

NEUROPTERA FROM WESTERN PENINSULAR INDIA
WITH NEW RECORDS

By

S. K. GHOSH

Zoological Survey of India, Calcutta.

INTRODUCTION

While sorting out the material of Neuroptera in the National Collections at Zoological Survey of India from certain areas of interest, the author has come across certain lots of them at his disposal. The specimens, which have been authentically studied, are distributed over 20 species including two indetermined ones in 5 families under the suborder Planipennia from Gujarat, Maharashtra and Goa along the Western Ghat of the Indian Peninsula. Majority of the elements are not hitherto known either from Gujarat or Goa, though quite a many were earlier reported on several explorations from Maharashtra by different taxonomists, as cited in the paper.

At present, an attempt has been made just to incorporate in the paper a list of 20 species actually examined along with their current references, detailed localities of distribution particularly in India and also several new locality records including 5 for Maharashtra and one for Goa. In view of rendering the list in its up-to-date form as much consolidated as possible, 37 other species, which are so far known from any of the areas concerned but not presently seen therefrom, have further been appended from literature. A summary has also been incorporated at the end.

Family OSMYLIDAE

Subfamily SPILOSMYLINAE

1. *Spilosmylus tuberculatus* (Walker)

Spilosmylus tuberculatus (Walker), Nakahara, 1911, *Annotnes Zool. jap.*, 8 : 502.

Material examined : 1 ex., India, : Maharashtra, Satara, Ambenali near Pratapgad, 30. v. 1980 (B. K. Tikader coll.).

Distribution : INDIA (Assam, Maharashtra and Andaman Island).
JAPAN. MALAYA. TAIWAN.

Remarks : Ghosh (1978) recorded the species from Maharashtra.

Family HEMEROBIIDAE

Subfamily HEMEROBIINAE

2. *Mixomicromus lampus* Ghosh

Mixomicromus lampus Ghosh, 1977, *Proc. Indian Acad. Sci.*, **86** (B) : 235, 10 figs.

Material examined : 5 exs., India : Maharashtra, Pune, Model colony, Sreeram lodge, 29. ix. 1976 (*R. H. Kamble* coll.).

Distribution : INDIA : Maharashtra.

Family CHRYSOPIDAE

Subfamily CHRYSOPINAE

3. *Chrysopa (Chrysoperla) gujaratensis* Ghosh

Chrysopa (Chrysoperla) gujaratensis Ghosh, 1976, *Ent. Scand.*, **7** : 74, 2 figs.

Material examined : 1 ex., India : Gujarat, Dwarka, east of Rly. stn., 2. xi. 1979 (*S. K. Gupta* coll.).

Distribution : INDIA : Gujarat.

4. *Chrysopa (Chrysoperla) sanandensis* Ghosh

Chrysopa (Chrysoperla) sanandensis Ghosh, 1977, *Entomon.*, **2** (no. 1) : 103, 7 figs.

Material examined : 1 ex., India : Gujarat, Sanand, Dadagram, 8. xii. 1973 ; 3 exs., Sanand, 3-8. xii. 1973 ; Ahmedabad, Sabarmati, 7. xii. 1973 (*S. K. Gupta* coll.).

Distribution : INDIA : Gujarat.

5. *Chrysopa (Chrysoperla) punensis* Ghosh

Chrysopa (Chrysoperla) punensis Ghosh, 1976, *Entomon*, **1** (no. 2) : 189, 8 figs.

Material examined : 10 exs., India : Maharashtra, Poona, Khed, 3. vii. 1976 (*S. K. Ghosh* coll.).

Distribution : INDIA : Maharashtra.

6. *Chrysopa* sp.

Material examined : 1 ex., India : Maharashtra, Poona, Vishrantwadi, 31. i. 1977 (*S. K. Ghosh* coll.).

Family MYRMELEONTIDAE

Subfamily PALPARINAE

7. *Stenares improbus* (Walker)

Stenares improbus (Walker), MacLachlan, *J. Linn. Soc.*, **9** : 276.

Material examined : 1 ex., India : Maharashtra, Satara, Yenna valley, Medha, 23. iv. 1912 (*F. H. Gravely* coll.).

Distribution : INDIA (North India, Maharashtra and Karnataka).
SRI LANKA.

Remark : The species is a new record for Maharashtra.

8. *Palpares contrarius* (Walker)

Palpares contrarius (Walker), MacLachlan, 1868, *J. Linn. Soc.*, 9 : 274.

Material examined : 2 exs., India : Maharashtra, Satara, Koyna valley, Helvok, 20-30. iv. 1912 (*F. H. Gravely* coll.).

Distribution : INDIA (Orissa, Maharashtra and Karnataka). SRI LANKA.

9. *Palpares pardus* (Rambur)

Palpares pardus (Rambur), MacLachlan, 1868, *J. Linn. Soc.*, 9 : 275.

Material examined : 1 ex., India : Goa, 5 Km. South of Molem, 25. xi. 1966 (*K. S. Pradhan* coll.) ; 4 exs., Maharashtra (Western Ghat Survey, 1965), 31.x.-5.xi. 1965 (*T. G. Vazirani* coll.).

Distribution : INDIA : Sikkim ; North India ; West Bengal ; Orissa ; South India ; Maharashtra ; Goa and Rajasthan.

Subfamily ECHTHROMYRMICINAE

10. *Echthromyrmex orientalis* MacLachlan

Echthromyrmex orientalis MacLachlan, 1873, *Annls Soc. ent. Belg.*, 16 : 143.

Material examined : 1 ex., India : Goa, Margao, Fatorda, 2. iv. 1966 (*K. S. Pradhan* coll.).

Distribution : INDIA : Orissa and Goa.

Subfamily MYRMELEONTINAE

11. *Nesoleon perpunctatus* Banks

Nesoleon perpunctatus Banks, 1931, *Psyche*, 38 : 60.

Material examined : 3 exs., India : Maharashtra, Khandala, 11.xi. 1963 ; 1 ex., Kanta village, 5.xi.1963 (*B. K. Tikader* coll.).

Distribution : INDIA : Maharashtra and Andhra Pradesh.

Remark : The species is a new record for Maharashtra.

12. *Myrmeleon tenuipennis* Rambur

Myrmeleon tenuipennis Rambur, 1842, *Hist. nat. Ins. Neur.*, 405.

Material examined : 2 exs., India : Maharashtra, Pune, Mukundnagar, 12.i.1977, 22.x.1977 (*B. K. Tikader* coll.).

Distribution : INDIA : North India and Maharashtra.

13. *Neuroleon guernii* Navas

Neuroleon guernii Navas, 1914, *Russk. ent. Obozr.*, **14** : 319.

Material examined : 1 ex., India : Goa, Fatorda, 11.iv.1966 (K. S. Pradhan coll.).

Distribution : INDIA (Rajasthan ; Maharashtra and Goa). SRI LANKA.

Remark : The species is a new record for Goa.

14. *Distoleon audax* (Walker)

Distoleon audax (Walker), Ghosh, 1980, *Rec. zool. Surv. India*, **77** : 253.

Material examined : 1 ex., India : Maharashtra, Ambenali, 24.iv.1977 (S. K. Ghosh coll.) ; 1 ex., Pune, Nekhanalla, 21.ii.1973 (M. B. Rao coll.).

Distribution : INDIA (Maharashtra, Andaman & Nicobar Islands). SRI LANKA. CHINA. JAPAN. INSULINDE (Malayan and Papuan Archipelago). AUSTRALIA.

Remark : The species is a new record for Maharashtra.

15. *Formicaleon verendus* (Walker)

Formicaleon verendus (Walker), Ghosh & Sen 1977, *Rec. zool. Surv. India*, **73** : 306.

Material examined : 2 exs., India : Maharashtra, Pune, behind Law College, 26. iii. 1976 (B. K. Tikader coll.).

Distribution : INDIA : Orissa, North India, Maharashtra and Himachal Pradesh.

Remark : The species is a new record for Maharashtra. Holzel (1972) synonymised the genus *Formicaleon* Banks under the genus *Distoleon* Banks. So, the species should be considered under the latter genus.

16. *Creoleon griseus* (Klug)

Creoleon griseus (Klug), Holzel, 1972, *Beitr. naturk. Forsch. SudwDtl.*, **1** : 61.

Material examined : 1 ex., India : Maharashtra, Pune, Wanvadi, 27. v. 1977 (G. M. Yazdani coll.).

Distribution : INDIA (West Bengal, Bihar, Orissa, Tamil Nadu, Maharashtra and Rajasthan). SUDAN. EGYPT. ISRAEL. IRAN.

Family ASCALAPHIDAE

Subfamily SCHIZOPHTHALMINAE

17. *Pseudoptynx furcifer* Weele

Pseudoptynx furcifer Weele, 1908, *Cat. Coll. Selys*, 8 : 209.

Material examined : 1 ex., India : Maharashtra, Mahabaleswar, Ambenali rest house, 27. iv. 1977 (*S. K. Ghosh* coll.).

Distribution : INDIA : Maharashtra.

18. *Pseudoptynx* sp.

Material examined : 1 ex., India : Maharashtra, Igatpuri, 23.iii. 1910 (coll. nil).

19. *Glyptobasis dentifera* (Westwood)

Glyptobasis dentifera (Westwood), MacLachlan, 1871, *J. Linn. Soc.*, 11 : 278.

Material examined : 3 exs., India : Goa, Marmugao, 1.x.1916 (*S. W. Kemp* coll.).

Distribution : INDIA : West Bengal, Orissa, South India, Maharashtra, Goa and Uttar Pradesh.

20. *Suphalomitus verbosus* (Walker)

Suphalomitus verbosus (Walker), Weele, 1908, *Cat. coll. Selys*, 8 : 183.

Material examined : 1 ex., India : Maharashtra, Goa, Punjim, Mangeshi, 27.iii.1966 (*K. S. Pradhan* coll.).

Distribution : INDIA (West Bengal, Assam, Maharashtra and Karnataka). SRI LANKA.

Remark : The species is a new record for Maharashtra.

APPENDIX TO THE LIST OF SPECIES

Family CONIOPTERYGIDAE

Subfamily ALEUROPTERYGINAE

1. *Heteroconis terminalis* (Banks)

Heteroconis terminalis (Banks), Meinander, 1972, *Acta zool. fenn.*, 136 : 90.

Distribution : INDIA : Maharashtra (Bombay).

2. *Spiloconis cerata* (Hagen)

Spiloconis cerata (Hagen), Meinander, 1972, *Acta zool. fenn.*, 136 : 139.

Distribution : INDIA (Maharashtra). SRI LANKA.

Family BERTHIDAE

3. **Lekrugeria lineata** Navas

Lekrugeria lineata Navas, 1929, *Mems. Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 2 : 41, fig. 49.

Distribution : INDIA : Maharashtra and South India.

Family MANTISPIDAE

Subfamily MANTISPINAE

4. **Mantispilla salana** Navas

Mantispilla salana Navas, 1930, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 13 : 89.

Distribution : INDIA : Maharashtra.

Family SISYRIDAE

Subfamily SISYRINAE

5. **Sisyra aguavivai** Navas

Sisyra aguavivai Navas, 1929, *Memorie Accad. pont. Nuovi Lincei*, (2) 12 : 52.

Distribution : INDIA : Maharashtra.

Family HEMEROBIIDAE

Subfamily HEMEROBIINAE

6. **Micromus benardi** Navas

Micromus benardi Navas, 1912, *Insectes Neuropteros nuevos Verh. intern. Zool. Kongr.*, 8 : 750.

Distribution : INDIA : Maharashtra.

7. **Micromus umbrosus** Navas

Micromus umbrosus Navas, 1931, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 14 : 87.

Distribution : INDIA : Maharashtra (Bandra).

Family CHRYSOPIDAE

Subfamily CHRYSOPINAE

8. **Chrysopa bertrani** Navas

Chrysopa bertrani Navas, 1931, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 14 : 83.

Distribution : INDIA : Maharashtra.

9. **Cintameva glorisa** Navas

Cintameva glorisa Navas, 1930, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 13 : 85.

Distribution : INDIA : Maharashtra (Bandra).

Remarks : Tjeder (1966) synonymised the genus *Cintameva* Navas with *Chrysopa* Leach. Hence, *glorisa* Navas should be treated under the latter genus.

10. **Chrysopa herasina** Navas

Chrysopa herasina Navas, 1928, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 12 : 192.

Distribution : INDIA : Maharashtra.

11. **Chrysopa ignita** Navas

Chrysopa ignita Navas, 1910, *Russk. ent. Obozr.*, 10 : 192.

Distribution : INDIA : Maharashtra (Matheran).

12. **Chrysopa khandalensis** Navas

Chrysopa khandalensis Navas, 1932, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 15 : 16.

Distribution : INDIA : Maharashtra (Khandala).

13. **Chrysopa khandalina** Navas

Chrysopa khandalina Navas, 1931, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 14 : 84.

Distribution : INDIA : Maharashtra (Khandala).

14. **Chrysopa rocasolanai** Navas

Chrysopa rocasolanai Navas, 1928, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 12 : 193.

Distribution : INDIA : Maharashtra.

15. **Chrysopa smitzi** Navas

Chrysopa smitzi Navas, 1913, *Russk. ent. Obozr.*, 13 : 426.

Distribution : INDIA : Maharashtra (Bombay) and Karnataka.

16. **Chrysopa villalongae** Navas

Chrysopa villalongae Navas, 1935, *Mems. R. Acad. Cienc. Artes Barcelona*, (9) 25 : 56.

Distribution : INDIA : Maharashtra (Bombay).

17. *Ankylopteryx octopunctata* var. *salai* Navas

Ankylopteryx octopunctata var. *salai* Navas, 1929, *Memorie Accad. pont. Nuovi Lincei*, (2) **14** : 424.

Distribution : INDIA : Maharashtra.

Family MYRMELEONTIDAE

Subfamily PALPARINAE

18. *Palpares pardus asanai* Kuwayama

Palpares pardus asanai Kuwayama, 1933, *Proc. imp. Acad. Japan*, **9** : 446.

Distribution : INDIA : Maharashtra (Bombay).

19. *Palpares pardus partitus* Banks

Palpares pardus partitus Banks, 1911, *Proc. ent. Soc. Wash.*, **13** : 100.

Distribution : INDIA : Maharashtra (Bombay).

Subfamily MYRMELEONTINAE

20. *Centroclisis lutea* Navas

Centroclisis lutea Navas, 1912, *Broteria (Zool.)*, **10** : 42.

Distribution : INDIA : Maharashtra (Bombay).

21. *Cueta levis* Navas

Cueta levis Navas, 1931, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, **14** : 79.

Distribution : INDIA : Maharashtra and Andhra Pradesh (Hyderabad).

22. *Cueta salai* Navas

Cueta salai Navas, 1928, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, **12** : 185.

Distribution : INDIA : Maharashtra (Khandala).

23. *Myrmeleon angusticollis* Rambur

Myrmeleon angusticollis Rambur, 1842, *Hist. nat. ins. Neur.*, p. 399.

Distribution : INDIA : Maharashtra.

***24. *Grocus* (nec *Crocus*) *frontalis*, Castellarnau**

Grocus frontalis, Castellarnau, 1946, *Broteria*, (Ciencias naturais), **15** : 122.

Distribution : INDIA : Maharashtra.

*Original reference not traceable.

25. Myrmeleon (Morter) fulvescens Navas

Myrmeleon (Morter) fulvescens Navas, 1934, *Memorie Accad. pont. Nuovi Lincei*, (3) 1 : 220.

Distribution : INDIA : Maharashtra.

26. Myrmeleon (Morter) hyalinus Olivier

Myrmeleon hyalinus Olivier, *Encycl. Meth.*, 8 : 126.

Myrmeleon (Morter) hyalinus, Holzel, 1972, *Beitr. naturk. Forsch. Südw.Dtl.*, 1 : 37.

Distribution : INDIA : (Gujarat). NORTH AFRICA. IRAN. AFGHANISTAN. SOUTH-EAST EUROPE.

27. Balaga pupillatus Navas

Balaga pupillatus Navas, 1930, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 13 : 36.

Distribution : INDIA : Maharashtra (Khandala).

Remarks : Markl (1954) synonymised the genus *Balaga* Navas with *Hagenomyia* Banks. So, the species *pupillatus* Navas should be considered as *Hagenomyia pupillatus* (Navas).

28. Nelees reticulatus Navas

Nelees reticulatus Navas, 1930, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 13 : 40.

Distribution : INDIA : Maharashtra (Khandala).

Remarks : Holzel (1972) synonymised the genus *Nelees* Navas with *Neuroleon* Navas. So, all the species including the present one should be considered under the latter genus.

29. Nelees roscidus Navas

Nelees roscidus Navas, 1937, *C. R. Congr. int. zool.*, 12 : 1476.

Distribution : INDIA : Maharashtra (Khandala).

Remarks : *Vide Supra.*

30. Distoleon substigmalis Navas

Distoleon substigmalis Navas, 1921, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 12 : 191.

Distribution : INDIA : West Bengal and Maharashtra.

31. Banyutus indicus Navas

Banyutus indicus Navas, 1929, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 12 : 189.

Distribution : INDIA : Maharashtra (Khandala).

32. *Hyloleon rhodocerus* Navas

Hyloleon rhodocerus Navas, 1929, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 12 : 189.

Distribution : INDIA : Maharashtra (Khandala).

33. *Creagris fulvinarvis* Navas

Creagris fulvinarvis Navas, 1932, *Revta Acad. Cienc. exact. fis.-quim. nat. Zaragoza*, 15 : 14.

Distribution . INDIA : Maharashtra (Bombay).

Remarks : Markl (1954) synonymised the genus *Creagris* Hagen with *Creoleon* Tillyard. So, the species *fulvinarvis* Navas should now be considered as *Creoleon fulvinarvis* Navas.

34. *Creoleon lugdunensis* (Villers)

Creoleon lugdunensis (Villers), Holzel, 1972, *Beitr. naturk. Forsch. SüdwDtl.*, 1 : 60.

Distribution : INDIA : Maharashtra (Bandra). NORTH AFRICA. ANATOLIA. IRAN. AFGHANISTAN. KAZASTHAN. SOUTH-EAST EUROPE.

Family ASCALAPHIDAE

Subfamily SCHIZOPHTHALMINAE

35. *Ogcogaster segmentator* (Westwood)

Ogcogaster segmentator (Westwood), MacLachlan, 1871, *J. Linn. Soc.*, 11 : 265.

Distribution : INDIA : Western Himalayas including Himachal Pradesh and Kashmir, Maharashtra and Karnataka.

Remark : Ghosh (1977) recorded the species from Himachal Pradesh.

36. *Ogcogaster tesselata* (Westwood)

Ogcogaster tesselata (Westwood), MacLachlan, 1871, *J. Linn. Soc.*, 11 : 265.

Distribution : INDIA (Bihar, Western Himalayas including Himachal Pradesh and Gujarat). PAKISTAN.

37. *Helicomitus sinister* (Walker)

Helicomitus sinister (Walker), Kimmins, 1949, *Ann. Mag. nat. Hist.*, (12) 2 : 3.

Distribution : INDIA (West Bengal, North India and Maharashtra). SRI LANKA.

Remarks : Tjeder (1972) synonymised the genus *Helicomitus* MacLachlan with *Ascalaphus* Fabricius. Therefore, all the species including the present one should be considered under the latter genus.