

NOTES ON THE INDIAN SPECIES OF *NEOCHAULIODES* WEELE
(NEUROPTERA : CORYDALIDAE)

S. K. GHOSH

Zoological Survey of India, Calcutta

ABSTRACT

This paper incorporates a rather comprehensive account of the taxonomy of four Indian species of the genus *Neochauliodes* Weele under the family Corydalidae including their key. Over and above, the biogeography with particular reference to a couple of the elements, *Neochauliodes sinensis meridionalis* Weele and *N. simplex* (Walker), which are recorded new for India, is also dealt with.

The Indian specimens of the megalopteran genus *Neochauliodes* Weele under the order Neuroptera have been closely examined. The study is based on the material available in the old National Collections at Zoological Survey of India and also on the unnamed collection received from Dr. J. N. Katiyar, I. C. A. R. Complex, Arunachal Pradesh. Presently, an attempt has been made to communicate in brief some important aspects concerning taxonomical and geographical interests. Besides, a key to the species has also been included.

The genus *Neochauliodes* Weele (1909a) underwent several changes in its systematic position right from the family level. The present-day corydalid members of the genus with the type-species, *Chauliodes sinensis* Walker from China, were earlier treated in *Chauliodes* Latreille (partim.) and *Hermes* Gray (partim.) under a separate family of Sialidae. Weele (1910) placed them under the advanced

and almost cosmopolitan tribe Chauliodini of the subfamily Corydalinae in the family Sialidae. Later, Banks (1940) also retained them in the same family without splitting it into tribe. Finally, Kuwayama (1962) considered the tribe Chauliodini and Neuromini as subfamilies under the family Corydalidae. He (*loc. cit.*) did not, however, take into account the tribal classification of the aforesaid subfamilies.

The genus exhibits a less exotic pattern of distribution in the Old World and is not known from the New World. It includes about a dozen of species being restricted in continental Asia and also in the Malayan and Papuan groups of islands (*vide* Weele, 1909b). Of these, nearly 25% are hitherto known exclusively from the north-eastern extra-peninsular sector of India. Amongst the Indian species, only two are already known to occur in Assam and Meghalaya. Besides, one more species, *Neochauliodes obscurus* Weele

from Manipur, could not be dealt with at the moment due to the lack of material. According to Weele (1909a) the generic position of this aberrant species seems to be somewhat doubtful. Moreover, two other species, hitherto known only from either Bangladesh or China, are presently recorded for the first time from Arunachal Pradesh and Meghalaya. The specific results of the present scientific investigation are briefed hereunder.

Key to the Indian species of *Neochauliodes* Weele

- | | | |
|--|-----|-----------------------------|
| 1. Body yellow to piceous. Wings with a large brown streak before pterostigma, hind pair with spots reduced. Penis short, broad and trapezoid ... | ... | <i>sinensis</i>
(Walker) |
| — Body dull to grey brown. Wings without streak before pterostigma, hind pair with spots never reduced. Penis variable in size and shape ... | ... | 2 |
| 2. Wings of moderate width, with brown spots on either side of pterostigma. Appendix superiores with small basal tubercle ... | ... | 3 |
| — Wings very narrow, hind pair without spot on either side of pterostigma. Appendix superiores with large basal tubercle ... | ... | <i>khasianus</i>
(Weele) |
| 3. Both wings with almost similar markings, a small spot on either side of pterostigma; costal area with indistinct spots; subcostal area immaculate; apical area without white spot. Penis long and slender throughout, with borders narrowly raised; appendix superiores normally truncate ... | ... | <i>simplex</i>
(Walker) |

- Both wings with an elongate spot on either side of pterostigma, otherwise markings quite dissimilar: fore-pair having costal area with distinct vinaceous and round spots in the basal two-thirds; subcostal area maculate and apical area with prominent white spots; hind pair without such markings. Penis broad and stout at base, with borders thickly raised; appendix superiores strongly quadrate ... *indicus*
(Weele)

Neochauliodes sinensis (Walker)

The species, which was hitherto confined in North, South, and West China, was originally described by Walker (1853) under the genus *Chauliodes* Latreille and subsequently considered under *Neochauliodes* by Weele (1909a). It comprises three distinct geographical forms or subspecies, of which *N. sinensis meridionalis* Weele, originally known from South China, is recorded for the first time from India by the single male specimen from Arunachal Pradesh (Basar, 29. ix. 1977, J. N. Katiyar coll.). This Oriental subspecies seems to extend in the Palaearctic region, since Weele (1909a) indicated its locality-range at Mou Pin which comes under the jurisdiction of West China.

The specimen fits well in the subspecies, though some of the additional characters may be noted here. These include epicranium, antennae except the dorsal margins of the two basal segments, frons, mandibles, meso- and metanota all black in colour, epicranium with lateral rows of cilia short and yellowish, first two antennal segments dorsally ringed yellow, femora uniformly dark brown and length of fore- and hind wings, measuring 32 and 29 mm respectively.

Neochauliodes khasianus (Weele)

The species, with which the earlier described *Chauliodes pusillus* Weele (1907) was considered conspecific by the same worker (1909a), hitherto remains endemic in the Khasi Hills of Meghalaya. Its characters have been mentioned in the key after reviewing the literature. Further comments on the form, however, have not been made due to the non-availability of material.

Neochauliodes indicus (Weele)

The species, exclusively known from the hills of North-East India, was originally described by Weele (1907) under the genus *Chauliodes* Latreille and, later transferred by him (1909a) to *Neochauliodes*. Presently, a female specimen has been examined from Meghalaya (Shillong, Mulki, 11. viii. 1973, R. S. Giri coll.). It agrees well with both the description and morphometric data including the length of wings already given by Weele (*loc. cit.*) for the species.

Neochauliodes simplex (Walker)

The species was described by Walker (1853) under the genus *Chauliodes* from Bangladesh (Sylhet) and later, considered by Weele (1907) under *Neochauliodes*. Both these workers could not, however, study the female of the species. The present material, include both the sexes from Meghalaya (Shillong, one ♂ Wards Lake, 12.v.1959, Risa colony, 16.viii. 1973, J. K. Prasad coll. ; 1 ♀, Mawghlang, N. Y. S. Hills, 22. v. 1971, R. S. Pillai coll.). Thus the species constitutes new locality records for India and has an important bearing on its further north-ward extension of the geographical range.

The morphological features of both the sexes presently examined are almost identical with the description of male provided in the literature. Several additional characters have been noted for the species. These include occiput, vertex, eyes, frons, promeso- and metanota and also abdomen all black, clypeus and labrum yellow, antennae excepting for the three apical dark brown segments being concolourous with clypeus and labrum, labium also yellow but the palpi dark brown, legs black-brown partly with golden bristles, pterostigma and costal field of forewing indistinct and rather dark respectively. Length of fore- and hindwing in males vary between 30-36 mm and 25-32 mm respectively, while the corresponding measurements in the female are 32 and 30 mm.

ACKNOWLEDGEMENTS

The author is grateful to the Director, Zoological Survey of India, Calcutta for providing laboratory facilities. He is also thankful to Dr. J. N. Katiyar, I. C. A. R. Complex, Arunachal Pradesh for sending the material to the Department for favour of identification.

REFERENCES

- BANKS, N. 1940. Report on certain groups of Neuropteroid insects from Szechwan, China. *Proc. U. S. natn. Mus.*, **88** : 173-220.
- KUWAYAMA, S. 1962. A revisional synopsis of the Neuroptera in Japan. *Pacif. Insects.*, **4** (2) : 325-412.
- VAN DER WEELE, H. W. 1907. Notizen Ueber Sialiden und Beschreibung einiger neuen Arten. *Notes Leyden Mus.*, **28** : 227-64.

- VAN DER WEELE, H. W. 1909a. New genera and species of Megaloptera Latr. *Notes Leyden Mus.*, **30** : 249-64.
- VAN DER WEELE, H. W. 1909b. Mecoptera and Planipennia of Insulinde. *Notes Leyden Mus.*, **31** : 1-100.
- VAN DER WEELE, H. W. 1910. Megaloptera (Latreille). Monographic revision. *Coll. Zool. Edm. Selys Longc.*, **5** (1) : 1-93.
- WALKER, F. 1853. Sialides—Nemopterides. *Cat. Spec. Neuropt. Ins. Coll. Brit. Mus. (N. H.)*, **2** : 193-476.
-