

XI.—*Revised Synopsis of the Species of Choeradodis, a remarkable Genus of Mantodea common to India and Tropical America.*—By J. WOOD-MASON, *Officiating Superintendent of the Indian Museum, and Professor of Comparative Anatomy in the Medical College, Calcutta.*

(With 15 Woodcuts.)

Since the former version of this Synopsis was published, some additional material has fallen into my hands, by the aid of which I have been enabled to establish the existence of two distinct Indian species, and to identify with certainty a larva which I had previously assigned with hesitation to *Ch. rhombicollis*.

Two Indian species have been described, one by Fabricius under the name of *Mantis cancellata*, and the other by De Saussure as *Ch. squilla* from a perfect male insect and a larva. The recent discovery of the true female of the latter proves that the insects I had previously considered to be females and abnormal males of it represent a different species, to which I have the less hesitation in applying the Fabrician name that Prof. Westwood has named a female from Saugor in the Oxford Museum *Ch. cancellata*.

De Saussure has described and figured one of the remarkable larvæ of the genus—that of his *Ch. squilla*—, and pointed out the close resemblance it bears to that of an American species; De Borre has recently figured a larva of *Ch. rhombicollis* which is nearly intermediate in age between my figures 3 and 4; a larva of *Ch. rhomboidea* is preserved in the British Museum; and I give figures of the larvæ of three additional species and also of an earlier stage of *Ch. squilla*; so that, counting the larva of *Ch. strumaria* figured by Mérian, larvæ of no less than 7 out of the 9 species recognized by me are now known.

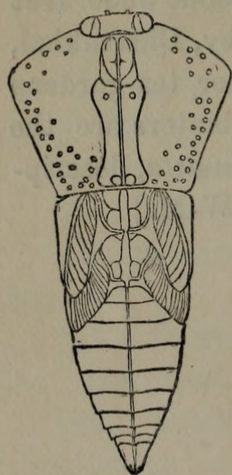


Fig. 1.  
*Choeradodis cancellata.*  
♀ nymph.

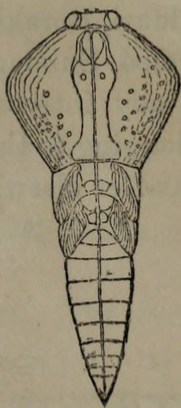


Fig. 2.  
*Ch. brunneri.*  
♂ nymph.

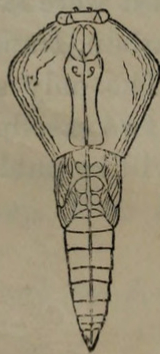


Fig. 3.  
*Ch. servillei.*  
♂ nymph.

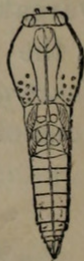


Fig. 4.  
*Ch. squilla.*  
♀ nymph.

The close similarity of these larvæ to one another furnishes a remarkable confirmation of the view that the adults are congeneric.



## Genus CHÆRADODIS, Serville.

## A. Fore femora without a black blotch on the inner side.

## 1. CHÆRADODIS STRUMARIA.

Madame Mérian, *Ins. de Surinam*, 1726, tab. 27, ♀ et nymph.

Roesel von Rosenhof, *Der monatlich-herausgegebenen Insecten Belustigung*, 2ter Theil, 1749, Locust tab. iii, fig. 1 et 2, ♀ et nymph (copied from Mérian).

*Mantis strumaria*, Linn., *Syst. Nat. Ins. t. i, pt. ii*, 1767, p. 691, no. 13, ♀.

——— Fabr., *Ent. Syst. ii*, 1793, p. 18, no. 21, ♀.

——— *cancellata*, Stoll, *Spectres et Mantes*, pl. xi, fig. 42, ♀ (non Fabr.).

*Chæradodis cancellata*, Serville, *Hist. nat. des Orthopt.* 1839, p. 206, ♀ (non Fabr.).

——— *cancellata*, Saussure, *Mant. Americ.* p. 19, ♂, ♀.

——— *strumaria*, Wood-Mason, *J. A. S. B. xlix, pt. ii*, p. 82, 1880, ♀.

Madame Mérian was the first to figure a species of this genus. Her figures were named and described by Linnæus, whose description applies to the perfect female insect, his name having obviously been suggested by a fanciful resemblance of the swellings on the sides of the pronotum in the supposed nymph to series of scrofulous tumours (*strumæ*).

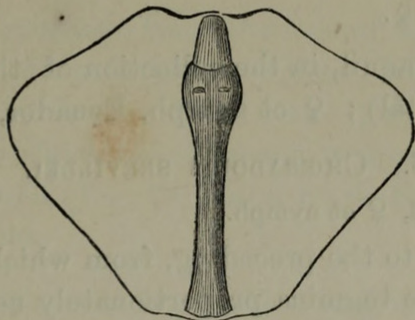


Fig. 5, ♀.

The accompanying outline drawing of the pronotum of a specimen when superposed upon the same part of Mérian's figure, accurately coincides therewith.

Stoll's figure 42 without doubt represents a specimen of the same species.

HAB Cayenne (♀, Serville) ; Surinam (♀, Mérian, Stoll ; ♂ ♀, De Saussure).

## B. Fore femora with a black blotch on the inner side.

## (a.) The blotch on the lower half of the joint (American).

In the females of the following two species, the posterior angles of the pronotal expansions are broadly rounded and are not produced backwards beyond the level of the hinder end of the primitive pronotum.



2. CHÆRADODIS RHOMBICOLLIS.

*Mantis rhombicollis*, Latr. in Voy. de Humb., Zool., Ins. p. 103, pl. 39, figs. 2, 3, ♂.

*Chæradodis peruviana*, Serville, Hist. nat. des Orthopt. 1839, p. 207, ♂.

———— *strumaria*, Stål, Syst. Mant., 1877, p. 15, ♂ ♀.

———— *rhombicollis*, Wood-Mason, l. c. p. 82 ♂ ♀.—De Borre, Liste des Mant. Mus. Roy. de Belg. 1883, p. 5; et Comptes-rendus Soc. Ent. Belg. Nov. 1883, ♀ et nymph fig.

The blotch commences, in both sexes, near the base of the femur, extends through the unguual groove nearly to the middle of the joint, and is there succeeded by a marginal row of black points in contact with the bases of alternate spines.

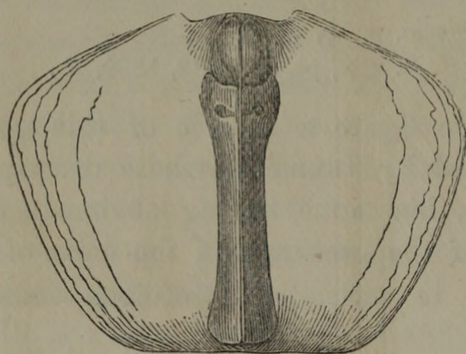


Fig. 7, ♀.

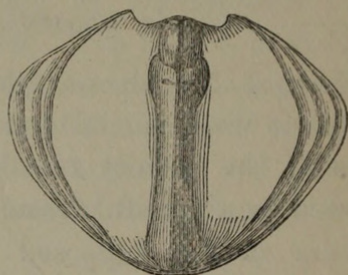


Fig. 6, ♂.

HAB. ♂ ♀, Guayaquil, in the collection of the British Museum; New Granada (♂ ♀, Stål); ♀ et nymph, Ecuador, in Mus. Roy. Belg.

3. CHÆRADODIS SERVILLEI.

Wood-Mason, l. c. p. 83, ♀ et nymph.

♀. Closely allied to the preceding, from which it differs in having the marginal field of the tegmina proportionately narrower, and in the smaller size, as well as in the different shape, of the femoral blotch, which

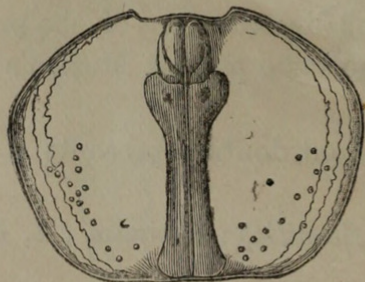


Fig. 8, ♀.

is small and oval, commences just beyond the unguual groove, and is followed by a marginal row of small black points.

HAB. 2 ♀, Cache, Costa Rica, in the collection of Messrs. Godman and Salvin and of the Indian Museum; nymph (Fig. 3), Chiriqui, in the collection of the Indian Museum, Calcutta.



## 4. CHÆRADODIS BRUNNERI.

Wood-Mason, J. A. S. B., 1882, xli, p. 21, ♀ et nymph.

♀. Closely allied to *Ch. rhombicollis*, Latr., and *Ch. Servillei*, W.-M., differing from both in the size, shape, and position of the femoral blotch, which is nearly thrice as long as broad, extends rather further in front of the unguis groove than it does behind it, and is followed by four black puncta arranged along the lower margin of the joint at the bases of alternate spines), and in having the posterior margin of the pronotum slight-

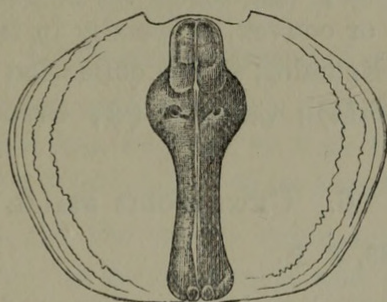


Fig. 9, ♀.

ly convex instead of concave; from the former in its much narrower and from the latter in its rather broader tegmina; and from the latter in the upper margin of its fore femora being coarsely granulated, and sinuous instead of straight, in which latter respect it approaches the former.

HAB. ♀ and nymph (Fig. 2), Santa Fé de Bogotá, New Granada, in coll. Ind. Mus. Calcutta.

In the females of the next two species, and, in all probability, in those of *Ch. rhomboidea* also, the posterior angles of the pronotal lamellæ are rounded-angulate and produced backwards, so that the hinder end of the primitive pronotum projects in the bottom of an angular emargination.

## 5. CHÆRADODIS LATICOLLIS.

*Chæradodis laticollis*, Serville, Revue, p. 24; Hist. nat. des Orthopt. 1839, p. 208, pl. iv, fig. 2, ♀.

——— Saussure, Mantes Americ. p. 20, ♀.

——— *strumaria*, Id, ibid. p. 18, ♂.

——— *laticollis*, Stål, Syst. Mant. 1877, 17, ♀.

——— Wood-Mason, J. A. S. B. 1880, vol. xlix, pt. ii, p. 83, ♂ ♀.

The blotch is situated, in both sexes, just beyond the unguis groove, is oblong-rhomboidal in shape, and is followed by two black points on the bases of alternate spines; there is a fuscous speck at the end of the stig-



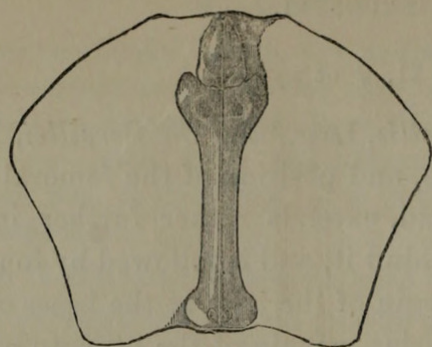


Fig. 11, ♀.

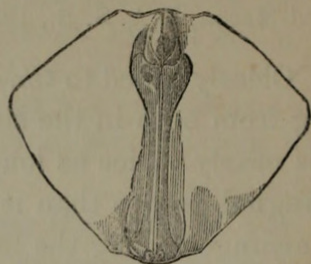


Fig. 10, ♂.

matal spot of the tegmina; and the antero-lateral margins of the pronotal lamellæ are arcuate or convex, especially in the female.

HAB. 5 ♂, 5 ♀, Ecuador, in the collection of the Indian Museum, Calcutta; Peru (♀, Stål); Cayenne (♀, *Serville et Stål*); Surinam (♂, *Saussure*).

#### 6. CHÆRADODIS STALII.

Wood-Mason, l. c. p. 83, ♂ ♀.

Differs from the preceding in the shape of the blotch (which is pointed at both ends and commences in the unguis groove, and on either side of which the femur is pale luteous-yellow instead of being clouded with fuscous); in being without a fuscous speck at the distal end of the

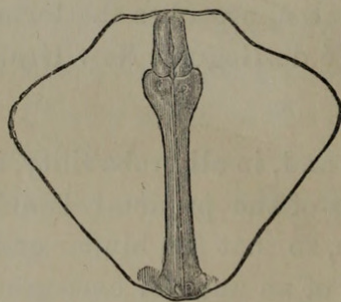


Fig. 13, ♂.

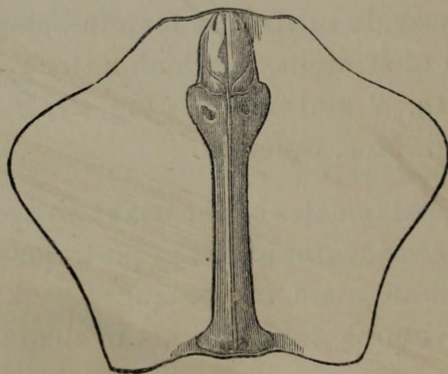


Fig. 12, ♀.

stigma; in its shorter and differently shaped facial shield; and in having the antero-lateral margins sinuous-concave and the lateral angles of the pronotal expansions more broadly rounded off.

HAB. 1 ♂, 4 ♀, Ecuador, in the Museums of Calcutta and Oxford.

#### 7. CHÆRADODIS RHOMBOIDEA.

*Mantis rhomboidea*, Stoll, *Spectres et Mantes*, pl. xi, fig. 45, ♂.

*Chæradodis rhomboidea*, Wood-Mason, l. c. p. 84, ♂.

A male insect from Pará, in the British Museum, agrees neither with *Saussure's* description (*loc. supra cit.* p. 18), nor with any of the speci-



mens in the Indian Museum; it more nearly approaches Stoll's figure, agreeing therewith in the points in which it differs from the former.

The blotch commences in the ungual groove, thence extending as far along the femur as in the preceding four species, but it is not followed by a marginal row of black points. The pronotal lamellæ have no posterior angles, their postero-lateral margins dwindling away to nothing posteriorly.

HAB. ♂, Pará, in the collection of the British Museum. A nymph, from Ega, in the same collection, probably also belongs to this species.

This species is nearest allied to *Ch. laticollis*.

(β.) *The blotch on the upper half of the joint* (Indian).

#### 8. CHÆRADODIS CANCELLATA.

*Mantis cancellata*, Fabr., Ent. Syst. ii, 1793, p. 18.

*Chæradodis squilla*, Lucas, Ann. Ent. Soc. Fr. 5 sér. ii, 1872, p. 32, ♀.

————— Wood-Mason, l. c. p. 48 (*ex parte*).

Pronotum dissimilar in the sexes, being much less dilated in the male than in the female; its antero-lateral and postero-lateral margins not forming an angle at their junction in the female.

Femoral blotch narrower, confined to the foliaceous crest of the joint, and bordered below by a band of enamel-like bright emerald-green.

In the shape and extent of the pronotal expansions, the male of this species much resembles the same sex of *Chæradodis rhomboidea*, differing, however, strikingly therefrom in its much shorter pronotum. The female approaches and differs from those of *Chæradodis rhombicollis* and its allies in the same respects.

HAB. India (*Fabricius*) generally, from Ceylon, through Madras and Central India (♀ in coll. Hop. Oxon.), to the banks of the Killing River on the N. E. Frontier (nymph [Fig. 1] in coll. Ind. Mus. Calc.)

Obs. A specimen of this species in the British Museum is erroneously labelled "Brazil."

#### 9. CHÆRADODIS SQUILLA.

*Chæradodis squilla*, Saussure, Mél. Orthopt. t. i, 3me fasc. p. 161, pl. iv, fig. 3, 3a, ♂ et nymph.

♀ ——— Lucas, Ann. Entom. Soc. Fr. 5 sér. t. ii, 1872, p. 32, ♀.

————— Wood-Mason, l. c. p. 84 (*ex parte*).

Pronotum similar in the sexes, its postero-lateral forming with its antero-lateral margin a distinct angle in both; that of the male differing from that of the female only in being rather less expanded, and consequently less convex, postero-laterally.

Femoral blotch broader, extending on to the primitive femur up to the inner end of the unequal groove and not bordered with green.



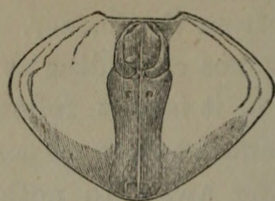


Fig. 14, ♂.

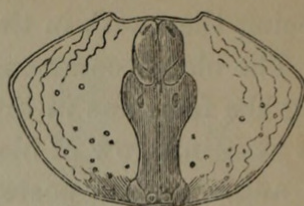


Fig. 15 ♀.

It is much more probable that the insect obtained by M. Jansen in the neighbourhood of Madras and described by Lucas as the opposite sex of De Saussure's species is a female of the preceding than of this species.

HAB. Ceylon, ♂ et nymph in Geneva Museum, ♂ ♀ and larvæ in Museums of Calcutta and Colombo.

I am indebted to the courtesy and liberality of the Trustees of the Colombo Museum for perfect insects and nymphs, and to Mr. F. M. Mackwood for a nymph of this species.

In Fig. 14, the left lateral angle has been much too rounded off by the engraver; it should be like the right.





Wood-Mason, James. 1884. "XI.—Revised Synopsis of the Species of Chœradodis, a remarkable Genus of Mantodea Common to India and Tropical America." *The journal of the Asiatic Society of Bengal* 53(III), 238–244.

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