

NOTES ON THE BIOGEOGRAPHY OF NEUROPTERA : PLANI-
PENNIA FROM CERTAIN AREAS OF THE NORTH-WEST
HIMALAYAN AND NORTHERN PENINSULAR
SECTORS OF INDIA

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The present paper is an endeavour to highlight a few important aspects on both the inland and exotic patterns of distribution related to the taxonomical studies of certain species of the Neuropteran suborder Planipennia from the less explored areas of two states in India and to establish new locality records for some of them. Besides, taxonomic annotations are also provided for some of the species, as and when required.

The material for study were available from the different surveys made by various parties and also from the old named collections at Zoological Survey of India. These comprise 23 species belonging to 19 genera under 5 families occurring at variable altitudes between *ca* 560 and 3340 metres in the areas surveyed. Our knowledge of the fauna from Uttar Pradesh of the North-West Himalayan and both Uttar Pradesh and Madhya Pradesh of the Northern Peninsular sectors of India is rather far from complete. Hence, the scientific results of more extensive explorations of the fauna from these areas are likely to augment further knowledge of the group concerned. It is not out of place to mention here that 11 species were already reported from Himachal Pradesh in the North-Western Himalayas by the author (*vide* Ghosh, 1977). Majority of the species are known to occur in the identical ranges of both the aforesaid states and also in other parts of India. Amongst the species examined, 17 are known from Uttar Pradesh, out of which 14 are endemic and the rest are exotic in distribution ; most of the species, however, occur in the Himalayan sector. Of the 9 species from Madhya Pradesh, all but one are confined to the Indian subregion. Only four species are mutually common in both the states. Besides, 10 other species from Madhya Pradesh and 3 species from Uttar Pradesh have not been reported at all from the areas under consideration. For the relevant synonymy list of majority of the species dealt with here, the check-list of Indian Planipennia (*vide* Ghosh & Sen, 1977) may be consulted. The precise locality data of

several species were not provided by the earlier workers and the areas as given in the original literature, have been put in the "Inverted Commas" under the distributional column of such species. All the forms endemic in India, those constituting new locality records and also those mutually common in both the states, are respectively marked with asterisk (*), dagger (†) and triangle (Δ) in the text.

I. Family OSMYLIDAE

1. * † *Parosmylus prominens* Needham

1909. *Parosmylus prominens* Needham, *Rec. Indian Mus.*, 3 : 209.

Material examined : Uttar Pradesh : Garhwal : 4 exs., Ghangria, alt. ca 3040m., 13-14. vi. 1958 ; 1 ex., Pavelor, 17. vi. 1958 (B. S. Lamba coll.).

Distribution : INDIA : Uttar Pradesh ; Himachal Pradesh.

Remarks : Kuwayama (1962) merged the genus *Parosmylus* Needham with *Osmylus* Latreille without assigning proper reasons. Therefore, the author agrees with the Needham's views in so far as the placement of the species under the genus is concerned. The species, originally described from Kulu and Lahoul of Himachal Pradesh, is for the first time reported from Uttar Pradesh and exhibits endemic distribution in India.

2. * *Parosmylus belaae* Ghosh and Sen

1968. *Parosmylus belaae* Ghosh and Sen, *Zool. Anz.*, Bd. 180, Heft 1/2 : 107.

Material examined : Uttar Pradesh : Garhwal : 1 ex., Ukhal, alt. ca 2720m., 16. v. 1958 (B. S. Lamba coll.).

Distribution : INDIA : Uttar Pradesh.

Remarks : The species is hitherto not known from any other state[#] cum union territory of India.

3. † *Spilosmylus tuberculatus* (Walker)

1853. *Osmylus tuberculatus* Walker, *Cat. Brit. Mus. Neur.*, 2 : 255.

1914. *Spilosmylus tuberculatus*, Nakahara, *Annotnes zool. jap.*, 8 : 502.

Material examined : Madhya Pradesh : Balaghat : 7 exs., Muki, 12-16. ix. 1957 ; 1 ex., Baihar, 10. ix. 1957 (B. Biswas coll.).

Distribution : TAIWAN ; INDIA (Maharashtra ; Madhya Pradesh) ; INDO-MALAYAN subregion ; JAPAN,

Remarks : Walker (1853) recorded the species from "East Indies" and Banks (1937), from "Malay Peninsula" and "Sunda Islands" of the Indo-Malayan subregion but none of them mentioned any specific locality for the species. Ghosh (1978) recorded the species for the first time from Maharashtra.

4. * *Hyposmylus punctipennis* (Walker)

1859. *Osmylus punctipennis* Walker, *Trans. R. ent. Soc. Lond.*, 5 : 183.

1870. *Hyposmylus punctipennis*, MacLachlan, *Entomologist's mon. Mag.*, 6 : 200-201.

Material examined : Uttar Pradesh : Garhwal, (Kalidhang Expedition), Lanka, alt. ca 2800m., 13. vii. 1974 (*H. C. Ghosh* coll.).

Distribution : INDIA : Uttar Pradesh ; "India Septentrional" and 'Kunawur'.

Remarks : The author agrees with MacLachlan's (1870) view regarding the placement of the species under his genus *Hyposmylus*.

II. Family CHRYSOPIDAE

5. * † *Chrysopa (Chrysoperla) sanandensis* Ghosh

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

Material examined : Madhya Pradesh : Bastar survey, 1978-1979 : 2 exs., Kanker rest house, 4. i. 1979 ; 1 ex., Bodhghat, Jagdalpur, 13. xii. 1978 ; 3 exs., Dongaghat, Jagdalpur, 12. xii. 1978 (*M. S. Shishodia and party* coll.).

Distribution : INDIA : Gujarat ; Madhya Pradesh.

6. * *Tumeochrysa indica* Needham

1909. *Tumeochrysa indica* Needham, *Rec. Indian Mus.*, 3 : 204.

Material examined : Uttar Pradesh : Garhwal, Dhakwania, alt. ca 3340 m., 4. vii. 1958 (*B. S. Lamba* coll. : On the Indo-Swiss expedition, 1958).

Distribution : INDIA : Himachal Pradesh ; Uttar Pradesh.

Remarks : The author has casually come across this species from the North-Eastern Himalayas, but it was hitherto restricted to the North-Western Himalayas, as on record.

III. Family NEMOPTERIDAE

7. * † Δ **Croce filipennis** (Westwood)

1841. *Nemoptera filipennis* Westwood, *Proc. zool. Soc., Lond.*, p. 13.

1909. *Croce filipennis*, Needham, *Rec. Indian Mus.*, 3 : 196.

Material examined : Uttar Pradesh : 6 exs., Lucknow, 7. iv. 1908 (R. H. coll.) ; Madhya Pradesh : 1 ex., Jabalpur, Ghamapur, 24. iii. 1964 (J. S. Bhatti coll.).

Distribution : INDIA : Uttar Pradesh ; Gujarat ; Maharashtra ; Madhya Pradesh ; Bihar ; Orissa ; West Bengal.

Remarks : The species is a new record for Madhya Pradesh.

IV. Family MYRMELEONIDAE

8. * † Stiphroneura inclusa (Walker)

1853. *Myrmeleon inclusus* Walker, *Cat. Brit. Mus., Neur.*, 2 : 327.

1909. *Stiphroneura inclusa*, Needham, *Rec. Indian Mus.*, 3 : 200.

Material examined : Madhya Pradesh : 1 ex., Balaghat, Muki, alt. ca 560m., 17. ix. 1957 (B. Biswas coll.).

Distribution : INDIA : Sikkim ; Madhya Pradesh.

Remarks : The species, hitherto confined to the North-Eastern Himalayas, constitutes a new locality record for Northern Peninsular India, as mentioned above.

9. † * Δ **Creoleon griseus** (Klug)

1834. *Myrmeleon griseus* Klug, *Symb. Phys.*, IV, t. 36.

1972. *Creoleon griseus*, Holzel, *Beitr. naturk. Forsch. Südw.Dtl.*, 1 : 61.

Material examined : Madhya Pradesh : Bastar Survey, 1978-1979 : 2 exs., Gidam, 20. xii. 1978 ; Kanker, 2. i. 1979 (M. S. Shishodia and party coll.) ; Uttar Pradesh : 1 ex., Allahabad, 2. v. 1978 (coll. nil).

Distribution : EGYPT ; SUDAN ; ISRAEL ; IRAN ; INDIA (Maharashtra ; "North India" ; Madhya Pradesh ; Bihar ; West Bengal ; Orissa ; Tamil Nadu).

Remarks : The species is distributed in Ethiopian, Palaearctic and Oriental regions of the globe. The species is a new record for Madhya Pradesh.

10. * *Distoleon verendus* (Walker)

1858. *Myrmeleon verendus* Walker, *Cat. Brit. Mus. Neur.*, 2 : 342.

Material examined : Uttar Pradesh : 1 ex., Tehri, Kay, alt. ca 1530 m., 5. iv. 1958 ; 2 exs., Almorah, Loharkhet, alt. ca 1660 m., 19. x. 1958. (B. S. Lamba coll.) ; 1 ex., Tehri Garhwal, Sayanacheti, alt. ca 1900 m., 31. viii. 1979 (S. K. Gupta and party coll.).

Distribution : INDIA : Himachal Pradesh ; Uttar Pradesh ; "North India".

Remarks : The species has been considered under *Distoleon* Banks after Holzel (1972), who treated *Formicaleon* Banks as a congener of the former.

11. * *Macronemurus nefandus* (Walker)

1853. *Myrmeleon nefandus* Walker, *Cat. Brit. Mus. Neur.*, 2 : 357.

1868. *Macronemurus nefandus*, MacLachlan, *J. Linn. Soc.*, 9 : 278.

Material examined : Uttar Pradesh : 1 ex., Dehra Dun ; date & coll. nil.

Distribution : INDIA : Himachal Pradesh ; Uttar Pradesh.

12. * † *Myrmeleon tenuipennis* Rambur

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

Material examined ; Madhya Pradesh : Bastar Survey, 1978-1979 : 4 exs. Gidam, P. W. D. Rest house, 21. xii. 1978 (*M. S. Shishodia and party* coll.).

Distribution : INDIA : Maharashtra ; Madhya Pradesh, "North India".

13. *Myrmeleon* sp.

Material examined : Uttar Pradesh : 1 ex., Garhwal, (Indian Kalidhang Expedition), Lanka, 13. vii. 1974 (*H. C. Ghosh* coll.).

Remarks : The identification of the material upto species is not possible due to the lack of male specimen at hand. The species, however, seems to be allied to *M. circumcinctus* Tjeder from Israel.

14. *Hagenomyia sagax* (Walker)

1853. *Myrmeleon sagax* Walker, *Cat. Brit. Mus. Neur.*, 2 : 382.

1913. *Hagenomyia sagax*, Esben-Petersen, *Ent. Mitt.*, 2 : 223.

Material examined : Uttar Pradesh : Garhwal : 1 ex., Topoban, 11. viii. 1958 ; 1 ex., Birahi, alt. ca 2130 m., 15. viii. 1958 ; 1 ex., Rini,

alt. ca 2130 m., 27. viii. 1958 ; 2 exs., Joshimath, alt. ca 2130 m., 31. viii. 1958 ; 1 ex., Ghat, alt. ca 1160 m., 17. viii. 1958 ; Almorah : 1 ex., Loharkhet, alt., ca 1660 m., 19. ix. 1958 (*B. S. Lamba* coll.).

Distribution : TAIWAN ; INDIA (Himachal Pradesh ; Uttar Pradesh ; Assam ; West Bengal).

Remarks : The species was formerly placed under the genus *Myrmeleon* Linn. by Walker (1853). But later it was transferred to the genus *Hagenomyia* Banks by Nakahara (1971). The species, formerly recorded from the Kumaon Himalayas by Needham (1909), extends also to the Garhwal Himalayas as has been presently observed. It is hitherto confined to the Oriental region.

15. * † *Nesoleon perpunctatus* Banks

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

Material examined : Madhya Pradesh : 1 ex., Balaghat, Muki, 26.viii. 1957 (*B. Biswas* coll.).

Distribution : INDIA : Andhra Pradesh ; Madhya Pradesh.

16. * † Δ *Palpares pardus* (Rambur)

1842. *Myrmeleon pardus* Rambur, *Hist. nat. Ins. Neur.*, p. 375.

1868. *Palpares pardus*, Mac Lachlan, *J. Linn. Soc.*, 9 : 275.

Material examined : Uttar Pradesh : 1 ex., Dehra Dun, New forest, viii. 1952 (*O. Singh* coll.) ; 2 exs., Almorah, alt. ca 1070 m., 25. ix. 1958 (*B. S. Lamba* coll.) ; Madhya Pradesh ; Balaghat : 2 exs., Baihar, 23-24. viii. 1957 ; 4 exs. Muki, 28. viii. 1957, 18-19. ix. 1957 ; 1 ex., Muki, Banjar valley, alt. ca 560 m., 25. viii. 1957 ; 2 exs., Supkhar Hallon valley, alt. ca 690 m., 26-27. ix. 1957 (*B. Biswas* coll.).

Distribution : INDIA : North-Western Himalayas ; Madhya Pradesh ; Sikkim ; West Bengal ; Bihar ; Orissa ; Maharashtra, Southern Peninsula.

Remarks : The species seems to exhibit a rather cosmopolitan distribution in India. It is a new record for Madhya Pradesh.

V. Family ASCALAPHIDAE

17. * *Idricerus decrepitus* (Walker)

1859. *Ascalaphus decrepitus* Walker, *Trans. R. ent. Soc. Lond.*, (2) 5 : 197.

1871. *Idricerus decrepitus*, Mac Lachlan, *J. Linn. Soc.*, 9 : 240.

Material examined : Uttar Pradesh : Garhwal : 1 ex., Dhak, alt. ca. 2440 m., 5. viii. 1958 (*B. S. Lamba* coll.) ; Nainital : 1 ex.,—v-vi. 1893 (Lucknow Mus. coll.).

Distribution : INDIA : Jammu & Kashmir (North) ; Uttar Pradesh ; Assam ; Meghalaya, Arunachal Pradesh.

Remarks : The species, formerly recorded from the Kumaon Himalayas by Needham (1909), extends to the Garhwal Himalayas, too, as has been presently observed.

18. * † **Ogcogaster segmentator** (Westwood)

1848. *Ascalaphus (Ogcogaster) segmentator* Westwood, *Cabinet Oriental ent.*, t. 34.

1871. *Ogcogaster segmentator*, Mac Lachlan, *J. Linn. Soc.*, 11 : 265.

Material examined : Uttar Pradesh : Almorah : 2 exs., Nail, alt. ca 1530 m., 4. ix. 1958 ; 1 ex., Bamrari, alt. ca 920 m., 24. ix. 1958 ; 1 ex., Baijnath, alt. ca 1070 m., 25. ix. 1958 (B. S. Lamba coll.).

Distribution : INDIA : Jammu & Kashmir ; Himachal Pradesh ; Uttar Pradesh ; Maharashtra ; Karnataka.

19. **Ogcogaster tessellata** (Westwood)

1848. *Ascalaphus (Ogcogaster) tessellatus* Westwood, *Cabinet Oriental ent.*, p. 69.

1908. *Ogcogaster tessellata*, Weele, *Cat. Coll. Selys*, 8 : 253.

Material examined : Uttar Pradesh : Kumaon, 1 ex., Kousanie, alt. ca 1850 m., -viii. 1914 (Tytler coll.).

Distribution : PAKISTAN ; INDIA (Himachal Pradesh ; Uttar Pradesh ; Gujarat ; Bihar).

Remarks : The species is hitherto restricted to the Oriental region of the globe.

20.* **Siphlocerus nimius** (Walker)

1853. *Ascalaphus nimius* Walker, *Cat. Brit. Mus. Neur.*, 2 : 429.

1871. *Siphlocerus nimius*, Mac Lachlan, *J. Linn. Soc.*, 11 : 261.

Material examined : Uttar Pradesh : 3 exs., Allahabad ; date nil (Mus. coll.).

Distribution : INDIA : Uttar Pradesh ; Punjab ; Bihar ; West Bengal.

21. * † △ **Glyptobasis dentifera** (Westwood)

1848. *Ascalaphus (Ogcogaster) dentifera* Westwood, *Cabinet Oriental ent.*, p. 69.

1871. *Glyptobasis dentifera*, Mac Lachlan, *J. Linn. Soc.*, 11 : 278.

Material examined : Uttar Pradesh : 1 ex., Almorah, alt. ca 1530 m., 4. vii. 1958 (B. S. Lamba coll.) ; Madhya Pradesh : 9 exs., Balaghat :

Muki, 13-19. ix. 1957 ; 1 ex., Muki, Banjar Valley, alt. ca 560 m., 23. ix. 1957 ; 1 ex., Muki, Bhaisangarth Hills, alt. ca 760 m., 19. ix. 1957 ; 7 exs., Supkhar, Hallon valley, alt. ca 700 m., 24-25. ix. 1957 (B. Biswas coll.).

Distribution : INDIA : Punjab ; Uttar Pradesh ; Maharashtra ; Madhya Pradesh ; Orissa ; West Bengal ; Kerala ; Karnataka.

Remarks : The species is for the first time recorded from Madhya Pradesh.

22. † *Ascalaphus dicax* Walker

1853. *Ascalaphus dicax* Walker, *Cat. Brit. Mus. Neur.*, 2 : 423.

Material examined ; Uttar Pradesh : 1 ex., Nainital, 5. v. 1908 (Mus. coll.).

Distribution : ASIA MINOR ; BEIRUT ; IRAQ ; SAUDI ARABIA ; South-east Asia including CHINA, INDIA (Himachal Pradesh ; Uttar Pradesh ; West Bengal), BANGLADESH (Sylhet), SRI LANKA, the PHILLIPPINES, SULAWESI, SUMATRA, Western JAVA and other islands of the INDO-MALAYAN area ; PAPUA and NEW-GUINEA ; MOLLUCUS.

Remarks : The species is known from the broad localities of the Palaearctic, and Australo-Oriental regions of the globe including Insulinde which comprises the Malayan and Papuan archipelagos after Weele (1909). It is not out of place to mention here that Tjeder (1972) strongly opined for the replacement of the genus *Helicomitus* MacLachlan by *Ascalaphus* Fabricius as per "The rules for settling of generic type-species—". The author also agrees with this view that the species *dicax* Walker should no longer belong to the genus *Helicomitus* MacLachlan but to *Ascalaphus* Fabricius.

23. † *Ascalaphus sinister* Walker

1853. *Ascalaphus sinister* Walker, *Cat. Brit. Mus. Neur.*, 2 : 424.

Material examined : Madhya Pradesh : Bastar Survey, 1978-1979 : 1 ex., Kanher, 18. xii. 1978 (M. S. Shishodia and party coll.).

Distribution : INDIA : (Maharashtra ; Madhya Pradesh and other area of North India ; West Bengal) ; SRI LANKA.

Remarks : The species is hitherto restricted in the Oriental region of the globe. As for the preceding species, *Helicomitus* MacLachlan should be changed to *Ascalaphus* Fabricius after Tjeder (1972).

SUMMARY

The paper incorporates a brief review of geographical distribution of Neuroptera comprising 23 species in 5 families from Uttar Pradesh and Madhya Pradesh coupled with relevant comments on some of them. About 60% of the present fauna from both the states constitute new locality records, while 70% are hitherto known to be endemic in India. Over 17% of the material are observed to be mutually common in both the states. Attempts have also been made to correlate the distribution of the Indian fauna with that known from the other Zoogeographical regions of the world, if any.

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