



Rec. zool. Surv. India : 107(Part-2) : 103-112, 2007

BUTTERFLIES OF SUR SAROVAR BIRD SANCTUARY, KEETHAM, AGRA (UTTAR PRADESH, INDIA)

NARENDER SHARMA

Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053

INTRODUCTION

Sur Sarovar Bird Sanctuary is named after the famous poet Surdas. Declared as Bird Sanctuary by the Uttar Pradesh government in 1991, the sanctuary is spread over 713 hectares. A lake having an area of 300 hectares is present in the middle of the sanctuary. The depth of the lake ranges between 5–8 metres. Sur Sarovar Bird Sanctuary is situated on the Agra-Mathura-Delhi National Highway (No. 2), at a distance of 20 kms. from the famous historical city, Agra. This bird sanctuary is situated on the bank of river Yamuna. The sanctuary is located between 77°–26' E to 78°–51' E longitudes and 26°–43' N to 27°–26' N latitudes. The temperature varies from 5°–48°C and the rainfall varies from 517 mm to 750 mm. The sanctuary supports 105 species of birds. The vegetation of this zone comprises of grasses, *Eucalyptus*, *Zizypus*, *Delbergia*, *Lantana* etc.

The butterfly fauna of Uttar Pradesh has been previously studied by Marshall and de Niceville (1882), de Niceville (1886, 1890), Evans (1932), Talbot (1939, 1947) and Wynter-Blyth (1957). A perusal of literature reveals that nothing is known about the insect fauna of the Sur Sarovar Bird Sanctuary, Agra. The present work is an attempt to provide a comprehensive account of Rhopalocera found in the Sanctuary. The article deals with an account of twenty species, thirteen genera and six families *i.e.*, Pieridae, Danaidae, Satyridae, Nymphalidae, Lycaenidae and Hesperidae, of which first five belong to superfamily Papilionoidea and last to the superfamily Hesperioidea. All the species dealt with this account are reported for the first time from this Sanctuary.

SYSTEMATIC ACCOUNT

Phylum ARTHROPODA

Class INSECTA

Order LEPIDOPTERA

Suborder RHOPALOCERA

Family 1. PIERIDAE

Genus 1. *Cepora* Billberg, 18201. *Cepora nerissa phryne* (Fabricius)

1775. *Papilio phryne* Fabricius, *Syst. Ent.*, : 473.

1939. *Cepora nerissa phryne* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 362.

Common name : The Common Gull.

Material examined : 3 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 2 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Assam; Bihar; Sikkim; Madhya Pradesh; Maharashtra; Tamil Nadu; North-West Himalayas.

Elsewhere : Nepal.

Genus 2. *Catopsilia* Huebner, 18192. *Catopsilia pomona* (Fabricius)

1775. *Papilio pomona*, Fabricius, *Syst. Ent.*, : 479.

1939. *Catopsilia pomona* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 493.

1993. *Catopsilia crocale* : Varshney, *Oriental Ins.*, **27** : 362.

Common name : The Lemon Emigrant.

Material examined : 2 exs., Near Entry Gate, 3 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Andaman and Nicobar; Delhi; Bihar; Maharashtra; Tamil Nadu; West Bengal; North-West Himalayas.

Elsewhere : Sri Lanka; Pakistan; Myanmar; South China; Australia

3. *Catopsilia pyranthe pyranthe* (Linnaeus)

1775. *Papilio pyranthe*, Linnaeus, *Syst. Nat.* (ed. 10), : 469.

1939. *Catopsilia pyranthe pyranthe* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 497.

Common name : The Mottled Emigrant.

Material examined : 3 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 1 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Andamans; Assam; Gujarat; Tamil Nadu; West Bengal; North-West Himalayas.

Elsewhere : South China; Burma; Java; Sulawesi; Philippines; Sri Lanka; Pakistan.

Genus 3. ***Eurema*** Huebner, 1819

4. ***Eurema hecabe fimbriata*** (Wallace)

1867. *Terias fimbriata* Wallace, *Trans. Ent. Soc. Lond.*, **4** : 323.

1939. *Eurema hecabe fimbriata* : Talbot, *The Fauna of Brit. India, Butterflies*, **1** : 531-532.

1993. *Terias hecabe* : Varshney, *Oriental Ins.*, **27** : 363.

Common name : The Common Grass Yellow.

Material examined : 5 exs., Near Entry Gate, 4 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 5 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Bihar; Assam; Delhi; Himachal Pradesh; Maharashtra; Karnataka; Tamil Nadu; West Bengal; Lakshadweep.

Elsewhere : Sri Lanka.

Genus 4. ***Ixias*** Huebner, 1819

5. ***Ixias pyrene kausala*** Moore

1877. *Ixias kausala* Moore, *Ann. Mag. Nat. Hist.*, (4)**20** : 49.

1939. *Ixias pyrene kausala* : Talbot, *The Fauna of Brit. India, Butterflies*, **1** : 446.

Common name : The Yellow Orangetip.

Material examined : 4 exs., Near Entry Gate, 3 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 6 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Punjab; Kumaon; Uttar Pradesh; Sikkim; Assam; Peninsular India to Bengal; Andaman Islands.

Elsewhere : Japan; Formosa to China; Malaya peninsula; Sri Lanka; Myanmar; Pakistan.

Genus 5. ***Colotis*** Huebner, 1819

6. ***Colotis fausta faustina*** (C. & R. Felder)

1865. *Idmais faustina*, C. & R. Felder, *Reise Novara, Lep.*, **2** : 190.

1939. *Colotis fausta faustina* : Talbot, *The Fauna of Brit. India, Butterflies*, **1** : 462.

Common name : The Large Salmon Arab.

Material examined : 3 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 4 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Delhi; Uttar Pradesh; throughout the Peninsula.

Elsewhere : Afghanistan; Pakistan; Sri Lanka; Turkry; Egypt; Iran; Palestine to Arabia; Egypt.

7. *Colotis etrida etrida* (Boisduval)

1836. *Anthocharis etrida* Boisduval, *Spec. Gen. Lep.*, **1** : 576.

1939. *Colotis etrida etrida* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 465.

Common name : The Little Orange Tip.

Material examined : 5 exs., Near Entry Gate, 3 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 5 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Delhi; Uttar Pradesh; Peninsular India to Himalayas.

Elsewhere : Pakistan; Sri Lanka.

8. *Colotis calais amata* (Fabricius)

1775. *Papilio amata* Fabricius, *Syst. Ent.*, : 476.

1939. *Colotis calais amata* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 454-455.

Common name : The Small Salmon Arab.

Material examined : 2 exs., Near Entry Gate, 1 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 1 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Delhi; Uttar Pradesh; North-West to Peninsula.

Elsewhere : Ethiopia; Syria to Iran; Arabia; Pakistan; Sri Lanka.

9. *Colotis vestalis vestalis* (Butler)

1876. *Teracolus vestalis* Butler, *Ent. Mo. Mag.*, **23** : 135.

1939. *Colotis vestalis vestalis* : Talbot, *The Fauna of Brit. India*, Butterflies, **1** : 457-459.

Common name : The White Arab.

Material examined : 1 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 1 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Punjab; Uttar Pradesh; North-West India.

Elsewhere : Kenya to Abyssinia; Pakistan.

Family 2. SATYRIDAE

Genus 6. *Ypthima* Huebner, 1818,

10. *Ypthima inica* Hewitson

1865. *Ypthima inica* Hewitson, *Trans. Ent. Soc. Lond.*, (3)**2** : 284.

1994. *Ypthima inica* : Varshney, *Oriental Ins.*, **28** : 159.

Common name : The Lesser Three Ring.

Material examined : 6 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Central India; Punjab; West Bengal.

Family 3. NYMPHALIDAE

Genus 7. *Junonia* Huebner, 1819

11. *Junonia almana almana* (Linnaeus)

1758. *Papilio almana* Linnaeus, *Syst. Nat.* (ed. 10) : 472.

1987. *Precis almana almana* : Gupta & Shukla, *Rec. zool. Surv. India, Occ. Pap. No. 106* : 35.

1994. *Junonia almana* : Varshney, *Oriental Ins.*, **28** : 176.

Common name : The Peacock Pansy.

Material examined : 2 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Bihar; Delhi; West Bengal; Orissa; Punjab; Andamans (Widely distributed throughout India excluding Car Nicobar).

Elsewhere : Sri Lanka; Myanmar

12. *Junonia orithya swinhoe* Butler

1885. *Junonia swinhoe*, Butler, *Ann. Mag. nat. Hist.*, 5(16) : 316.

1987. *Junonia orithya swinhoe* : Gupta & Shukla, *Rec. zool. Surv. India, Occ. Pap. No. 106* : 33.

1994. *Junonia orithya* : Varshney, *Oriental Ins.*, **28** : 176.

Common name : The Blue Pansy.

Material examined : 3 exs., Near Entry Gate, 1 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Punjab; Bihar; Delhi; Himachal Pradesh; Orissa; South India.

Elsewhere : Sri Lanka; Baluchistan; Pakistan; Myanmar.

13. *Junonia lemonias persicaria* (Fruhstorfer)

1912. *Precis persicaria* Fruhstorfer, In Seitz; *The Macrolepidoptera of the World*, **9** : 520.

1932. *Precis lemonias persicaria* : Evans, *The identification of Indian Butterflies* : 176.

1994. *Junonia lemonias* : Varshney, *Oriental Ins.*, **28** : 176.

Common name : The Lemon Pansy.

Material examined : 3 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 2 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Bihar; Himachal Pradesh; Orissa; South India.

Elsewhere : Sri Lanka.

Genus 8. *Hypolimnas* Huebner, 1819

14. *Hypolimnas missippus* (Linnaeus)

1764. *Papilio misippus* Linnaeus, *Mus. Ulr.*, : 264.

1932. *Hypolimnas misippus* : Evans, *The Identification of Indian Butterflies* : 173.

1994. *Hypolimnas misippus* : Varshney, *Oriental Ins.*, **28** : 177.

Common name : The Danaid Eggfly.

Material examined : 4 exs., Near Entry Gate, 1 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 2 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Punjab; Bihar; Delhi; Orissa; Arunachal Pradesh; Sikkim : Tamil Nadu; Andaman and Nicobar; West Bengal.

Elsewhere : Pakistan; Myanmar; Sri Lanka

Family DANAIDAE

Genus 9. *Danaus* Kluk, 1780

15. *Danaus chrysippus chrysippus* (Linnaeus)

1758. *Papilio chrysippus* Linnaeus, *Syst. Nat.* (ed. 10) **1** : 471.

1947. *Danaus chrysippus chrysippus* : Talbot, *The Fauna of Brit. India, Butterflies*, **2** : 20

Common name : The Plain Tiger.

Material examined : 10 exs., Near Entry Gate, 4 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 5 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Punjab; Bihar; Delhi; Orissa; Manipur; Sikkim; Gujrat; Maharashtra; Tamil Nadu; Himachal Pradesh; Andaman and Nicobar; West Bengal.

Elsewhere : Nepal; Pakistan; Bhutan; Sri Lanka; Myanmar; Indonesia; China.

16. *Danaus genutia* (Cramer)

1779. *Papilio genutia* Cramer, *Pap. Exot.*, 3 : 23.

1947. *Danaus plexippus plexippus* : Talbot, *The Fauna of Brit. India, Butterflies*, 2 : 25.

1987. *Danaus genutia* : Gupta & Shukla, *Rec. zool. Surv. India, Occ. Pap. No. 106* : 17.

Common name : The Common Tiger.

Material examined : 2 exs., Near Entry Gate, 1 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 1 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Assam; Bihar; Delhi; Orissa; Punjab; Manipur; Mizoram; Sikkim; Nagaland; Rajasthan; Tamil Nadu; Arunachal Pradesh; Karnataka; Himachal Pradesh; Andaman and Nicobar; West Bengal.

Elsewhere : Thailand; Nepal; Pakistan; Afghanistan; Bhutan; Sri Lanka; Myanmar; South China.

Genus 10. *Tirumala* Moore, 1880

17. *Tirumala limniace leopardus* (Butler)

1866. *Danaus limniace* var. *leopardus* Butler, *Proc. zool. Soc. Lond.*, : 52.

1947. *Danaus limniace leopardus* : Talbot, *The Fauna of Brit. India, Butterflies*, 2 : 31.

1991. *Tirumala limniace leopardus* : Mandal & Maulik, *State Fauna Series 3 : Fauna of Orissa, Part-3, Zool. Surv. India* : 235.

Common name : The Blue Tiger.

Material examined : 2 exs., Near Entry Gate, 4.ix.2005, Coll. N. Sharma; 1 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Assam; Bihar; Delhi; Orissa; Punjab; Uttaranchal; Manipur; Sikkim; Nagaland; Tamil Nadu; Karnataka; Himachal Pradesh; Andaman and Nicobar; West Bengal.

Elsewhere : Thailand; Nepal; Pakistan; Afghanistan; Sri Lanka; Myanmar; South China

Genus 11. *Euploea* Fabricius 1807

18. *Euploea core core* (Cramer)

1780. *Papilio core* Cramer. *Pap. Exot.*, 3 : 133.

1947. *Euploea core core* : Talbot, *The Fauna of Brit. India, Butterflies*, 2 : 67.

Common name : The Common Crow.

Material examined : 2 exs., Near Entry Gate, 1 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 2 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Uttar Pradesh; Madhya Pradesh; Bihar; Delhi; Orissa; Sikkim; Uttaranchal; Tamil Nadu; Karnataka; Himachal Pradesh; Andaman and Nicobar; West Bengal.

Elsewhere : Northern Myanmar; Sri Lanka; Nepal; Pakistan.

Family LYCAENIDAE

Genus 12. **Tarucus** Moore, 1881

19. **Tarucus callinara** Butler

1886. *Tarucus callinara* Butler, *Ann. Mag. Nat. Hist. Lond.*, (5)18 : 185.

1907. *Tarucus theophrastus* : Bingham, *The Fauna of British India (Butterflies)*, 2 : 417.

1962. *Tarucus callinara* : Cantile, the Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' *The Identification of Indian Butterflies*, 1932 : 33.

Common name : The Spotted Pierrot.

Material examined : 4 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Punjab to Bengal; Uttar Pradesh.

Elsewhere : Pakistan; Myanmar.

Family HESPERIIDAE

Genus 13. **Caltoris** Swinhoe, 1893

20. **Caltoris cahira** (Moore)

1877. *Parnara cahira* Moore, *Proc. zool. Soc. Lond.*, : 593.

1949. *Caltoris cahira* : Evans, *A Catalogue of the Hesperiidae from Europe, Asia and Australia in Brit. Mus. (nat. Hist)* : 452.

Common name : The Colon Swift.

Material examined : 4 exs., Near Entry Gate, 2 exs., Near Keetham Lake, 4.ix.2005, Coll. N. Sharma; 3 exs., 5.ix.2005, Surdas House, Coll. N. Sharma.

Distribution : India : Sikkim; Assam; West Bengal; Meghalaya; Manipur; Andaman and Nicobar.

Elsewhere : Pakistan; Myanmar.

SUMMARY

Twenty species and subspecies of butterflies representing thirteen genera and six families are reported for the first time from Sur Sarovar Bird Sanctuary, Agra, Uttar Pradesh.

ACKNOWLEDGEMENT

The author is grateful to Dr. J.R.B. Alfred, Director, Zoological Survey of India, Kolkata and Dr. A.K. Hazra, Head, Division of Entomology A & B, Zoological Survey of India, Kolkata for providing facilities and encouragement. Thanks are also due to Mr. Ashok Sharma, Range Officer, Sur Sarovar Bird Sanctuary, Agra for facilities extended during the survey work.

REFERENCES

- Bingham, C.T. 1907. *The Fauna of British India including Ceylon and Burma, Butterflies*, 2 : viii+480 pp.
- Cantlie, K. 1962. The Lycaenidae portion (except the Arhopala Group) of Brigadier Evans' *The Identification of Indian Butterflies*, 1932 : vi + 156pp., index 12 pp., 5pls. (Published by The Bombay Natural History Society, Bombay).
- De Niceville, L. 1886. *The butterflies of India, Burmah and Ceylon*, Vol. 2. Reprinted by A. J. Reprints Agency, New Delhi : 332 pp.
- De Niceville, L. 1890. *The butterflies of India, Burmah and Ceylon*, Vol. 3. Reprinted by A. J. Reprints Agency, New Delhi : 503 pp.
- Evans, W.H. 1932. *The Identification of Indian Butterflies*, 2nd ed. Bombay Natural History Society, Bombay : 454 pp.
- Evans, W.H. 1949. *A Catalogue of the Hesperidae from Europe, Asia and Australia in Brit. Mus. (nat. Hist)*, London, XIX + 502 pp., 53 pls.
- Gupta, I.J. and Shukla, J.P.N. 1987. Butterflies from Bastar district (Madhya Pradesh). *Rec. zool. Surv. India*, Occ. Pap. No. **106** : 74 pp.
- Mandal, D.K. and Maulik, D.R. 1991. Insecta : Lepidoptera : Rhopalocera : Nymphalidae : Danainae. *Fauna of Orissa; State Fauna Series, I (Part-3)* : 235-238 *Zool. Surv. India*.
- Marshall, G.F.L. and De Niceville, E.L. 1882. *The butterflies of India, Burmah and Ceylon*, Vol. 1. Reprinted by A. J. Reprints Agency, New Delhi : 327 pp.
- Talbot, G. 1939. *The Fauna of British India including Ceylon and Burma. Butterflies Vol. 1.* Taylor and Francis, London.
- Talbot, G. 1947. *The Fauna of British India including Ceylon and Burma. Butterflies Vol. 2.* Taylor and Francis, London, 506pp.
- Varshney, R.K. 1993. Index Rhopalocera indica, Part III, Genera of Butterflies from India and neighboring countries (Lepidoptera) : (A) Papilionidae, Pieridae and Danaidae. *Oriental Ins.*, **27** : 347-372.

Varshney, R.K. 1994. Index Rhopalocera indica, Part III, Genera of Butterflies from India and neighboring countries (Lepidoptera) : (B) Satyridae, Nymphalidae, Libythidae and Riodinidae. *Oriental Ins.*, **28** : 151-198.

Wynter-Blyth, M.A. 1957. *Butterflies of the Indian region*. *Bombay nat. Hist.Soc.*, 1957 : xx + 523 pp, 72 pls.