

STUDIES ON BLOWFLIES (DIPTERA : CALLIPHORIDAE) OF SIKKIM, INDIA

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INTRODUCTION

Taxonomical studies on blowflies from Sikkim have not so much known. Senior-White *et al.* (1940) reported *Calliphora pattoni* Aubertin, *Calliphora vicina* Robineau - Desvoidy, *Calliphora vomitoria* (Linnaeus), *Stomorphina xanthogaster* (Wiedemann) and *Idiella euidielloides* (Senior - White) from Sikkim. After lapse of over half a century, Kurahashi and Thapa (1994) reported *Melinda scutellata* (Senior - White) from this state. Nandi (1997b, 1997c) recorded and made a short note on importance of this flies. Subsequently, Datta and Parui (in press) recorded three more species from here. The author collected this flies from different parts of Sikkim in 1977 and nineteen species are reported here.

SYSTEMATIC ACCOUNTS

Subfamily : CALLIPHORINAE

Tribe : CALLIPHORINI

1. *Calliphora pattoni* Aubertin

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

Material : 1 ♂, Mangan, 1,189 m, 23.x.1977; 1 ♂, Gangtok Hospital Campus, 1,677 m, 27.x.1977.

Bionomics : This species was collected from bushes and flowering plants and has importance in pollination.

Distribution : Sikkim (Mangan, Gangtok), West Bengal (Darjeeling, Kalighat, Kurseong, Lebong, Rajabhatkhawa), Meghalaya (Shillong); China; Myanmar; Nepal; Taiwan and Thailand.

2. *Calliphora vicina* Robineau - Desvoidy

1830. *Calliphora vicina* Robineau Desvoidy, *Mém. prés. div. Sav. Akad. Sci. Ins. Fr.* (2)2 : 435.

Material 2 ♂♂, Mangan, 1,189 m, 23.x.1977; 1 ♂, Phensang, 1,484 m, 19.x.1977.

Bionomics : This species was collected from garbages, human faeces and decaying fruits and has medical, veterinary and forensic importance.

Distribution Sikkim (Phensang, Mangan, Gangtok), West Bengal (Alipurduar, Birpara, Kalimpong, Kurseong, Rajabhatkhawa), Uttar Pradesh (Nainital), Himachal Pradesh (Shimla); Australia; Canary Islands; China; Eurasia; Hainan Islands; Hawaiian Islands; Japan; Mauritius; Mongolia; Nepal; New Zealand; Pakistan; Saudi Arabia; South Africa and USA.

3. *Calliphora vomitoria* (Linnaeus)

1758. *Musca vomitoria* Linnaeus. *Syst. Nat.*, **10** : 595.

1997. *Calliphora vomitoria* : Nandi, *J. Beng. nat. Hist.-Soc.*, **16(2)** : 66.

Material 1♂, Gazing, 1,686 m, 6.xi.1977; 1♂, Dentam, 1,672 m, 2.xi.1977.

Bionomics This species was collected from garbages and excrement of different animals and has medical and veterinary importance.

Distribution : Sikkim (Dentam, Gazing, Gangtok), Himachal Pradesh (Shimla), West Bengal (Darjeeling), Meghalaya (Jaintia); Bhutal (Phuntsholing); Afghanistan; Australia; Canary Islands; China; Eurasia; Hainan Islands; Hawaiian Islands; Hong Kong; Japan; Korea; Manchuria; Mongolia; Morocco; Nepal; New Zealand; North America; Philippines; Sweden; Taiwan and Thailand.

Tribe BENGALIINI

4. *Bengalia labiata* Robineau - Desvoidy

1830. *Bengalia labiata* Robineau - Desvoidy, *Mém. prés. div. Sav. Akad. Sci. Inst. Fr.*, **(2)2** : 426; James, 1977, *Cat. Dipt. orient. Region*, **3** : 529.

Material : 1♂, Dentam, 1,372 m, 2.xi.1977.

Bionomics This species was collected from termite mound and has been recorded as parasite in ant pupae.

Distribution Sikkim (Dentam) and West Bengal (doubtful).

It is recorded for the first time from Sikkim.

5. *Bengalia surcoufi* Senior-White

1923. *Bengalia surcoufi* Senior-White, *Spolia zeylan.*, **12** : 300.

Material : 2♂♂, Chungthang, 1,647 m, 25.x.1977.

Bionomics : This species was collected from bushes and near decaying leaves on termite mound.

Distribution Sikkim (Chungthang), West Bengal (Mungpoo, Nagrakata, Sukna Forest), Assam (Silchar), Karnataka (Bangalore, Kaimara), Kerala (Cochin), Tamil Nadu (Chennai, Coimbatore, Tranquebar), Uttar Pradesh (Mussoorie, Nainital), Pondichery (Aurovil), Meghalaya (Khasi Hills) and Nepal.

It is recorded for the first time from Sikkim.

6. *Bengalia torosa* (Wiedemann)

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

1994. *Bengalia torosa* Kurahashi and Thapa, *Jap. J. sanit Zool.*, **45** : 219.

Material : 1 ♂, Phensang, 1,484 m, 19.x.1977.

Bionomics : This species was collected from termite mound and it is parasitic on ant pupae.

Distribution : Sikkim (Phensang), West Bengal (Calcutta, Alipurduar, Buxa, Rajabhatkhawa), Tamil Nadu (Tranquebar, Coimbatore), Karnataka (Kaimara), Uttar Pradesh (Mussoorie), Pondichery (Aurovil); Bangladesh; Indonesia; Japan; Malaysia; Nepal; Pakistan; Philippines; Sri Lanka; Taiwan and Thailand.

It is the first report of this fly from Sikkim.

Subfamily : LUCILIINAE

Tribe : LUCILINI

7. *Hemipyrellia ligurriens* (Wiedemann)

1830. *Musca ligurriens* Wiedemann, *Ausser. Europ. Zweifl. Insekt.*, **2** : 655.

1997. *Hemipyrellia ligurriens* : Nandi, *J. Beng. nat. Hist. Soc.*, **16(2)** : 66.

Material : 2 ♂♂, Sikkim, Swistik Camp, 1,650 m, 21.x.1977; 1 ♂, Phensang, 1,484 m, 19.x.1977.

Bionomics : This species was collected from fish market and carcasses of animals and the larvae are parasitic on other animals.

Distribution : Sikkim (Phensang, Swistik), West Bengal (Buxa, Madarihat, Shibpur, Kalyani, Ranaghat, Calcutta), Bihar (Purnea), Tamil Nadu (Chennai); Australia; Amboina; Bangladesh; Bhutan (Phuntsholing); China; Formosa; Indonesia; Japan; Korea; Malaysia; Micronesia; Nepal; New Guinea; New Ireland; New Zealand; Pakistan; Philippines; Somoa; Sri Lanka; Taiwan and Thailand.

This is the first record of this species from Sikkim.

8. *Lucilia illustris* (Meigen)

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

1997. *Lucilia illustris* : Nandi and Bhattacharya, *J. Beng. nat. Hist. Soc.*, **16(2)** : 22.

Material : 2 ♂♂, Jorethang, 305 m, 20.x.1977.

Bionomics : This species was collected from garbages and fruits in the market area and has medical and veterinary importance.

Distribution Sikkim (Jorethang), West Bengal (Calcutta, Darjeeling, Jalpaiguri, Siliguri); Australia; Bhutan (Ha); Europe; Japan; Korea; Manchuria; Myanmar; Siberia and South America.

It is recorded for the first time from Sikkim.

9. *Lucilia porphyria* (Walker)

1856. *Musca porphyria* Walker, *J. Proc. Linn. Soc. Lond. Zool.*, **1** : 24.

1997. *Lucilia porphyria* : Nandi and Bhattacharya, *J. Beng. nat. Hist. Soc.*, **16(2)** : 23.

Material : 1 ♂, Jorethang, 305 m, 20.x.1977.

Bionomics : This species was collected from decaying vegetables and dead bodies of different animals and has medical and veterinary importance.

Distribution : Sikkim (Jorethang), West Bengal (Shibpur Botanical Garden, Ranaghat, Rajabhatkhawa), Assam (Sadiya), Arunachal Pradesh (Pasighat), Himachal Pradesh (Shimla), Kashmir (Gulmarg); Australia; Bhutan (Phuntsholing); Borneo; China; Indonesia; Japan; Korea; Malaysia; Nepal; Papua New Guinea; Philippines; Sri Lanka and Thailand.

Subfamily : CHRYSOMYINAE

Tribe : CHRYSOMYINI

10. *Chrysomya megacephala* (Fabricius)

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

1997. *Chrysomya megacephala* : Nandi and Bhattacharya, *J. Beng. nat. Hist. Soc.*, **16(2)** : 24.

Material : 4 ♂ ♂, Jorethang, 305 m, 20.x.1977.

Bionomics : This species was collected from dead bodies and excreta of many animals, fishes from fish market and meat shop and has importance in medical and veterinary science. It has also been collected from dried fish.

Distribution : Sikkim (Jorethang), West Bengal; Bhutan (Phuntsholing) and almost throughout India.

11. *Chrysomya rufifacies* (Macquart)

1843. *Lucilia rufifacies* Macquart. *Mém. Soc. Sci. Agric. Lille*, **2(3)** : 303.

1997. *Chrysomya rufifacies* : Nandi. *J. Beng. nat. Hist. Soc.*, **16(2)** : 68.

Material : 2 ♂ ♂, Jorethang, 305 m, 20.x.1977.

Bionomics : This species was collected from garbages and dead bodies of different animals and has medical and veterinary importance.

Distribution : Sikkim (Jorethang), West Bengal and almost throughout India.

It is a new record from Sikkim.

Subfamily : MELANOMYINAE

12. *Melinda scutellata* (Senior - White)

1923. *Paradochosia scutellata* Senior - White, *Spolia zeylan.*, **12** : 312.

1997. *Melinda scutellata* : Nandi, 1997, *J. Beng. nat. Hist. Soc.*, **16(2)** : 68.

Material : 1 ♂, Gangtok Hospital Campus 1,677 m, 27.x.1977; 1 ♂, Gazing, 1,586 m, 6.xi.1977.

Bionomics : This species was collected from flowering plants and has importance in pollination.

Distribution : Sikkim (Gangtok, Gazing), West Bengal (Birpara, Mungpoo); Malaysia; Myanmar and Nepal.

Subfamily : POLLENIINAE

Tribe : POLLENIINI

13. *Onesia (Melindopsis) khasiensis* (Senior - White)

1923. *Nitellia khasiensis* Senior - White, *Mém. Dep. Agric. India, Vet. Ser.*, **8** : 51.

1997. *Onesia (Melindopsis) khasiensis* : Nandi, *J. Beng. nat. Hist. Soc.*, **16(2)** : 68.

Material : 2 ♂♂, Kabi Chulung, 1,644 m, 20.x.1977.

Bionomics : This species was collected from bushes and flowering plants and has importance in pollination.

Distribution : Sikkim (Kabi Chulung), West Bengal (Darjeeling), Meghalaya (Shilong); Bangladesh and Malaysia.

This fly is recorded for the first time from Sikkim.

Subfamily : RHINIINAE

Tribe : RHINIINI

14. *Stomorhina discolor* (Fabricius)

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

1997. *Stomorhina discolor* : Nandi, *J. Beng. nat. Hist. Soc.*, **16(2)** : 69.

Material : 1 ♂, Mangan, 1,189 m, 23.x.1977.

Bionomics : This species was collected from flowering plants and has importance in pollination.

Distribution : Sikkim (Mangan), West Bengal (Darjeeling, Sukna Forest), Assam (Dibrugarh); Australia; Bangladesh; Borneo; China; Fiji; Hawaiian Islands; Indonesia; Malaysia; Micronesia; Nepal; New Caledonia; Pakistan; Papua New Guinea; Philippines; Society Islands; Sri Lanka; Taiwan and Thailand.

It is recorded for the first time from Sikkim.

15. *Stomorhina xanthogaster* (Wiedemann)

1820. *Idia xanthogaster* Wiedemann. *New Dipt. Gen.*, 8 : 21.

1994. *Stomorhina xanthogaster* : Kurahashi and Thapa. *Jap. J. sanit. Zool.*, 45 : 250.

Material 1♂, Gangtok, 1,677 m, 27.x.1977.

Bionomics This species was collected from bushes and has importance in pollination.

Distribution : Sikkim (Gangtok), Assam (Mangaldai), Bihar (Katihar, Chota Nagpur, Paresnath Hill), Uttar Pradesh (Nainital), Madhya Pradesh (Bilaspur); Australia; Indonesia; Sri Lanka; Malaysia; Nepal; New Caledonia; Papua New Guinea; Taiwan and Vanuatu.

16. *Rhinia malochi* Senior - White, Aubertin and Smart

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

1997. *Rhinia malochi* : Nandi, *J. Beng. nat. Hist. Soc.*, 16(2) : 70.

Material 1♂, Phensang, 1,484 m, 19.x.1997.

Bionomics This species was collected from bushes and has importance in pollination.

Distribution Sikkim (Phensang) and West Bengal (Calcutta, Kalimpong, Sukna).

It is first recorded from this state.

17. *Isomyia malayensis* (Townsend)

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

1997. *Isomyia malayensis* : Nandi, *J. Beng. nat. Hist. Soc.*, 16(2) : 70.

Material 1♂, Chungthang, 1,647 m, 25.x.1977; 1♂, Gazing, 1,686 m, 6.xi.1977.

Bionomics This species was collected from bushes.

Distribution Sikkim (Chungthang, Gazing), West Bengal (Darjeeling, Lebong); Malaysia and Singapore.

This species is recorded for the first time from Sikkim.

18. *Idiella euidielloides* (Senior - White)

1923. *Idiella euidielloides* Senior White, *Mém. Dép. Agric. India*, 7 : 166.

Material : 1 ♂, Gangtok, 1,677 m, 27.x.1977.

Bionomics : This species was collected from flowering plants and might have importance in pollination.

Distribution : Sikkim (Gangtok), West Bengal (Darjeeling); Philippines and Sri Lanka.

19. *Idiella tripartita* (Bigot)

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

1997. *Idiella tripartita* : Nandi, *J. Beng. nat. Hist. Soc.*, 16(2) : 71.

Material : 1 ♂, Phensang, 1,484 m, 19.x.1977.

Bionomics This species was collected from bushes and the larvae are parasitic on vertebrates and ant pupae.

Distribution : Sikkim (Phensang), West Bengal (Darjeeling); China; Nepal and Philippines.

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SUMMARY

Systematic account of nineteen species of blowflies under eleven genera of which ten species are as new records, are reported from Sikkim, India. Distributional records from India and rest of the world along with short notes on bionomics of all the species are also included.

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