihar, Kerala, Karnataka,
	20	*Senotainia navigatrix* (Meijere, 1910)	Tamil Nadu
	21	*Senotainia (Sphixapata) anamalaica* Verves, 1988	Tamil Nadu

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Subfamily- Sarcophaginae		
	X.	Genus- *Blaesoxipha* Loew, 1861	
	Subgenus- *Blaesoxipha* Loew, 1861		
	22	*Blaesoxipha (Blaesoxipha) aldrichi* Nandi, 1992	Karnataka and Maharashtra
	23	*Blaesoxipha (Blaesoxipha) bhutanensis* Nandi, 1993	Sikkim
	24	*Blaesoxipha (Blaesoxipha) karnataka* Pape, 1994	Karnataka
	25	*Blaesoxipha nathani* Lopes, 1990	Karnataka, Kerala
	26	*Blaesoxipha (Blaesoxipha) pygmaea* (Zetterstedt, 1844)	Tamil Nadu, Mizoram, Madhya Pradesh
	27	*Blaesoxipha (Blaesoxipha) redempta* (Pandellé, 1896)	India
	28	*Blaesoxipha rishikeshi* Nandi, 1990	Uttar Pradesh
	29	*Blaesoxipha (Blaesoxipha) rufipes* (Macquart, 1839)	Meghalaya, Tamil Nadu
	30	*Blaesoxipha (Blaesoxipha) valangae* (Aldrich, 1932)	Karnataka
	XI.	Genus- *Ravinia* Robineau-Desvoidy, 1863	
	31	*Ravinia (Squamatodes) pernix* (Harris, 1780)	Andhra Pradesh, Arunachal Pradesh, Bihar, Jammu and Kashmir, Uttarakhand
	XII.	Genus- *Heteronychia* Brauer & Bergenstamm, 1889	
	Sub genus- *Uroxanthisca* Rohdendorf 1963		
	32	*Heteronychia (Uroxanthisca) calicifera* (Bottcher, 1912)	Bihar, Harayana, Himachal Pradesh, Karnataka, Maharashtra, Nagaland, Tamil Nadu, West Bnegal, Uttar Pradesh, Andaman and Nicobar Islands

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	XIII.	Genus- *Sarcophaga* Meigen, 1826	
	Subgenus- *Alisarcophaga* Fan & Chen, 1981		
	33	*Sarcophaga (Alisarcophaga) sawainensis* (Nandi, 1989)	Andaman and Nicobar
	Sub genus- *Baranovisca* Lopes, 1985		
	34	*Sarcophaga (Baranovisca) cantrelli* Verves, 1992	Tamil Nadu
	Sub genus- *Bercaea* Robineau-Desvoidy, 1863		
	35	*Sarcophaga (Bercaea) africa* (Wiedemann, 1824)	Assam, Arunachal Pradesh, Jammu and Kashmir, Kerala, Manipur, West Bengal, Bihar, Punjab, Sikkim, Meghalaya, Mizoram, Nagaland
	Sub genus- *Boettcherisca* Rohdendorf, 1937		
	36	*Sarcophaga (Boettcherisca) karnyi* (Hardy, 1927)	Andaman Islands
	37	*Sarcophaga (Boettcherisca) nathani* Lopes, 1961)	Gujrat, Tamil Nadu, Maharashtra, West Bengal
	38	*Sarcophaga (Boettcherisca) peregrina* (Robineau-Desvoidy, 1830	Assam, Bihar, Kerala, Uttar Pradesh, Madhya Pradesh, Himachal Pradesh, Tamil Nadu, West Bengal, Tripura, Mizoram, Manipur, Nagaland
	39	*Sarcophaga (Boettcherisca) bengalensis* (Nandi, 1992)	West Bengal, Gujrat, Maharastra
	Sub genus- *Fengia* Rohdendorf, 1964		
	40	*Sarcophaga (Fengia) ostindicae* (Senior-White, 1924)	Assam, Mizoram, and Uttar Pradesh
	41	*Sarcophaga (Fengia) kaimaraensis* (Nandi, 1992)	Karnataka

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Sub genus- *Harpagophalla* Rohdendorf, 1937		
	42	*Sarcophaga (Harpagophalla) kempi* (Senior-White, 1924)	Through out India
	43	*Sarcophaga (Harpagophalla) panchganiensis* Nandi,1993	Maharastra
	Sub genus- *Helicophagella* Enderlein, 1928		
	44	*Gujaratophalla (Helicophagella) girnarensis* Nandi, 1992	Gujrat
	45	*Sarcophaga (Helicophagella) melanura* Meigen, 1826	Bihar, Jammu and Kashmir, Tamil Nadu
	Sub genus- *Iranihindia* Rohdendorf, 1961		
	46	*Sarcophaga (Iranihindia) futilis* (Senior-White, 1924)	Through out India
	47	*Sarcophaga (Iranihindia) indica* Nandi, 1979	Assam, Arunachal Pradesh, Karnataka, West Bengal, Tamil Nadu, Bihar
	48	*Sarcophaga (Iranihindia) jamesi* Nandi, 1979	West Bengal, Bihar, Karnataka
	49	*Sarcophaga (Iranihindia) martellata* (Senior-White, 1924)	Through out India
	50	*Sarcophaga (Iranihindia) martellatoides* (Baranov, 1931)	Through out India
	51	*Iranihindia mengraia* Lehrer, 2008	India
	52	*Iranihindia nepalensis* Kano & Shinonaga, 1969	India
	53	*Sarconandia madrasiola* Lehrer, 2005	Madras
	Sub genus- *Kozlovea* Rohdendorf, 1937		
	54	*Sarcophaga (Kozlovea) cavangarei* (Nandi, 1988)	Tamil Nadu
	55	*Sarcophaga (Kozlovea) peshelicis* (Senior-White, 1930)	Himachal Pradesh, Harayana, West Bengal
	56	*Sarcophaga (Kozlovea) vervesi* Nandi, 1993	Maharashtra
	57	*Sarcophaga (Kozlovea) lothianensis* (Sinha & Nandi, 2002)	West Bengal

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Sub genus- *Leucomyia* Brauer & Bergenstamm, 1891		
	58	*Sarcophaga (Leucomyia) alba* (Schiner, 1868)	Andhra Pradesh, Karnataka, Kerala, Orissa, Uttar Pradesh
	Sub genus- *Lioproctia* Enderlein, 1928		
	59	*Sarcophaga (Lioproctia) annandalei* (Senior-White, 1924)	West Bengal, Bihar, Gujrat, Tamil Nadu, Uttar Pradesh, Orissa
	60	*Sarcophaga (Lioproctia) midnaporensis* Nandi, 1978	West Bnegal, Bihar, Gujrat, Uttar Pradesh
	61	*Sarcophaga (Lioproctia) pattoni* (Senior-White, 1924)	Tamil Nadu, Mizoram
	Sub genus- *Liopygia* Enderlein, 1928		
	62	*Sarcophaga (Liopygia) argyrostoma* (Robineau-Desvoidy, 1830)	Gujrat, Harayana, Rajasthan, Uttar Pradesh, Punjab
	63	*Sarcophaga (Liopygia) ruficornis* (Fabricius, 1794)	Through out India
	Sub genus- *Liosarcophaga* Enderlein, 1928		
	64	*Sarcophaga (Liosarcophaga) amplicercus* Shinonaga & Tumrasvin, 1979	Tamil Nadu, Madhya Pradesh, Karnataka, Tripura
	65	*Sarcophaga (Liosarcophaga) brevicornis* Ho, 1934	Through out India
	66	*Sarcophaga (Liosarcophaga) choudhuryi* (Sinha & Nandi, 2002)	West Bengal
	67	*Sarcophaga (Liosarcophaga) dux* Thomson, 1869	Through out India
	68	*Sarcophaga (Liosarcophaga) rohdendorfi* Salem, 1936	West Bengal, Andhra Pradesh, Orissa
	69	*Sarcophaga (Liosarcophaga) sarupi* Nandi, 1979	Uttar Pradesh, Mizoram, Assam
	70	*Sarcophaga (Liosarcophaga) scopariiformis* Senior-White, 1927	Through out India
	71	*Sarcophaga (Liosarcophaga) geetai* Algalil and Zambare, 2016	Maharastra
	72	*Liosarcophaga yunnanensis* Fan, 1964	India
	73	*Sarcophaga (Liosarcophaga) harpax* Pandellé, 1896	India

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	74	*Sarcophaga (Liosarcophaga) idmais* Séguy, 1934	India
	75	*Sarcophaga (Liosarcophaga) aegyptica* Salem, 1936	Punjab
	Sub genus- *Pandelleisca* Rohdendorf, 1937		
	76	*Sarcophaga (Pandelleisca) assamensis* Nandi & Ray, 1982	Assam, Manipur
	77	*Sarcophaga (Pandelleisca) bainbriggei* Nandi & Ray, 1982	Assam, Bihar, Orissa, Himachal Pradesh, Tripura, West Bengal
	78	*Sarcophaga (Pandelleisca) ballardi* (Senior-White, 1924)	Tamil Nadu, Karnataka, Maharashtra
	79	*Sarcophaga (Pandelleisca) curvata* Nandi, 1989	Himachal Pradesh, Harayana
	80	*Sarcophaga (Pandelleisca) taka* Pape, 1996	Karnataka, Maharashtra
	Sub genus- *Parasarcophaga* Johnston &Tiegs, 1921		
	81	*Parasarcophaga jaipurensis* Nandi, 1990	Rajasthan, Harayana, Meghalaya, Gujrat, Manipur, Himachal Pradesh
	82	*Parasarcophaga josephi* Nandi, 2002	Rajasthan, Meghalaya, Harayana
	83	*Sarcophaga (Parasarcophaga) albiceps* (Meigen, 1826)	Through out India
	84	*Sarcophaga (Parasarcophaga) hirtipes* (Wiedemann, 1830)	Through to India
	85	*Sarcophaga (Parasarcophaga) macroauriculata* (Ho, 1932)	Manipur, West Bengal, Nagaland, Sikkim, Uttar Pradesh, Meghalaya
	86	*Sarcophaga (Parasarcophaga) misera* (Walker, 1849)	Through out India
	87	*Sarcophaga (Parasarcophaga) taenionota* Wiedemann, 1819	Through out India
	Sub genus- *Phallosphaera* Rohdendorf, 1938		
	88	*Sarcophaga (Phallosphaera) gravelyi* (Senior-White, 1924)	Tamil Nadu, Andhra Pradesh
	Sub genus- *Pierretia* Robineau-Desvoidy, 1863		
	89	*Sarcophaga (Pierretia) wyatti* Nandi, 1994	Jammu and Kashmir

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Sub genus- *Pseudothyrsocnema* Rohdendorf, 1937		
	90	*Sarcophaga (Pseudothyrsocnema) caudagalli* Bottcher, 1912	Nilgiris, Kotagiri
	91	*Sarcophaga (Pseudothyrsocnema) indica* (Shinonaga & Lopes, 1975)	West Bengal
	92	*Sarcophaga (Pseudothyrsocnema) nicobarensis* (Nandi, 1989)	Nicobar Islands, Tripura
	93	*Sarcophaga (Pseudothyrsocnema) longistylata* (Shinonaga & Lopes, 1975)	West Bengal, Kerala, Bihar
	Sub genus- *Robineauella* Enderlein, 1928		
	94	*Sarcophaga (Robineauella) djakonovi* (Rohdendorf, 1937)	Kashmir
	95	*Sarcophaga (Robineauella) coei* (Rohdendorf, 1966)	Andhra Pradesh, Arunachal Pradesh, Mizoram, Sikkim, West Bengal, Madhya Pradesh
	96	*Sarcophaga (Robineauella) javana* Macquart, 1851	Arunachal Pradesh, Nagaland, Mizoram
	97	*Sarcophaga (Robineauella) walayari* (Senior-White, 1924)	Bihar, Karnataka, Kerala
	Sub genus- *Rosellea* Rohdendorf, 1937		
	98	*Sarcophaga (Rosellea) khasiensis* (Senior-White, 1924)	Jammu and Kashmir, Manipur, Meghalaya, Sikkim, Nagaland
	Sub genus- *Sarcorohdendorfia* Baranov, 1938		
	99	*Sarcophaga (Sarcorohdendorfia) antilope* Bottcher, 1913	Assam
	100	*Sarcophaga (Sarcorohdendorfia) froggatti* Taylor, 1917	Assam
	101	*Sarcophaga (Sarcorohdendorfia) inextricata* Walker, 1859	Andaman Islands
	102	*Sarcophaga (Sarcorohdendorfia) mysorensis* Nandi, 1988	Karnataka, West Bengal, Tripura
	103	*Sarcophaga (Sarcorohdendorfia) pusana* Senior-White, 1924	West Bengal, Bihar, Nagaland
	104	*Sarcophaga (Sarcorohdendorfia) seniorwhitei* Bezzi	Arunachal Pradesh
	105	*Sarcophaga (Sarcorhodendorfia) desaii* (Nandi, 1978)	India

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Sub genus- *Sarcosolomonia* Baranov, 1938		
	106	*Sarcophaga (Sarcosolomonia) arabari* Pape, 1996	West Bengal
	107	*Sarcophaga (Sarcosolomonia) andamanensis* Nandi, 1989	Karnataka, Andaman Islands
	108	*Sarcophaga (Sarcosolomonia) chambaensis* Nandi, 1989	Himachal Pradesh
	109	*Sarcophaga (Sarcosolomonia) crinita* Parker, 1917	West Bengal, Bihar, Tamil Nadu
	110	*Sarcophaga (Sarcosolomonia) kaushanensis* Nandi, 1990	Uttar Pradesh
	111	*Sarcophaga (Sarcosolomonia) rohdendorfia* Pape, 1996	Arunachal Pradesh, Orissa, West Bengal
	112	*Sarcophaga (Sarcosolomonia) susainathani* Pape, 1996	Tamil Nadu
	Sub genus- *Seniorwhitea* Rohdendorf, 1937		
	113	*Sarcophaga (Seniorwhitea) mantiae* Nandi, 2002	West Bengal
	114	*Sarcophaga (Seniorwhitea) princeps* Wiedemann, 1830	Through out India
	Sub genus- *Sinonipponia* Rohdendorf, 1965		
	115	*Sarcophaga (Sinonipponia) bengalensis* (Nandi, 1977)	West Bengal, Maharashtra
	116	*Sarcophaga (Sinonipponia) hainanensis* Ho, 1936	India
	117	*Sarcophaga (Sinonipponia) smarti* Nandi, 1991	Tripura
	Sub genus- *Tricholioproctia* Baranov, 1938		
	118	*Sarcophaga (Tricholioproctia) ghaiae* Nandi, 1979	Mizoram

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	Sub genus- *Thyrsocnema* Enderlein, 1928		
	119	*Sarcophaga (Thyrsocnema) dasguptai* Nandi, 1979	Rajasthan
	120	*Sarcophaga (Thyrsocnema) kentejana* Rohdendorf, 1937	Jammu and Kashmir, Punjab
	121	*Sarcophaga (Thyrsocnema) lushainensis* Nandi,1992	Mizoram, Manipur
	Sub genus- *Heteronychia* Brauer & Bergenstamm 1889		
	122	*Sarcophaga (Heteronychia) filia* Rondani, 1860	India
	123	*Sarcophaga (Heteronychia) smithiana* Pape, 1996	Bihar
Family- Calliphoridae	Subfamily- Calliphorinae		
	Tribe- Calliphorini		
	XIV.	Genus- *Calliphora* Robineau-Desvoidy, 1830	
	124	*Calliphora (Calliphora) vicina* Robineau-Desvoidy, 1830	West Bengal, Himachal Pradesh, Sikkim, Uttar Pradesh
	125	*Calliphora (Calliphora) pattoni* Aubertin, 1931	West Bengal, Meghalaya, Sikkim
	126	*Callipora vomitoria* (Linneaus, 1758)	West Bengal, Himachal Pradesh, Meghalaya, Sikkim
	127	*Calliphora (Calliphora) loewi* Enderlein, 1903	India
	128	*Calliphora (Aldrichina) grahami* Aldrich, 1930	West Bengal
	129	*Calliphora erythrocephala* Macquart, 1834	Shimla
	Tribe- Phumosiini		
	XV.	Genus- *Phumosia* Robineau-Desvoidy, 1830	
	130	*Phumosia indica* (Surcouf, 1914)	Madras
	131	*Phumosia testacea* (Senior-White, 1923)	India

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	Subfamily- Luciliinae	
	Tribe- Luciliini	
	XVI. Genus- *Hemipyrellia* Townsend, 1917	
	132 *Hemipyrellia ligurriens* (Wiedemann, 1830)	West Bengal, Bihar, Sikkim, Tamil Nadu
	133 *Hemipyrellia pulchra* (Wiedemann, 1830)	West Bengal, Bihar, Orissa, Punjab, Tamil Nadu, Uttar Pradesh, Pondicherry
	XVII. Genus- *Hypopygiopsis* Townsend, 1916	
	134 *Hypopygiopsis infumata* (Bigot, 1877)	India
	135 *Hypopygiopsis tumrasvini* Kurahashi, 1977	India
	XVIII. Genus- *Lucilia* Robineau-Desvoidy, 1830	
	136 *Lucilia ampullacea* Villeneuve, 1922	West Bengal, Kerala
	137 *Lucilia bazini* Seguy, 1934	West Bengal
	138 *Lucilia calviceps* Bezzi, 1927	India
	139 *Lucilia cuprina* (Wiedemann, 1830)	West Bengal
	140 *Lucilia illustris* (Meigen, 1826)	West Bengal, Sikkim
	141 *Lucilia fumicosta* Malloch, 1926	India
	142 *Lucilia papuensis* Macquart, 1843	West Bengal, Kerala, Arunachal Pradesh, Kashmir
	143 *Lucilia porphyrina* (Walker, 1856)	West Bengal, Kashmir, Arunachal Pradesh, Himachal Pradesh, Sikkim
	144 *Lucilia sericata* (Meigen, 1826)	West Bengal

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	Subfamily- Chrysomyinae	
	Tribe- Chrysomyini	
	XIX. Genus- *Chrysomya* Robineau-Desvoidy, 1830	Through out India
		West Bengal, Arunachal Pradesh
	145 *Chrysomya albiceps* (Wiedemann, 1819)	India
	146 *Chrysomya bezziana* Villeneuve, 1914	West Bengal
	147 *Chrysomya defixa* (Walker, 1857)	West Bengal, Sikkim, Tamil Nadu and
	148 *Chrysomyia indica* Sinha, 2004	Through out India
	149 *Chrysomya megacephala* (Fabricius, 1794)	India
	150 *Chrysomya nigripes* Aubertin, 1932	West Bengal, Assam, Tamil Nadu, Meghalaya, Arunachal Pradesh, Himachal Pradesh
	151 *Chrysomya pinguis* (Walker, 1858)	India
	152 *Chrysomya phaonis* (Seguy, 1928)	West Bengal, Sikkim, Nicobar Islands
	153 *Chrysomya rufifacies* (Macquart, 1843)	Tamil Nadu and through out India
	154 *Chrysomya villeneuvi* Patton, 1922	India
Family- Stratiomyidae	Subfamily- Hermetiinae	
	XX. Genus- *Hermetia* Linnaeus, 1758	
	155 *Hermetia illucens* (Linnaeus, 1758)	Through out India
	156 *Hermetia laeta* Meijere, 1904	West Bengal
	Subfamily- Sarginae	
	XXI. Genus- *Sargus* Fabricius, 1798	

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	157	*Sargus cyaneus* (Brunetti, 1912)	Manipur, Tamil Nadu
	158	*Sargus gemmifer* Walker, 1849	Meghalaya
	159	*Sargus mactans* Walker, 1859	Arunachal Pradesh, Meghalaya, Uttarakhand
	160	*Sargus metallinus* Fabricius, 1805	Through out India
	161	*Sargus rufitarsis* (Macquart, 1846)	Pondicherry
	162	*Sargus splendidus* Brunetti, 1925	Meghalaya
Family- Phoridae	Superfamily- Phoroidea		
	XXII.	Genus- *Conicera* Meigen, 1830	
	163	*Conicera (Tritoconicera) kempi* Brunetti, 1924	Meghalaya, Assam
	Subfamily- Metopininae		
	Tribe- Metopinini		
	XXIII.	Genus- *Megaselia* Rondani, 1856	
	Subgenus- *Megaselia* Rondani, 1856		
	164	*Megaselia (Megaselia) apposita* Brues, 1936	India
	165	*Megaselia chlumetiae* Disney, 1992	Maharashtra
	166	*Megaselia (Megaselia) curtineura* Brues, 1909	West Bengal
	167	*Megaselia (Aphiochaeta) malaisei* Beyer, 1958	India
	168	*Megaselia (Aphiochaeta) pallicornis* Brunetti, 1912	West Bengal
	169	*Megaselia palpella* (Bayer,1967)	India
	170	*Megaselia pleurota* Disney, 1994	Chandigarh
	171	*Megaselia (Megaselia) ruficornis* (Meigen, 1830)	India

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	172	*Megaselia (Megaselia) rupifes* (Meign,1804)	Through out India
	173	*Megaselia (Megaselia) rutilipes* Beyer,1958	India
	174	*Megaselia sandhui* Disney,1981	India
	175	*Megaselia (Megaselia) scalaris* (Loew,1866)	Assam, West Bengal
	176	*Megaselia tamilnaduensis* Disney, 1995	Tamil Nadu
	Subgenus- *Aphiochaeta*		
	177	*Megaselia (Aphiochaeta) apicalis* (Brues, 1905)	Maharashtra
	178	*Megaselia (Aphiochaeta) approximata* (Brunetti, 1912)	West Bengal
	179	*Megaselia (Aphiochaeta) flavifacies* (Brunetti, 1912)	West Bengal
	180	*Megaselia (Aphiochaeta) flavifacioides* (Senior-White, 1922)	Assam, Meghalaya
	181	*Megaselia (Aphiochaeta) inaequalis* (Brunetti, 1912)	India
	182	*Megaselia (Aphiochaeta) latifasciata* (Brunetti, 1912)	Bihar, West Bengal
	183	*Megaselia (Aphiochaeta) pseudoscalaris* Senior-White, 1924	Bihar, Chhattisgarh
	184	*Megaselia (Aphiochaeta) tibialis* Brues, 1905	Maharashtra
	185	*Megaselia (Aphiochaeta) trilineata* Brunetti, 1912	West Bengal
Family- Fanniidae	XXIV.	Genus- *Fannia* Robineau –Desvoidy, 1830	
	186	*Fannia canicularis* (Linnaeus, 1761)	Kashmir, Himachal Pradesh, Bihar, Madras
	187	*Fannia indica* Chillcott, 1961	Madras
	188	*Fannia prisca* Stein, 1918	Uttar Pradesh, West Bengal
	189	*Fannia scalaris* (Fabricius, 1794)	Himachal Pradesh
Family- Trichoceridae	XXV.	Genus- *Trichocera* Meigen, 1803	
	Subgenus- *Metatrichocera* Dahl, 1966		
	190	*Trichocera (Metatrichocera) schmidi* Alexander,1959	Uttar Pradesh

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	191	*Trichocera (Metatrichocera) thaunastopyga* Alexander, 1960	Sikkim
	Sub genus- *Trichocera* Meigen, 1803		
	192	*Trichocera abieticola* Alexander, 1935	Kashmir
	193	*Trichocera alticola* Alexander, 1935	Kashmir
	194	*Trichocera auripennis* Alexander, 1960	Sikkim
	195	*Trichocera bellula* Alexander, 1960	Sikkim
	196	*Trichocera bisignata* Alexander, 1961	Uttar Pradesh
	197	*Trichocera (Trichocera) glacialis* Alexander, 1935	Kashmir
	198	*Trichocera (Trichocera) maculipennis* Meigen, 1818	India
	199	*Trichocera (Trichocera) percincta* Alexander, 1961	Sikkim
	200	*Trichocera (Trichocera) salatator* (Harris, 1776)	India
	201	*Trichocera superna* Alexander, 1961	Sikkim
	202	*Trichocera tenuicercus* Alexander, 1959	Uttar Pradesh
	203	*Trichocera variata* Alexander, 1961	Uttar Pradesh
Family- Sphaeroceridae	Subfamily- Copromyza		
	XXVI.	Genus- *Leptocera* Olivier, 1813	
	Subgenus- *Leptocera* Olivier, 1813		
	204	*Leptocera (Leptocera) curvinervis* (Stenhammar, 1854)	Sikkim
	205	*Leptocera (Leptocera) nigrolimbata* (Duda, 1925)	West Bengal
	206	*Leptocera (Leptocera) paranigrolimbata* (Duda, 1925)	Assam, West Bengal
	Subgenus- *Rachispoda* Lioy, 1864		

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	207 *Leptocera (Rachipoda) subtinctipennis* (Brunetti, 1913)	Assam
	XXVII. Genus- *Copromyza* Fallén, 1810	
	Subgenus- *Borborillus* Duda, 1923	
	208 *Copromyza (Borborillus) marginatis* (Adams, 1905)	India
	209 *Copromyza (Borborillus) sordida* Zetterstedt, 1847	India
	Subgenus- *Crumomyia* Macquart, 1835	
	210 *Copromyza (Crumomyia) deeming* Hackman, 1965	Sikkim
	XVIII. Genus- *Coproica* Rondani, 1861	
	211 *Coproica ferruginata* (Stenhammar, 1854)	India
Family- Piophilidae	XXIX. Genus- *Piophila* Fallén, 1810	
	212 *Piophila flavifacies* Brunetti, 1909	West Bengal
	XXX. Genus- *Stearibia* Meign, 1826	
	213 *Stearibia nigriceps* Meign, 1826	India
	XXXI. Genus- *Centrophlebomyia* Hendel, 1907	
	214 *Centrophlebomyia orientalis* Hendel, 1907	West Bengal, Kashmir
Family- Psychodiddae	XXXII. Genus- *Psychoda* Latreill, 1796	

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	215 *Psychoda alternata* Say, 1824	West Bengal
	216 *Psychoda harrisi* Satchell, 1950	India
	217 *Psychoda makati* Del Rosario, 1936	India
	218 *Psychoda nigripennis* Brunetti, 1908	Himachal Pradesh, West Bengal
	219 *Psychoda parthenogenetica* Tonnoir, 1940	India
	220 *Psychoda vittata* Brunetti, 1908	West Bengal
Family- Ulidiidae	Subfamily- Ulidiinae	
	XXIII. Genus- *Physiphora* Fallén, 1810	
	221 *Physiphora clausa* (Macquart, 1844)	India
Family- Sepsidae	Subfamily- Sepsinae	
	I. Genus- *Australosepsis* Malloch, 1925	
	222 *Australosepsis frontalis* (Walker, 1860)	Maharashtra, Andhra Pradesh, Kerala, Punjab
	223 *Australosepsis niveipennis* (Becker, 1903)	Andhra Pradesh, Madras, Orissa, Uttar Pradesh, West Bengal
	II. Genus- *Decachaetophora* Duda, 1926	
	224 *Decachaetophora aeneipes* (de Meijere, 1913)	Assam, Himachal Pradesh, Punjab, Sikkim, Uttar Pradesh, West Bengal
	III. Genus- *Dicranosepsis* Duda, 1926	
	225 *Dicranosepsis bicolor* (Wiedemann, 1830)	Andhra Pradesh, Assam, Maharashtra, Punjab, Sikkim, Uttar Pradesh, West Bengal
	IV. Genus- *Meroplius* Rondani, 1874	
		Bihar, Maharashtra

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	226	*Meroplius beeckeri* (de Meijere, 1906)	West Bengal
	227	*Meroplius fasciculatus* (Brunetti, 1910)	
	V.	Genus- *Sepsis* Fallén, 1810	Andhra Pradesh, Assam, Bihar, Kerala Uttar Pradesh
	228	*Sepsis albopunctata* Lamb, 1914	Assam, Kerala, Maharashtra, West Bengal, Madras
	229	*Sepsis coprophila* de Meijere, 1906	Sikkim, West Bengal
	230	*Sepsis himalayensis* Brunetti, 1910	Assam, Kerala, Maharashtra, West Bengal
	231	*Sepsis indica* Wiedemann, 1824	Andhra Pradesh, Himachal Pradesh, Bihar, Uttar Pradesh, West Bengal
	232	*Sepsis lateralis* Wiedemann, 1830	
	233	*Sepsis monostigma* Thomson, 1869	Kashmir, Uttar Pradesh, West Bengal
	234	*Sepsis nitens* Wiedemann, 1824	Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Madras, Uttar Pradesh, West Bengal
	235	*Sepsis thoracica* (Robineau-Desvoidy, 1830)	Himachal Pradesh, Kashmir, Madras, Maharashtra, Manipur, Punjab, Uttar Pradesh, West Bengal
	VI.	Genus- *Themira* Robineau-Desvoidy, 1830	Punjab and Himachal Pradesh
	236	*Themira bifida* Zuska, 1974	
	VII.	Genus- *Toxopoda* Macquart, 1851	Madras, Orissa, Uttar Pradesh, West Bengal
	237	*Toxopoda contracta* (Walker, 1852)	
Family- Milichidae	′III.	Genus- *Desmometopa* Loew, 1866	
	238	*Desmometopa m-nigrum* (Zetterstedt, 1848)	Assam
	239	*Desmometopa singaporensis* Kertész, 1899	Assam, Rajasthan
	240	*Desmometopa sordida* (Fallén, 1820)	India
	241	*Desmometopa varipalpis* Malloch, 1927	Madras

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	IX. Genus- *Phyllomyza* Fallén, 1810	
	242 *Phyllomyza tenebrosa* Brunetti, 1924	Assam
	X. Genus- *Milichielia* Giglio-Tos, 1895	
	243 *Milichielia smithi* Aldrich, 1931	Assam, Madras
	244 *Milichielia sumptuosa* de Meijere, 1911	India
Family- Ephydridae	Subfamily- Psilopinae	
	Tribe- Gymnopini	
	XI. Genus- *Allotrichoma* Becker, 1896	
	245 *Allotrichoma biroi* Cresson, 1929	Maharashtra
	246 *Allotrichoma livens* Cresson, 1929	Maharashtra
Family- Chloropidae	Subfamily- Oscinellinae	
	I. Genus- *Siphunculina* Rondani, 1856	
	247 *Siphunculina funicola* (de Meijere, 1905)	Andhra Pradesh, Assm, Kerala, Madras, Maharashtra, Mysore, West Bengal
	248 *Siphunculina fasciata* Cherian, 1971	Assam, West Bengal
	249 *Siphunculina minima* de Meijere, 1908	Assam, West Bengal
	250 *Siphunculina striolata* Wiedemann, 1830	Assam, West Bengal, Madras
	251 *Siphunculina ulceria* Cherian, 1971	Kerala
Family- Scathophagidae	II. Genus- *Scathophaga* Meigen, 1803	
	252 *Scathophaga mellipes* Coquillett, 1898	Kashmir, Sikkim, West Bengal
	253 *Scathophaga stercoraria* (Linnaeus, 1758)	Himachal Pradesh, Kashmir, Sikkim, Uttar Pradesh

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
Family- Muscidae	Subfamily- Muscinae	
	Tribe- Muscini	
	III. Genus- *Dasyphora* Robineau-Desvoidy, 1830	
	254 *Dasyphora gussakovskii* Zimin, 1947	Uttar Pradesh
	255 *Dasyphora himalayensis* Pont, 1972	West Bengal
	256 *Dasyphora kempi* Emden, 1965	Assam, Himachal Pradesh, Kashmir, West Bengal
	IV. Genus- *Mitroplatia* Enderlein, 1935	
		Madras, Coimbatore
	257 *Mitroplatia albisquama* (Emden, 1965)	Madras
	258 *Mitroplatia brunneisquama* (Emden, 1965)	Assam
	259 *Mitroplatia chrysomyzina* (Emden, 1965)	
	V. Genus- *Morellia* Robineau-Desvoidy, 1830	
	260 *Morellia biseta* Emden, 1965	Madras
	261 *Morellia hortensia* (Wiedemann, 1824)	Andhra Pradesh, Himachal Pradesh, Kerala, Madhya Pradesh, Madras, Punjab, Uttar Pradesh, West Bengal
	262 *Morellia nigrisquama* Malloch, 1928	Assam, Uttar Pradesh, West Bengal
	263 *Morellia pectinipes* Emden, 1965	Bihar, Uttar Pradesh
	264 *Morellia quadriremis* Emden, 1965	Andhra Pradesh, Bihar
	265 *Morellia saishuensis* Ôuchi, 1942	India
	266 *Morellia sordidisquama* Stein, 1918	Madras
	VI. Genus- *Musca* Linnaeus, 1758	Andhra Pradesh, Assam, Madhya Pradesh, Orissa, Punjab, Uttar Pradesh, West Bengal
	Subgenus- *Byomya* Robineau-Desvoidy, 1830	Andhra Pradesh, Madhya Pradesh, Madras, Uttar

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
		Pradesh, West Bengal
	267 *Musca (Byomya) conducens* Walker, 1859	India
	268 *Musca (Byomya) confiscata* Speiser, 1924	Andhra Pradesh, Assam, Bihar, Madras, Uttar Pradesh, West Bengal
	269 *Musca (Byomya) jucidula* (Loew), 1856	Andhra Pradesh, Kerala, Madhya Pradesh, Mysore, Uttar Pradesh
	270 *Musca (Byomya) pattoni* Austen, 1910	Andhra Pradesh, Assam, Bihar, Madras, Nova Goa, Uttar Pradesh, West Bengal
	271 *Musca (Byomya) planiceps* Wiedemann, 1824	Kashmir
	272 *Musca (Byomya) sorbens* Wiedemann, 1830	Andhra Pradesh, Assam, Bihar, Madras, Nova Goa, Uttar Pradesh, West Bengal
	273 *Musca (Byomya) tempestiva* Fallén, 1817	
	274 *Musca (Byomya) ventrosa* Wiedemann, 1830	
	Subgenus- *Eumusca* Townsend, 1911	Kashmir, Punjab
		Kerala
	275 *Musca (Eumusca) autumnalis* Degeer, 1776	Andhra Pradesh, Assam, Bihar, Madras
	276 *Musca (Eumusca) craggy* Patton, 1922	Assam, Himachal Pradesh, Punjab, Sikkim, West Bengal
	277 *Musca (Eumusca) fletcheri* Patton and Senior-White, 1924	Andhra Pradesh, Assam, Bihar, Madhya Pradesh, Madras Uttar Pradesh, West Bengal
	278 *Musca (Eumusca) hervei* Villeneuve, 1922	Andhra Pradesh, Madras, West Bengal
	279 *Musca (Eumusca) lusoria* Wiedemann, 1824	Kerala, Madras
	280 *Musca (Eumusca) Senior-Whitei* Patton, 1922	Andhra Pradesh, Madras, Punjab, Uttar Pradesh, West Bengal
	281 *Musca (Eumusca) villeneuvii* Patton, 1922	
	282 *Musca (Eumusca) xanthomelas* Wiedemann, 1824	
	Subgenus- *Lissosterna* Bezzi, 1922	
		India
	283 *Musca (Lissosterna) albina* Wiedemann, 1830	
	Subgenus- *Musca* Linnaeus, 1758	Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Kashmir, Madras, Maharashtra, Mysore, Nova Goa, Punjab, Sikkim, Uttar Pradesh, West Bengal

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	284 *Musca (Musca) domestica* Linnaeus, 1758	
	Subgenus- *Philaematomyia* Austen, 1909	Andhra Pradesh, Assam, Bihar, Kerala, Madhya Pradesh, Madras, Maharashtra, Punjab, Uttar Pradesh, West Bengal
	285 *Musca (Philaematomyia) crassirostris* Stein, 1903	
	Subgenus- *Plaxemya* Robineau-Desvoidy, 1830	Kashmir
	286 *Musca (Plaxemya) osiris* Wiedemann, 1830	
	Subgenus- *Pseudosetimusca* Joseph and Parui, 1972	Assam
	287 *Musca (Pseudosetimusca) santoshi* Joseph and Parui, 1972	
	Subgenus- *Ptilolepis* Bezzi, 1921	Andhra Pradesh, Assam, Madras, West Bengal
	288 *Musca (Ptilolepis) inferior* Stein, 1909	
	Subgenus- *Viviparomusca* Townsend, 1915	Assam, Himachal Pradesh, Kashmir, Madras, Punjab, Sikkim, Uttar Pradesh, West Bengal
	289 *Musca (Viviparomusca) bezzii* Patton and Cragg, 1913	Assam, Madras, Sikkim, Uttar Pradesh, West Bengal
	290 *Musca (Viviparomusca) convexifrons* Thomson, 1869	Andhra Pradesh, Assam, Bihar, Madras, Uttar Pradesh, West Bengal
	291 *Musca (Viviparomusca) formosana* Malloch, 1925	Assam
	292 *Musca (Viviparomusca) illingworthi* Patton, 1923	

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	VII.	Genus- *Hydrotaea* Robineau-Desvoidy, 1830	Madras
			Kashmir
	293	*Hydrotaea affinis* Karl, 1935	Uttar Pradesh, West Bengal
	294	*Hydrotaea armipes* (Fallén, 1825)	Madras
	295	*Hydrotaea cilifemorata* Emden, 1965	Through out India
	296	*Hydrotaea cyrtoneurina* (Zetterstedt, 1845)	
	297	*Hydrotaea chalcogaster* (Wiedemann, 1824)	Himachal Pradesh, Kashmir, Uttar Pradesh
	298	*Hydrotaea dentipes* (Fabricius, 1805)	India
	299	*Hydrotaea malaise* Emden, 1965	
	VIII.	Genus- *Muscina* Robineau-Desvoidy, 1830	Assam, Sikkim, West Bengal
			Himachal Pradesh, Kashmir
	300	*Muscina pascuorum* (Meigen, 1826)	
	301	*Muscina stabulans* (Fallén, 1817)	
	IX.	Genus- *Ophyra* Robineau-Desvoidy, 1830	Andhra Pradesh, Madras, Uttar Pradesh, West Bengal
	302	*Ophyra capensis* (Wiedemann, 1818)	Assam, Himachal Pradesh, Kerala, Madras, Maharashtra, Nova Goa, Uttar Pradesh, West Bengal
	303	*Ophyra chalcogaster* (Wiedemann, 1824)	Kashmir
	304	*Ophyra leucostoma* (Wiedemann, 1817)	Assam
	305	*Ophyra obscurifrons* Sabrosky, 1949	Madhya Pradesh
	306	*Ophyra spinigera* Stein, 1910	
	X.	Genus- *Phaonia* Robineau-Desvoidy, 1830	
			West Bengal
	307	*Phaonia acerba* Stein, 1918	Kashmir

Family	Subfamily, Tribe, Subtribe, Genus, Species		Distribution
	308	*Phaonia atronitens* Malloch, 1921	Madras
	309	*Phaonia auricoxa* Emden, 1965	Assam
	310	*Phaonia basichaeta* Emden, 1965	Himachal Pradesh
	311	*Phaonia curviseta* Emden, 1965	Assam, Himachal Pradesh, Uttar Pradesh, West Bengal
	312	*Phaonia debilis* Stein, 1918	Madras
	313	*Phaonia flavinota* Emden, 1965	Kashmir, Assam
	314	*Phaonia foavomaculata* Malloch, 1921	West Bengal
	315	*Phaonia freyana* Emden, 1965	Himachal Pradesh, West Bengal
	316	*Phaonia fuscicoxa* Emden, 1965	Himachal Pradesh, West Bengal
	317	*Phaonia interfrontalis* Emden, 1965	
	318	*Phaonia kambaitiana* Emen, 1965	Himachal Pradesh, Uttar Pradesh Kashmir, Uttar Pradesh
	319	*Phaonia kashmirensis* Malloch, 1921	Madras
	320	*Phaonia magnipalpis* Emden, 1965	West Bengal
	321	*Phaonia malaiseana* Emden, 1965	West Bengal
	322	*Phaonia oxystoma* Emden, 1965	West Bengal
	323	*Phaonia oxystomodes* Emden, 1965	West Bengal
	324	*Phaonia rabriventris* Emden,1965	Himachal Pradesh
	325	*Phaonia simulans* Malloch, 1931	Kashmir
	326	*Phaonia thomsoni* Malloch, 1921	Uttar Pradesh
	327	*Phaonia triseriata* Emden, 1965	West Bengal
	328	*Phaonia veniesetosa* Emden, 1965	
	XI.	Genus- *Synthesiomyia* Brauer and Bergenstamm, 1893	West Bengal
	329	*Synthesiomyia nudiseta* (van der Wulp, 1883)	
	Tribe- Atherigonini		

Family	Subfamily, Tribe, Subtribe, Genus, Species	Distribution
	XII. Genus- *Atherigona* Rondani, 1865	
	Subgenus- *Acritochaeta* Grimshaw,1901	Madras, West Bengal
	330 *Atherigona (Acritochaeta) distincta* Malloch, 1923	Andhra Pradesh, Bihar, Kerala, Madhya Pradesh, Madras, Maharashtra, Mysore, Orissa, Punjab, Rajasthan, Uttar Pradesh, West Bengal
	331 *Atherigona (Acritochaeta) orientalis* Schiner, 1868	
	332 *Atherigona (Acritochaeta) pallidipalpis* Malloch, 1923	Bihar
	Subgenus- *Atherigona* Rondani	Gujarat, Madras, Rajasthan
	333 *Atherigona (Atherigona) approximata* Malloch, 1925	Andhra Pradesh, Madras, Maharashtra
	334 *Atherigona (Atherigona) atripalpis* Malloch, 1925	Andhra Pradesh
	335 *Atherigona (Atherigona) bella* (Frey, 1917)	Andhra Pradesh, Madras
	336 *Atherigona (Atherigona) bidens* Hennig, 1952	West Bengal
	337 *Atherigona (Atherigona) confusa* Malloch, 1928	Madras
	338 *Atherigona (Atherigona) eriochloae* Malloch, 1925	Andhra Pradesh, Bihar, Madhya Pradesh, Madras, Maharashtra, Rajasthan, Uttar Pradesh
	339 *Atherigona (Atherigona) falcata* (Thomson, 1869)	Andhra Pradesh, West Bengal
	340 *Atherigona (Atherigona) laeta* (Wiedemann, 1830)	Bihar, Uttar Pradesh
	341 *Atherigona (Atherigona) miliaceae* Malloch, 1925	Kerala, Punjab, Rajasthan, Uttar Pradesh
	342 *Atherigona (Atherigona) naqvii* Steyskal, 1966	Bihar, Kerala, Madhya Pradesh, Madras, Maharashtra, Mysore, Rajasthan, Uttar Pradesh, West Bengal
	343 *Atherigona (Atherigona) oryzae* Malloch, 1925	
	344 *Atherigona (Atherigona) pulla* (Wiedemann, 1830)	Bihar, Madras, Mysore
	345 *Atherigona (Atherigona) punctata* Karl, 1940	Andhra Pradesh, Bihar, Madras, Uttar Pradesh
	346 *Atherigona (Atherigona) reversura* Villeneuve, 1936	Andhra Pradesh, Assam, Maharashtra, Sikkim, Uttar Pradesh, West Bengal
	347 *Atherigona (Atherigona) simplex* (Thomson, 1869)	
	348 *Atherigona (Atherigona) specata* Rondanio.1871	Assam, Bihar, Madras, Uttar Pradesh, West Bengal
	349 *Atherigona (Atherigona) tridens* Malloch, 1928	Andhra Pradesh, Bihar, Madhya Pradesh, Madras, Maharashtra, Mysore, Punjab, Rajasthan, Uttar Pradesh
		West Bengal

3. RESULTS AND DISCUSSION

The findings showed that 349 species belonging to 56 genera under 16 families are represented in the fauna. The distribution of necrophagous fly fauna is also presented here which represents the diversity from India. This inventory depicts that West Bengal has the most diversity of necrophagous flies with 119 species followed by Uttar Pradesh with 62 species where some are common. In Northern states of India, the species diversity are as follows- Punjab (34), Jammu and Kashmir (53), Himachal Pradesh (33), Rajasthan (13) Uttar Pradesh (62) and Uttarakhand (2) as reported in the checklist. The Southern states represents the necrophagous species diversity as follows- Kerala (25), Tamil Nadu (32), Karnataka (19), Pondicherry (20), Andhra Pradesh (38) as reported till now. In comparison to other parts of India North-Eastern states have lower diversity of these flies except Assam comprising of 57 species as reported through this checklist. (Fig. 1) Various studies on necrophagous fly families have been done in India but there have been no local systematic inventories of these flies.

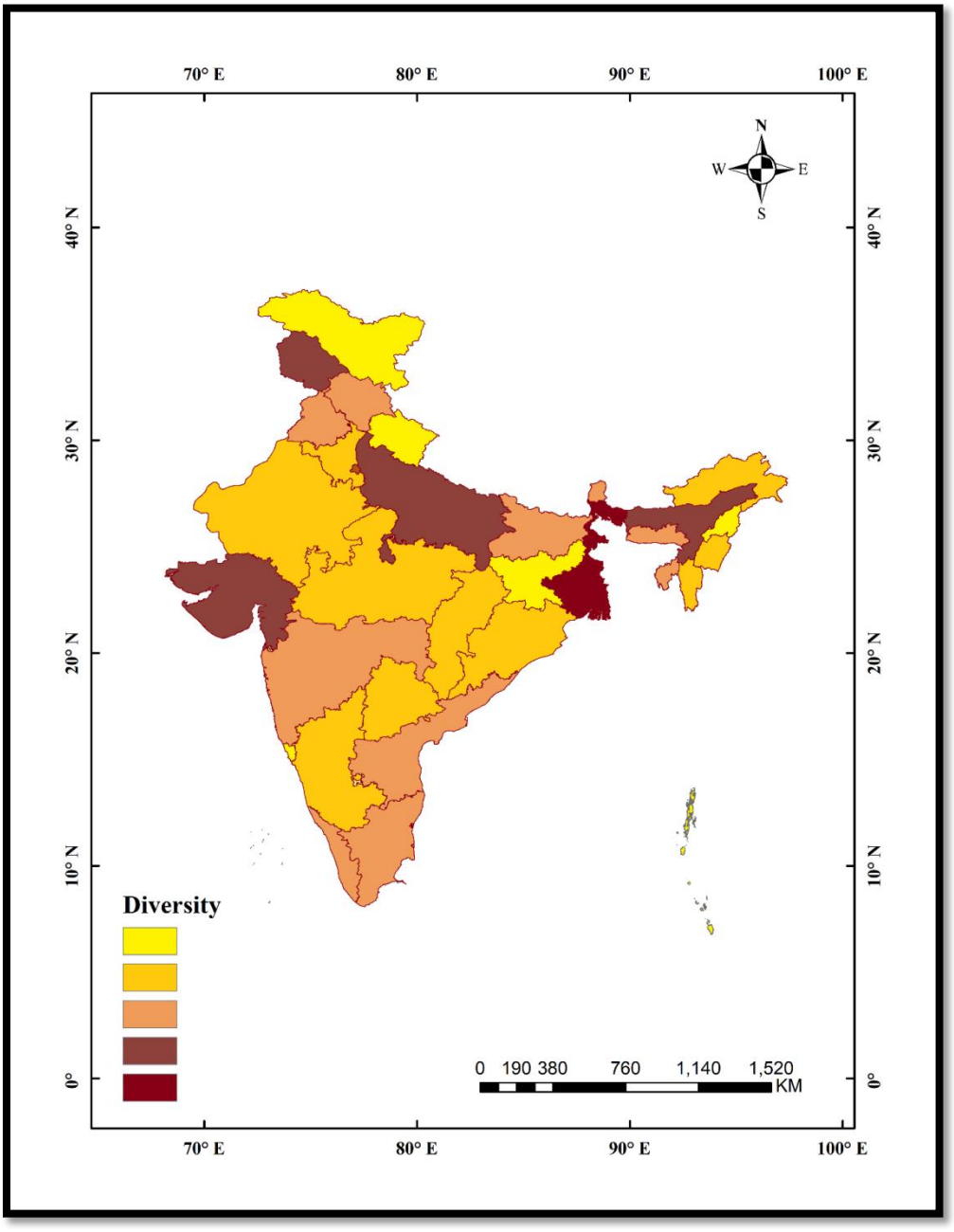

Fig. 1. Study area

4. CONCLUSION

The current study shows that the familes Sarcophagidae, Calliphoridae and Muscidae are the most important necrophagous group followed by families Phoridae, Stratiomyidae, Sphaeroceridae etc. The checklist that is hereby presented can be utilised as an additional resource in criminal investigations and wild life crime in India. This will serve as an introduction to the taxonomic and diversity studies of necrophagous flies on the Indian fauna based on the reported species of different areas. Some species may be present in different parts of India which is the lacunae in views of reported necrophagus flies, that will be nullified by further report of different species from different states of India.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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