Bull. zool. Surv. India, 5 (2 & 3) : 113-120, 1984

MEROPHYSIINAE (COLEOPTERA : MEROPHYSIIDAE) FROM INDIA AND SRI LANKA

T. SENGUPTA AND T. K. PAL

Zoological Survey of India, Calcutta

ABSTRACT

Systematic position of Merophysiinae is discussed, *Displotera* Reitter has been redefined and *D. grandis* Dajoz has been synonymised with *D. beloni* (Wasmann), *D. beloni* is first time recorded from West Bengal.

INTRODUCTION

Crowson (1955) separated the tribes Merophysiini and Holoparamecini from the Lathridiidae to establish the family Merophysiidae and attributed subfamily status to these former two tribes. He separated the family Merophysiidae from the Lathridiidae on the basis of open front coxal cavities, hidden antennal insertions, antenna with less than 11 segments, 5 pairs of abdominal spiracles, maxilla with distinct lacinia and galea, and long trochanters. He also included the colydiid genus *Anommatus* Wesmael in Merophysiidae which was transferred by Sengupta and Crowson (1973) to the family Cerylonidae. So far only *Coluocera beloni* Wasmann and *Displotera grandis* Dajoz are known from India and Sri Lanka respectively, and Dajoz (1973-75) transferred *beloni* to the genus *Displotera*.

In the present study the genus *Displotera* has been redefined and *D. grandis* Dajoz has been synonymised with *D. beloni* (Wasmann) and this species is first time recorded from the West Bengal.

Genus **Displotera** Reitter

Displotera Reitter, 1887, *Best.-Tab.* 3, ed. 2 : 9 ; Type-species : *Displotera simoni* Reitter (= *Coluocera maderae* Wollaston).

Lioclemmus Jeannel, 1934, *Annls Soc. ent. Fr.*, 103 : 172 ; Type-species : *Lioclemmus petiti* Jeannel (=*Coluocera madarae* Wollaston).

Reitter (1887) established this genus for the species *Displotera simoni* Reitter from West Africa and Hetschko (1926) listed only the above species under this genus. Dajoz (1973-75) synonymised *Lioclemmus* Jeannel with *Displotera*. He also transferred *beloni* Wasmann, *ecitonis* Wasmann and *maderae* Wollaston from *Coluocera* to this genus, *synonymised D. simoni* Reitter with *D. maderae* (Wollaston), and erected the subgenus *Mussardia* Dajoz for the species *D. grandis* Dajoz.

This genus is closely related to *Coluocera* Motschulsky and *Merophysia* Lucas. It can be distinguished from the former genus by the structure of eye which consists of six ocelli in comparison to single ocellus of

Coluocera and from the latter by its larger trochanter, well developed mesocoxal and femoral lines, shape of prosternal process and labrum invisible from dorsal side. *Displotera* can be easily separated from *Reitteria* Leder. Species of the latter genus are blind and bears a transverse prebasal impression on pronotum. Whereas *Evolocera* Sharp unlike *Displotera* possesses following characters : mesocoxae closely situated ; mesometasternal junction indistinct ; prosternal process small, narrow, strongly carinate and received in a cavity at meso-metasternal junction ; devoid of mesocoxal lines ; 2-segmented antennal club ; large projecting eyes and transverse prebasal impression on pronotum.

General appearance (Fig. 1) elongate-ovoid, convex, shiny.

Head (Fig. 5) transverse, fronto-clypeal suture somewhat semilunar ; eyes poorly developed, consist of six ocelli ; anterior part

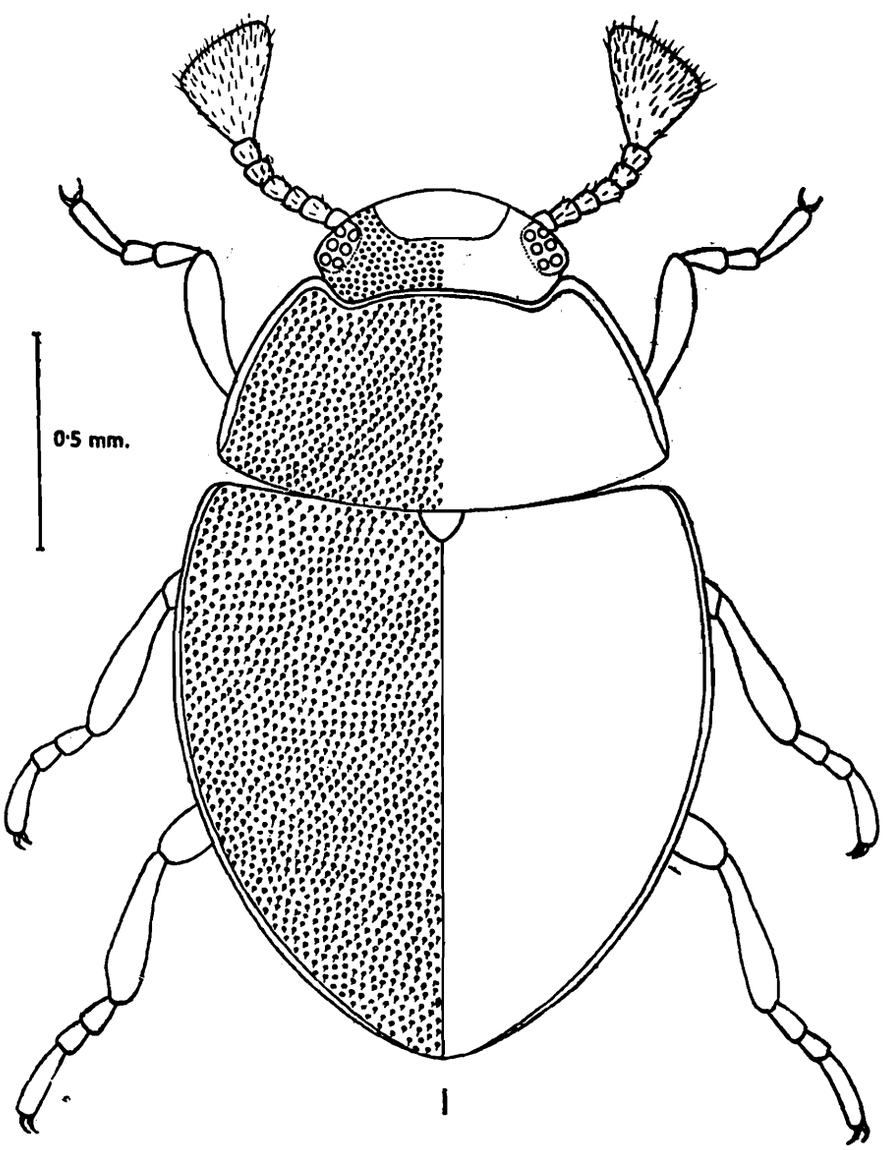


Fig. 1. *Displotera beloni* (Wasmann), Dorsal view.

of gular region with a transverse groove, with longitudinal antennal grooves extending to anterior part of prothorax. Antenna short, 8-segmented, antennal insertion hidden under projection of frons, scape small and globular, pedicel and segment 3 elongate and subequal, segments 4-7 short and subequal ; segment 8 forming a markedly large and triangular club. Labrum (Fig. 5) poorly developed and transverse ; mandible (Fig. 11) with 3 apical teeth and a tridentate tooth beneath apical teeth, mola well developed ; maxilla (Fig. 10) with well developed lacinia and galea, lacinia rather broad and without apical

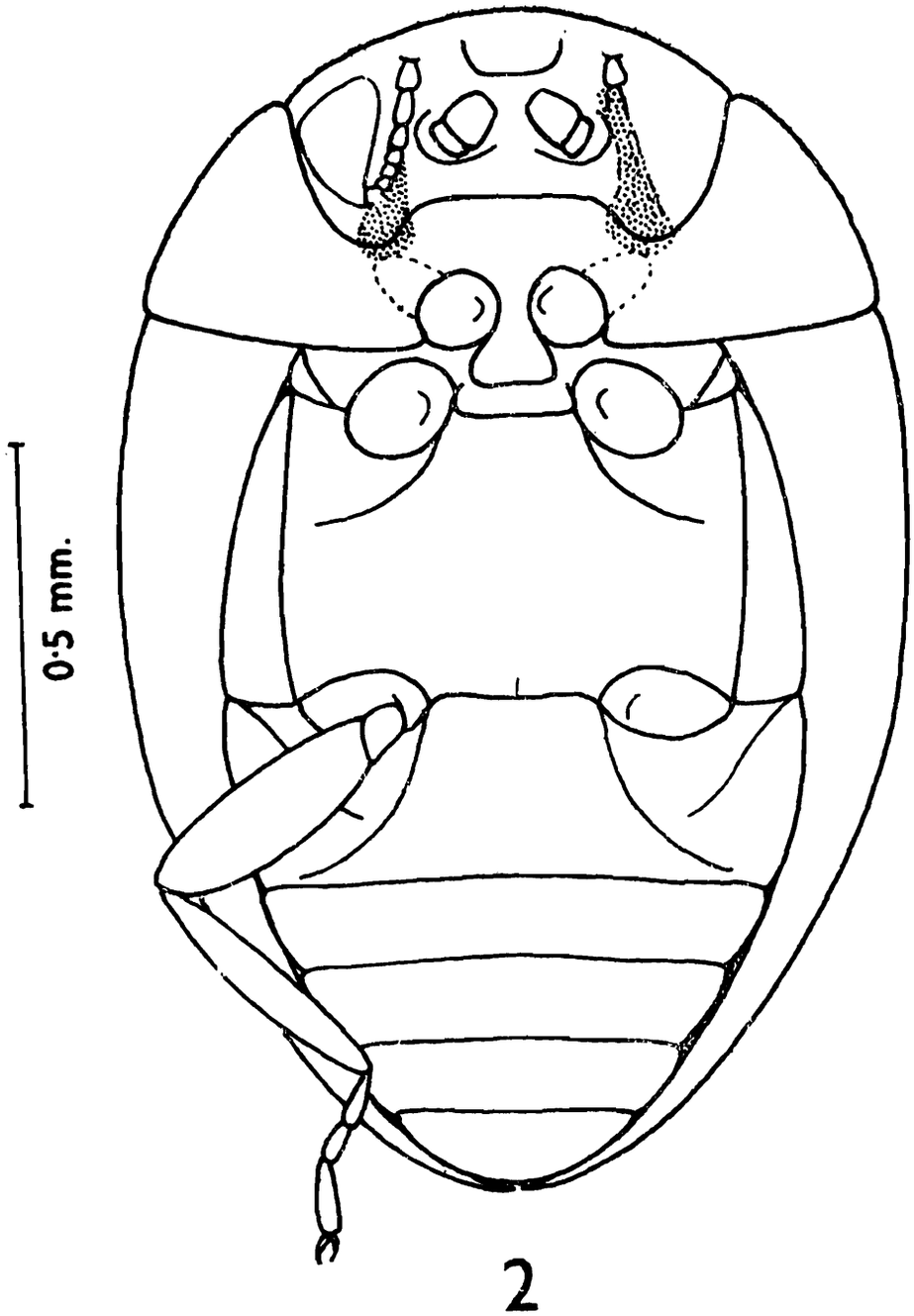


Fig. 2. *Displotera beloni* (Wasmann), Ventral view.

spine, galea normal with hairy apex, palpi with segments 2 and 3 subequal, apical segment longest and fusiform ; labium (Fig. 9) with triangular mentum, palpi with segment 1 minute, segment 2 markedly large, apical segment short and transverse.

Prothorax (Fig. 6) transverse, front coxae, narrowly separated, cavities externally open and internally closed ; prosternal process normal, front margin of prosternal process with a pair of notches, where antennae rest in repose ; prosternum forming a transverse plate in front of prosternal process.

Meso-metathorax (Fig. 7) : Mesosternum short and transverse, mesocoxae widely separated, sternal fitting in a straight line, mesocoxal cavities closed outwardly ; metasternum with distinct mesocoxal lines, median impressed line short, metendosternite reduced.

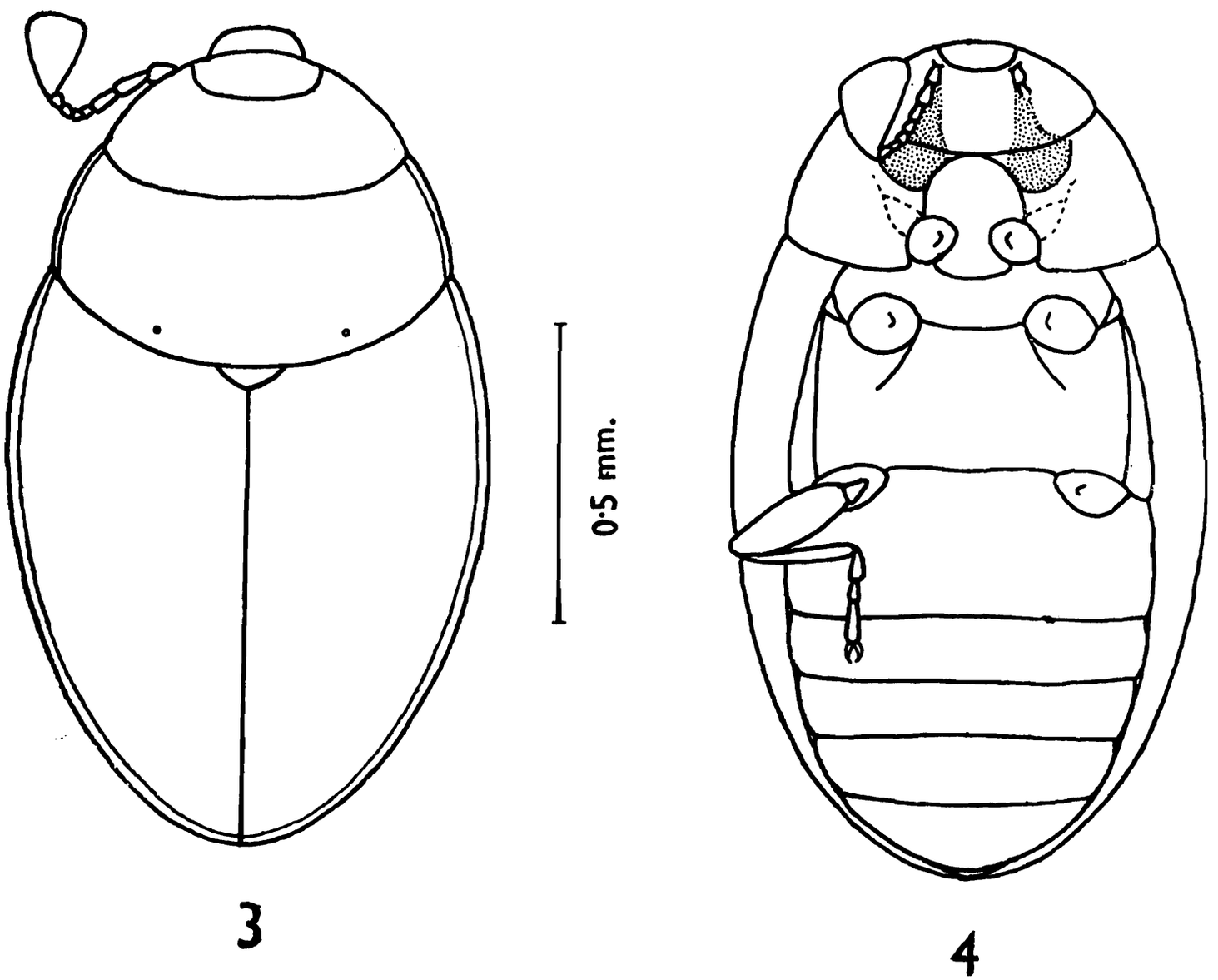
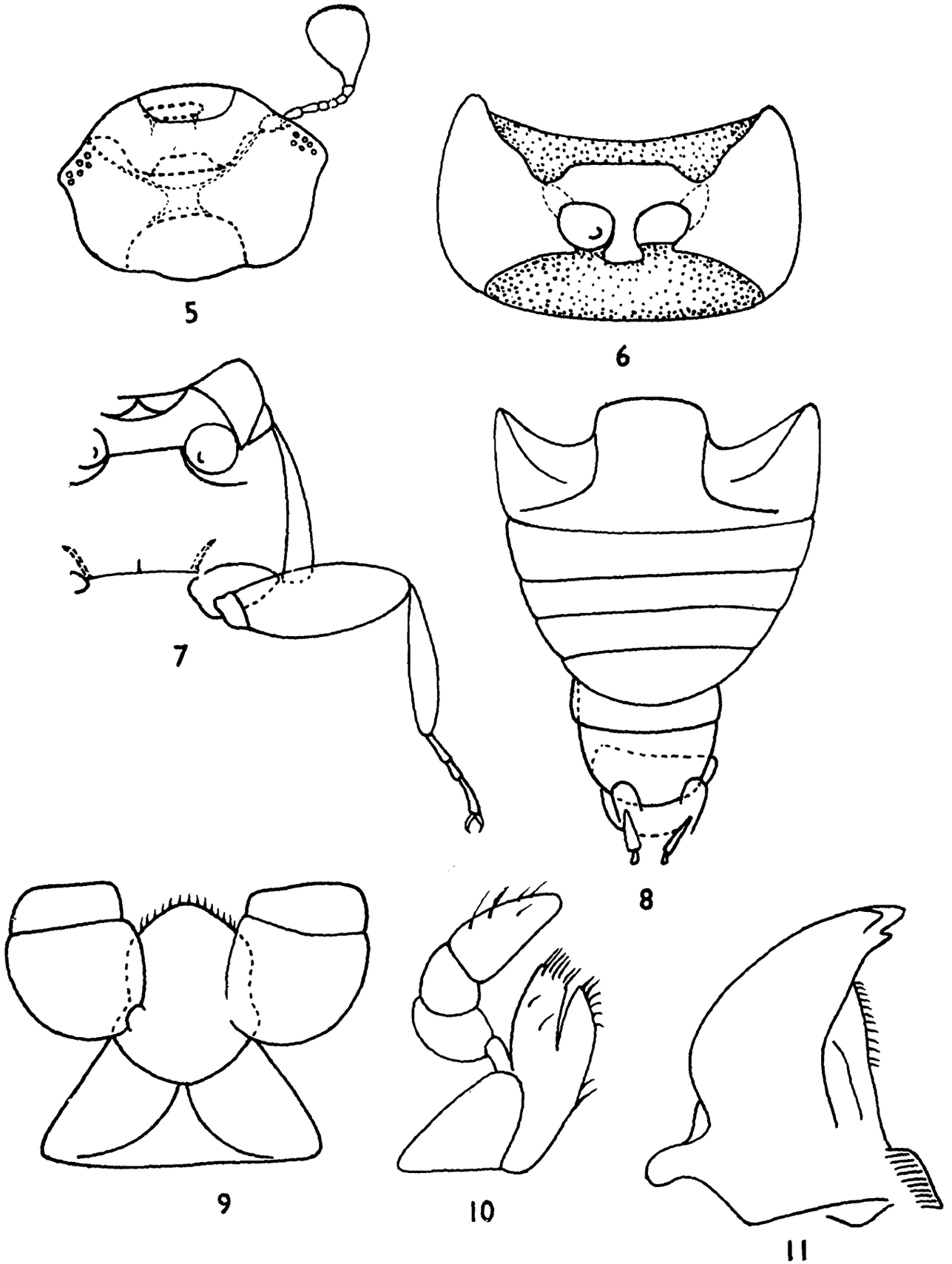


Fig. 3. *Merophysia formicaria* Lucas, Dorsal view.
Fig. 4. *Merophysia formicaria* Lucas, Ventral view.



Figs. 5-11. *Displotera beloni* (Wasmann) : 5, Head, Dorsal view ; 6, Prothorax, Ventral view ; 7, Meso-metathorax, Ventral view ; 8, Abdomen, Ventral view ; 9, Labium, Ventral view ; 10, Maxilla ; 11, Right Mandible, Ventral view.

Elytra and wing : Species apterous ; elytra broad. Epipleura complete, markedly broad at base and progressively narrowed posteriorly.

Legs (Fig. 7) with trochanter short, broad and simple ; femora normally swollen in middle ; tibiae narrowed at apex and without apical spurs ; tarsal formula 3-3-3, segments simple, segment 1 slightly longer than segment 2, apical segment longest and claws simple.

Abdomen (Fig. 8) about as long as broad, ventrite 1 longest, intercoxal process broad with apical margin almost straight, femoral lines well developed ; ventrites 2-5 subequal. Ovipositor (Fig. 12) poorly developed ; paraprocts, valvifers and coxites fused, styli short and attached at apex of latter.

Habitat : Myrmecophilous.

Distribution : India, Sri Lanka, Burma, Madeira Is., S. America.

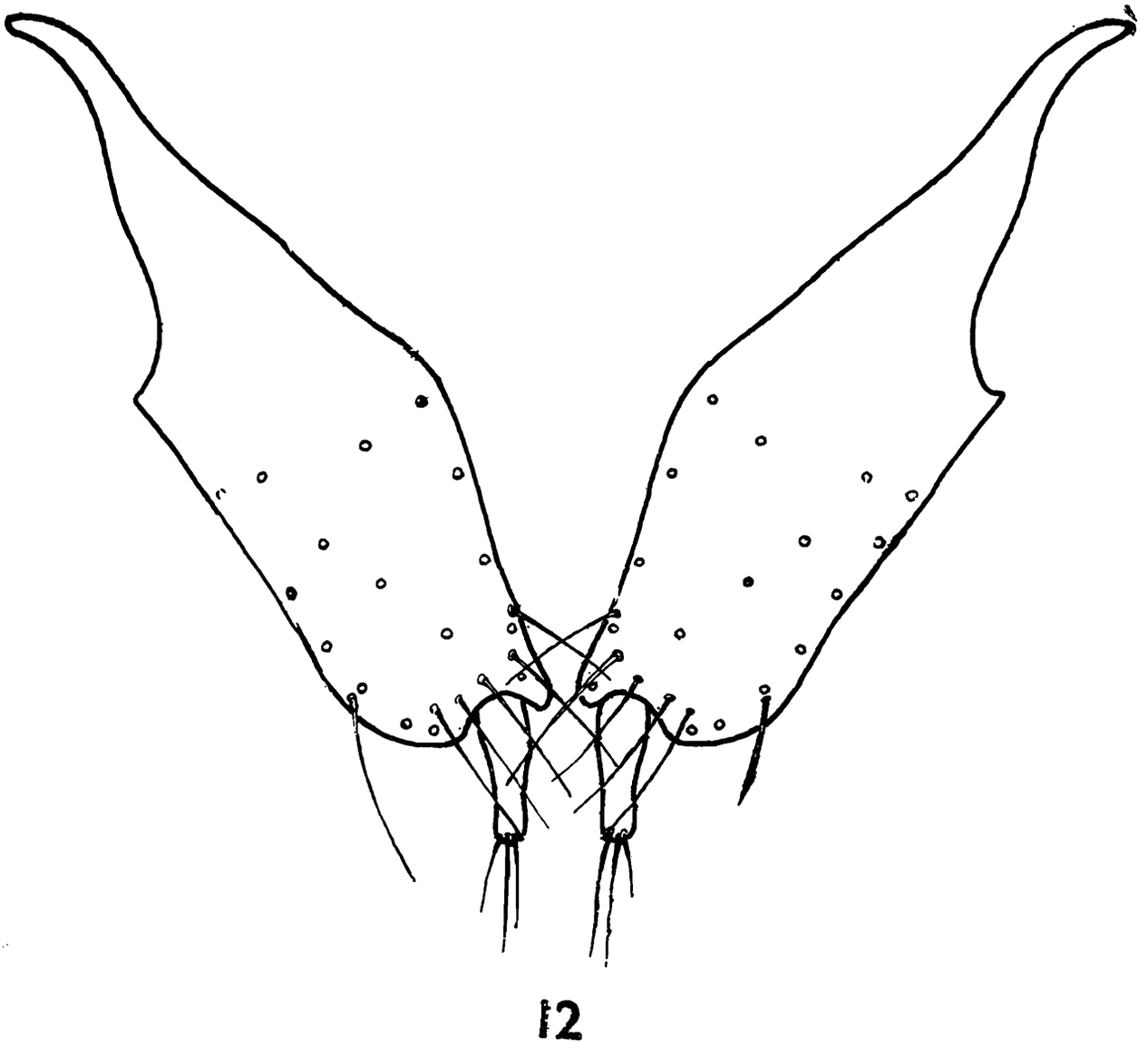


Fig. 12. Ovipositor of *Displotera beloni* (Wasmann).

Displotera beloni (Wasmann)

Coluocera beloni Wasmann, 1899, *Dt. ent. Z.* : 160 (India).

Displotera beloni (Wasmann) : Dajoz 1973-75, *Ent. scand. Suppl.* 4 : 201.

Displotera grandis Dajoz, 1973-75, *Ent. scand. Suppl.* 4 : 201 (Sri Lanka) ; *Syn. nov.*

This species is closely related to *Displotera maderae* (Wollaston) but can be distinguished by its prothorax more distinctly narrowed in front, elytra more distinctly wider than prothorax and species larger. Dajoz (1973-75) described *D. grandis* from Sri Lanka. In the present study we have examined the 'types' of *D. beloni, D. grandis* along with several specimens collected from Calcutta (India) and found no difference among them. Therefore, *grandis* Dajoz has been synonymised with *beloni* (Wasmann).

General shape (Fig. 1) short-elliptical, convex, shiny, finely punctate-pubescent, uniformly yellowish-brown to reddish-brown. Head markedly transverse, front margin rounded ; eyes formed of 6 ocelli arranged in two longitudinal rows : 3 and 3 ; antenna short, about as long as head, normally resting in antennal cavity in repose. Prothorax strongly transverse, narrowed in front, front margin emarginate, front angles projecting and slightly rounded, hind angles almost right angle, lateral and front margin of pronotum finely bordered. Scutellum transversely triangular, impunctate. Elytra about as broad as long, about as wide as prothoracic base in front, slightly wider in anterior one-third and then narrowed posteriorly, sides evenly rounded and finely bordered, finely punctate-pubescent. Legs pubescent. Sterna more pubescent than dorsum.

Measurements : Total length 1.52-1.57 mm., width of head across eyes 0.60 mm., length of antenna 0.39-0.40 mm., width of prothorax across base 1.02-1.10 mm. ; length of elytra 1.15-1.24 mm. and width 1.16-1.24 mm.

Material examined : 'Type' of *Coluocera beloni* Wasmann, India (Institut Royal des Sciences Naturelles de Belgique, Brussels).

'Types' of *Displotera grandis* Dajoz : *Type*, Ceylan North Central, Ambagaswewa, 3.ii. 1970, Mussard Besuchet Löbl ; *Paratypes* 2 ex., Ceylan Southern, Yala Nat. Park, 24.i. 70, Mussard Besuchet Löbl ; *Paratype* 1 ex., Ceylan Northern, Pulian Kulam, 6.ii.1970, Mussard Besuchet Löbl ; *Paratype* 1 ex., Ceylan Northern, Madhu Road, 5.ii.1970, Mussard Besuchet Löbl ; *Paratype* 1 ex., Ceylan Northern, Mullaitivu, 6.ii.70, Mussard Besuchet Löbl (Mus. Hist. Nat., Genéve) ; 7 ex., India : West Bengal, Calcutta, 21.xi. 1975, P. K. Maiti, ant's nest. The specimens collected from Garcha Road, Calcutta, from the nests of ants belonging to the species *Paratrachina* (*Paratrachina*) *longicornis* Latreille. These beetles were marching with procession of the ants when the latter were transporting their eggs from one nest to the other.

Distribution : India : West Bengal ; Sri Lanka.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. B. K. Tikader, Director, Zoological Survey of India for providing laboratory facilities, to Dr. P.

'Type' referred here is the holotype.

K. Maiti for the material of *D. beloni* along with its behavioural information, to Mr. R. N. Tiwari for identification of ant material. They express their sincere thanks to Dr. I. Löbl of Museum d' Histoire Naturelle, Genéve and Institute Royal des Sciences Naturelles de Belgique, Brussels who kindly provided them the opportunity to examine the 'type' material of *Displotera grandis* Dajoz and *Coluocera beloni* Wasmann respectively.

References

Crowson, R. A. 1955. *The natural classification of the families of Coleopetra.* Nathaniel Lloyd, London.

Dajoz, R. 1973-1975. Coleoptera : Lathridiidae de Ceylan 1. *Ent. scand. Suppl.*, **4** : 199-207.

Hetschko, A. 1926. Lathridiidae. In *Coleopterorum Catalogus* **85**, W. Junk, Berlin.

Reitter, E. 1887. *Bestimmungs-Tabelle der europäischen Coleopterem.* **3**, ed. 2, Brunn : 9-10 (not seen).

Sengupta, T. and Crowson, R. A. 1973. A review of the classification of Cerylonidae (Coleoptera, Clavicornia). *Trans. R. ent. Soc. Lond.*, **124**(4) : 365-446.