

INSECTA : MANTODEA

By

T. K. MUKHERJEE* AND A. K. HAZRA

Zoological Survey of India, Calcutta.

INTRODUCTION

The study of Mantid fauna in India made practically no head-way except a few by Wood-Mason (1889), Giglio-Tos (1927) and Mukherjee and Hazra (1982), But there appears to be no previous report on these insects from Arunachal Pradesh.

SYSTEMATIC ACCOUNT

ORDER : MANTODEA

Family : MANTIDAE Burmeister 1838

Subfamily : MANTINAE Kirby 1904

Tribe : MANTINI Beier 1964

1. *Hierodula (Hierodula) saussurei* Kirby 1904

1869. *Hierodula simulacrum*, Saussure, *Mt. Schweiz. ent. Ges.*, 3 : 68.

1904. *Hierodula (Hierodula) saussurei*, Kirby, *Cat. Orth. Brit. Mus.* 1 : 245.

General description : Body green ; stout frontal sclerite, higher than width, bicarinate. Head large, eyes round. Pronotum strong.

2. *Hierodula (Hierodula) sp.*

General description : Body greenish with a light tinge of yellow. Pronotum long, metazona three times longer than prozona ; metazona with almost parallel margin. Elytra broad, a little longer than abdomen ; costal area greenish yellow, becoming suddenly very narrow towards apex. Stigma pale. Abdomen broad. Anterior coxa with 9-10 spines originating from free border. The 1st and 3rd discoidal spines of anterior femur black ; the bigger internal spines are blackish.

Measurements : ♀ : Body 67.0 mm ; Pronotum 25.0 mm. Metazona 17.5 mm ; Ant. coxa 15.0 mm. ; Ant. femur 19.0 mm. Ant. tibia 10.0 mm. ; Elytra 43.0 mm.

*Present address : Dept. of Zoology ; Jhargram Raj College, Midnapore, West Bengal,

Material examined : 1 ♂, Zero, 38 Km NE of Miao, 21.xii.83.

Remarks : This specimen has much similarity with *Hierodula* (*Hierodula*) *vitreoides* G.T. 1912 but has some characters of *H. (H.) vitrea* (Stoll) 1813 as well as *H. (H.) ventralis* G.T. 1912. It seems more to be a variation of *H. (H.) ventralis* G.T. 1912.

3. *Statilia nemoralis* (Sauss) 1870

1870. *Pseudomantis nemoralis* Saussure, Mt. Schwaiz. ent. Ges. 3 : 229.

1870. *Mantis orientalis* Saussure, *ibid.* : 233.

1877. *Statilia nemoralis* Stal, Bih. Svenska Ak., 4 (10) : 55.

General description : ♀ : Body greenish. Superior border of frontal sclerite sinuated on both sides. Stigma of elytra without any black dot. Prosternum not black. The internal spines of anterior femur encircled by black rings at bases.

Measurements : ♀ (damaged) : Pronotum 16.5 mm., Elytra 27.5 mm.

Material examined : 1 ♀, Deban, 27 Km. East of Miao, 9.xii.83.

4. *Statilia maculata* (Thunb.) 1784

1784. *Mantis maculata* Thunberg, *Nov. Ins. Spec.* 3 : 61.

1897. *Statilia maculata* Bolivar, Ann. Soc. ent. France, 66 : 309.

General description : Identified by the presence of black band at coxal joint of prosternum and smoky wings. Two examples are damaged.

Materials examined : Sex unknown, Deban, 27 Km East of Miao, 3.xii. 83 & 7.xii.83.

5. *Statilia apicalis* (Sauss.) 1871.

1871. *Mantis apicalis* Saussure, Mem. Soc. Geneve, 21 : 291.

1877. *Statilia apicalis* Stal, Bih. Svenska Ak. 4 (1) : 55.

General description : One example damaged. Identified by greyish body and black patch on basal part of prosternum ; stigma with black dot. Anterior coxa internally near base with a black band. Another black band internally on femur posterior to claw groove.

Measurements : Sex unknown. Pronotum—15.0 mm, Ant. coxa—10.0 mm ; Ant. femur—13.0 mm, Ant. tibia—4.5 mm.

Material examined : 1 ex., Gibbon's Land, Miao, 2.i.84.

6. *Statilia* sp.

Material examined : 1 ♂ nymph, Zero, 28 KM NE of Miao, 22.xii.83.

7. *Tenodera* sp.

Material examined : 1 ♀ nymph, Farmbase, Miao. 17.xii.83.

Subfamily : DEROPLATINAE Giglio-Tos 1919

Tribe : PARABLEPHARINI Beier 1964

8. *Parablepharis kuhlii* (Haan) 1842

1842. *Mantis* (*Blepharis*) *Kuhlii* Haan, *Verh. nat. Gesch Nederl. Bezitt. Ins.* : 93 t. 18 f. 3.

1870. *Parablepharis kuhlii* Saussure, *Mt. Schweiz ent. Ges.* 3 : 223.

General description : ♂ : Blackish body. Pronotum proper with good supra coxal widening ; metazona constricted in the middle. Lamellar portion of prozona with few obtuse dents on margins ; this widening proceeds upto middle of anterior half of metazona. The basal part of metazona devoid of this lamella but laterally with 5-6 dents. Frontal sclerite smooth, superior edge wide angled, terminate in two minute conical points. Eyes big, round ; ocelli big.

Anterior coxa with dorsal ridge, with 4-5 swollen portion at posterior edge. Similar 7 lobules at anterior edge.

Anterior femur with 4 external and 4 discoidal spines ; its anterior edge sinuated by the formation of a lamellar portion.

Anterior tibia well broad, dorsally round, with about 16 external spines.

Middle and posterior coxa with small elongated lamellae ; femora with ventral lobules.

Elytra and wings well developed ; longer than body. Costal area of elytra opaque, discoidal area hyaline with blackish veins. Wings opaque but costal area, distal portion of discoidal area and anal area blackish brown.

Measurements : ♂ : Body-60.0 mm ; pronotum (wide/length-9.5/16.0 mm.) ; Ant. coxa-11.0 mm. ; Ant. femur-14.0 mm. Ant. tibia-7.0 mm. ; Elytra-55.0 mm.

Material examined : 1 ♂ ; 40 KM NE of Miao, 11.xii.83,

Subfamily : AMELINAE Giglio-Tos 1919

Tribe : AMELINI Beier 1964

9. *Cimantis fumosa* Giglio-Tos 1915

1915. *Cimantis fumosa* Giglio-Tos, *Bull. Soc. ent. Ital.*, 46 : 154.

General description : Dirty brown body ; small in size. Frontal sclerite a little wider than high, bicarinate, superior margin a little arched, feebly wavy in the middle ; upper half blackish. The vertex and pronotum blackish. Pronotum is little elongated ; the narrow median carina is blackish. Prosternum black. Margins of pronotum setaceous. Elytra long extending beyond abdomen, smoky ; stigma with black patch at both ends. Transverse veinules are black at one end. Wings hyaline, a little smoky at apex. Anterior coxa pale, with 2-3 blackish spots externally—that of distal end is more black. Internally the distal edge is black.

Anterior femora entirely black, indistinctly divided into 3 blocks at upper edge. All the spines are black. Discoidal and external spines are 4 in each cases. Anterior tibia similarly black, indistinctly triannulated. First segment of anterior tarsi black. There are 9-10 external spines on anterior tibia. The posterior metatarses are a little longer than the rest of the segments.

Measurements : Body : ♂ 20 mm, ♀ , 17 mm ; Pronotum : ♂ , 4.5 mm ; ♀ , 4.5 mm ; Metazona : ♂ 2.2 mm, ♀ , 2.1 mm, Elytra : ♂ , 2.1 mm, ♀ , 7 mm, Anterior coxa : ♂ 5.5 mm. ♀ , 3.5 mm., Anterior femur : ♂ , 6 mm, ♀ 4 mm, Anterior Tibia : ♂ , 3 mm, ♀ , 2 mm.

Materials examined : 1 ♂ , Zero Camp, 30 KM, N. E. of Miao, 14.xii.1982, 1 ♀ , Gibbon's land, 16 KM. East of Miao, 30.iv.1981.

Distribution : INDIA ; Annamalai Hills.

10. *Cimantis* sp.

Materials examined : 2 ♀ ♀ , nymphs, Hornbill, 30 KM. N. E. of Miao, 11.xii.83 and 13.xii.S3 ; 1 ♂ , nymph, above locality, 16.xii.83.

11. *Amantis* sp.

Materials examined : 2 ♂ ♀ , Hornbill, 30 km. N. E. of Miao, 13.xii.83 ; 1 ♂ , Zero, 27 KM. N. E. of Miao, 22.xii.83.

Family : HYMENOPODIDAE Chopard 1949
 Subfamily : ACROMANTINAE Giglio-Tos 1919
 Tribe : ACROMANTINI Beier 1964

12. *Acromantis montana* Giglio-Tos 1915

1915. *Acromantis montana* Giglio-Tos, *Boll. Mus. Torino*, 30 : 7.

General description : Tubercle of vertex very small, spiniform. Prosternum black ; the lateral border of pronotum presents very small blackish tubercles. Elytra with oblique veins a little curved near base. Distinct deep brown patch is not apparent in the elytra, but the distal 1/3 of costal area is reddish brown. Discoidal cells are big and elongated. Wings with deep reddish costal area in the distal 1/3 of the tip. Apex of wings truncated. Superior border of anterior femora without any hump (as in *A. insularis* Giglio-Tos) ; its discoidal and bigger internal spines are entirely black. Ant. coxa with 5-6 smaller spines.

Measurements : ♂, Body 25 mm ; Pronotum 8 mm, Elytra 20 mm.

Material examined : 1 ♂, Miao R. F., 3,xii.1982.

Remarks : This species is nearer to *A. gestri* Giglio-Tos, but distinguished by the vertex tubercle which is very small in *montana* Giglio-Tos. as also by the nature of pronotum and longitudinal veins of elytra.

Distribution : INDIA, JAVA.

13. *Anaxarcha graminea* Stal 1877

1877. *Anaxarcha graminea*, Stal, *Bih. Svenska AK.*, 4 (10) : 87.

General description : Green small mantid ; Frontal sclerite transverse, terminates in a sharp point. Pronotum with oval elongated dialation. Border with black line a short length of prozona and metazona. Anterior coxa with few denticles. Bigger internal spines of anterior femur black.

Measurements : ♂ : Body : 32.0 mm ; Pronotum.11.0 ; Metazona 7.0 mm ; Ant. coxa-7.0, Ant. femur-9.0 mm, Ant. tibia-5.0 mm., Elytra-26.5 mm.

Material examined : 1 ♂, Hornbill, 30 K.M. N.E. of Miao, 12.xii.83 ; 1 ♂, Deban, 27 K.M. East of Miao, 4.xii.83.

Distribution : ORIENTAL INDIA.

14. *Nemotha metallica* (Westw.) 1843

1843. *Mantis metallica*, Westwood, *Arcana ent.*, 2 : 51 t. 62 f. 3.

1871. *Micromantis metallica* Saussure, *Mem. Soc. Geneve*, 21 : 33.

1889. *Nemotha metallica* Westwood, *Revis Mantid.* 42.

General description : Small blackish blue mantids, Juxtacular lobes of vertex prominent. Frontal sclerite narrow, transverse, obtuse-angled ; clypeus elevated with a median ridge. Pronotum well developed ; good supra coxal dialation, margins constricted in the metazona ; borders finely denticulated ; a broad black transverse band on supra-coxal junction.

Anterior femur with 4 external spines. All the legs are totally black. Anterior tibia with 13 internal spines.

All abdominal segments bear a white narrow streak at their posterior margins.

Elytra deep green and densely reticulated.

Measurements : Body ♂, 18 mm, ♀, 26.5 mm ; Pronotum : ♂ 6.0 mm. ♀, 7.3 mm. ; Ant. coxa : ♂ 5 mm. ♀ 6 mm. ; Ant. femur : ♂ 6.0 mm, ♀ 7.5 mm. ; Elytra : ♂ 14 mm., ♀ 19.5 mm.

Material examined : 2 ♂ ♀, Hornbill, 30 K.M. N.E. of Miao, 13.xii.83.

Distribution : INDIA : Assam, Arunachal Pradesh.

Subfamily : HYMENOPODINAE Giglio-Tos 1919

15. *Creobroter laevicollis* (Sauss.) 1870.

1870. *Creobotra laevicollis* Saussure, *Mt. Schiweiz. ent. Ges.* 3 : 242.

1927. *Creobroter laevicollis*, Giglio-Tos, *Das Tierreich* 50 Lief : 557.

General description : ♂, Vertex with a minute spine on a swollen base. Eye conical, reaching beyond the level of vertex. Frontal sclerite pentagonal, with a deep concavity. Anterior coxa with 6-7 minute spines. Elytra green, densely reticulate, oval yellow band placed in front of middle and contains one black dot. Anal area of wings smoky in the middle.

Measurements : ♂ (damaged) : Pronotum-8.0 mm. Ant. coxa-9.0 ; Ant. femur-10.5 ; Ant. tibia-5 mm. Elytra-37.0 mm.

Materials examined : 2 ♂ ♂, Deban, 27 KM east of Miao, 3.xii.83 and 7.xii.83.

Distribution : JAVA, INDIA.

SUMMARY

The present paper deals with 10 species of Mantodea distributed over 10 genera and 2 families. These are recorded for the first time from Arunachal Pradesh.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. B. K. Tikader, Director, Zoological Survey of India for the facilities provided for this work ; to Dr. A. K. Ghosh, Deputy Director for kindly placing the material to us and last but not least to Dr. S. Biswas, Zoologist, for painful collection of these materials.

REFERENCES

- BEIER, M. 1964. Blattopteroidea : Mantodea : In Bronn's Klassen und Ordnungen Des Tierreich : Vol. V. Arthropoda. Sec. III. Leaf. 6. Issue No. 5 : 849-970. Vienna.
- GIGLIO-TOS, E. 1927. Mantidae Das tierreich 50 lief. : 1-707. Berlin and Leipzig.
- MUKHERJEE, T. K. AND HAZRA, A. K. 1983. On a small collection of Mantid (Dictyoptera) from Maharashtra with the description of a new species. *Rec. zool. Surv. India*. 80 : 459-465.
- WOOD-MASON, J. 1889. A catalogue of the Mantodea, No. 1 : 1-48 + pls. Calcutta.
- WOOD-MASON, J. 1891. A catalogue of the Mantodea, No. 2 49-66 + pls. Calcutta.