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A new subfamily of Merophysiidae (Clavicornia: Coleoptera) and descriptions of two new species of *Gomya* Dajoz and its larva

by

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With 21 Text-figures

Abstract

A new subfamily Derolathriinae for the genera *Derolathrus* Sharp and *Gomya* Dajoz is established under the family Merophysiidae. Two new species *Gomya troglophila* and *Gomya ceylonica* from Fiji and Sri Lanka and larva of *Gomya troglophila* are described.

Crowson (1955) separated the subfamily Merophysiinae from the family Lathridiidae and erected a new family on the basis of open front coxal cavities, hidden antennal insertions, antennae less than 11 joints, maxilla with distinct galea and lacinia and 5 pairs of abdominal spiracles. He recognised two subfamilies Holoparamecinae and Merophysiinae under it, former are mould feeder and usually live in vegetable detritus and later are myrmecophilus. Sharp (1900) in Fauna Hawaiiensis described a monotypic genus *Derolathrus* from Sandwich Island and placed it under the family Colydiidae for its 4-4-4 tarsal formula. He also mentioned that *Derolathrus* have considerable similarities with the genus *Holoparamecus* Curtis. Dajoz (1973) described another genus *Gomya* from Mascareignes Islands and placed it near *Holoparamecus* and also mentioned that it has some similarities with Central American genus *Lycoperdinella* Champion. I have studied here a collection made by P. Strinati and V. Aellen in caves of Fiji Islands, in which I discovered a member of the genus *Gomya*. Another species of *Gomya* has been collected by Mussard, Besuchet and Löbl from Sri Lanka. Both are described below as new. The adults and larvae from Fiji Island have been studied in details by making slide preparation. I have also examined the type specimen of *Derolathrus atomus* Sharp (Fig. 4) along with two examples from Solomon Island and Guadeloupe identified by John F. Lawrence as *Derolathrus* sp. present in British

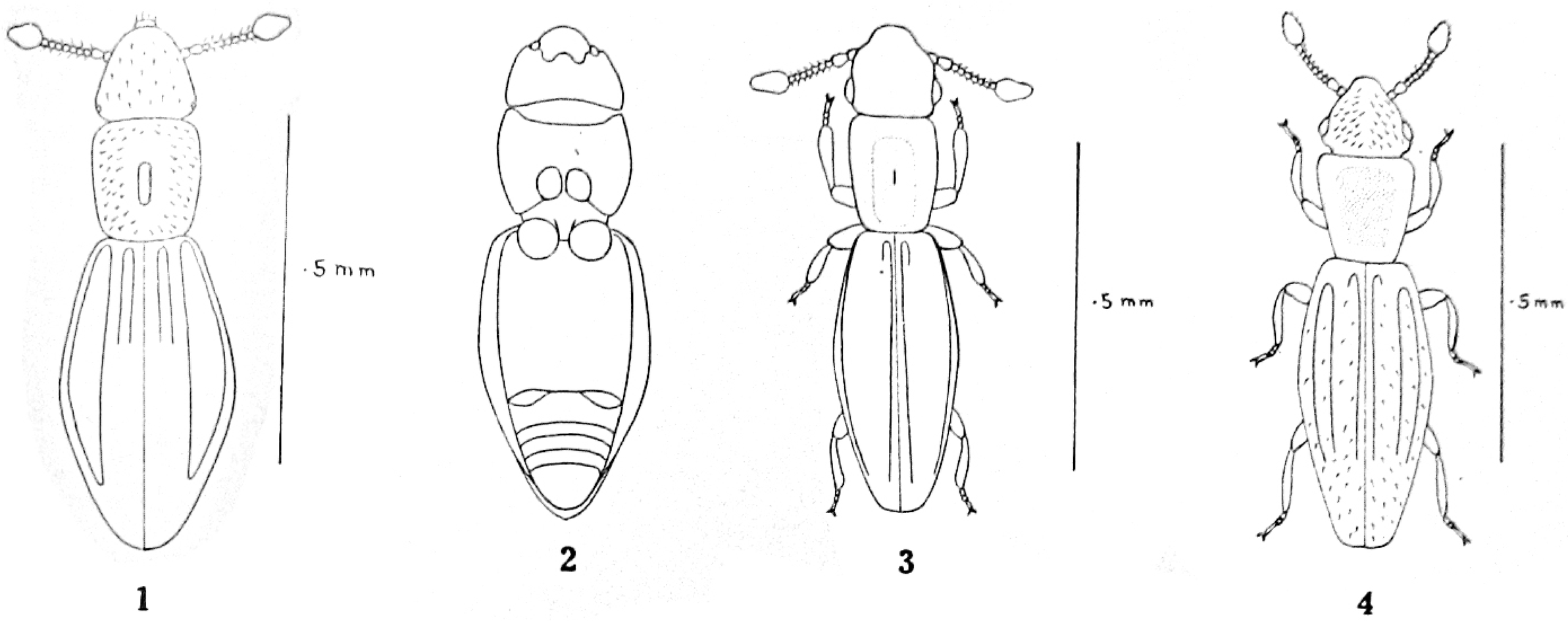
Museum (Nat. Hist.), London. The Tarsi of *Derolathrus atomus* apparently seems to be 3-3-3, Mr. R. D. Pope of British Museum also examined this species and has similar opinion. It is necessary to make slide preparation to prove that *Derolathrus atomus* has 3-3-3 tarsal formula. Moreover, general appearance including dorsal, ventral surface and antenna are similar to Dajoz's genus *Gomya*. No attempt has been made here to synonomize these two genera unless tarsal formula of *Derolathrus atomus* is confirmed. General appearance of *Lycoperdinella* is more similar to *Holoparamecus*, but unlike latter genus and *Derolathrus* lateral margins of prothorax bordered and serrated. To incorporate *Derolathrus* and *Gomya* in Merophysiidae, it is needed to erect a separate subfamily for these two genera.

Chief differences among the subfamilies Merophysiinae, Holoparamecinae and Derolathriinae subfam. nov. are as follows:

Merophysiinae	*Holoparamecinae*	*Derolathriinae subfam. nov.*
1. General appearance broadly elongate or oval	Narrowly elongate	Narrowly elongate
2. Fronto-clypeal suture on head present	Present	Absent
3. Maxillary palpi 4-segmented and normal	4-segmented and normal	3-segmented and somewhat acciculate (Fig. 12)
4. Labium with mentum transverse	Transverse	Elongate
5. Mandible with 2 apical teeth and inner one dentate	2 apical teeth and inner one dentate	3 simple apical teeth
6. Antennal Club 1-jointed and its apical margin truncated	1 or 2-jointed and its apical margin usually truncated	1-jointed, elongate and its apical margin rounded
7. Antennal cavity present on ventral surface	Absent	Absent
8. Prothorax broad and lateral margin smooth	Usually elongate and constricted near base	Elongate and basal constriction absent
9. Metasternum transverse	As broad as long	Markedly long
10. Coxal lines present	Absent	Absent
11. Coxae widely separated	Closely situated	Closely situated
12. Metendosternite simple and represented by two appophysis	Well developed and anterior tendons closely situated	Simple and represented by two appophysis
13. Distribution Cosmopolitan, and myrmecophilus	Cosmopolitan, and feed on mould and live in vegetable detritus	Mostly Islandic, and recorded from cave

General appearance minute and as figured (Figs. 1, 2).

Head (Fig. 5) as broad as long, tempora short with more or less distinct neck constriction, eyes well developed or minute and coarsely faceted, fronto-clypeal suture absent, tentorium simple and represented by two arms which are connected by a corpotentorium. Antenna short, 10-jointed, scape and pedicel almost equal, joints 3-9 short and equal, joint 10 forming a large and elongate club. Mandible (Fig. 10) with well developed mola and three apical teeth. Maxilla (Fig. 12) with distinct lacinia and galea,



FIGS. 1-4.

1. *Gomya troglophila* n. sp., dorsal view. — 2. *Gomya troglophila* n. sp., ventral view. 3. *Gomya ceylonica*, dorsal view. — 4. *Derolathrus atomus* sharp, dorsal view.

palpi 3-segmented, segment 1 short, segment 2 markedly enlarged, apical segment narrow and elongate. Labium with mentum elongate, palpi 3-segmented and its shape as figured (Fig. 6).

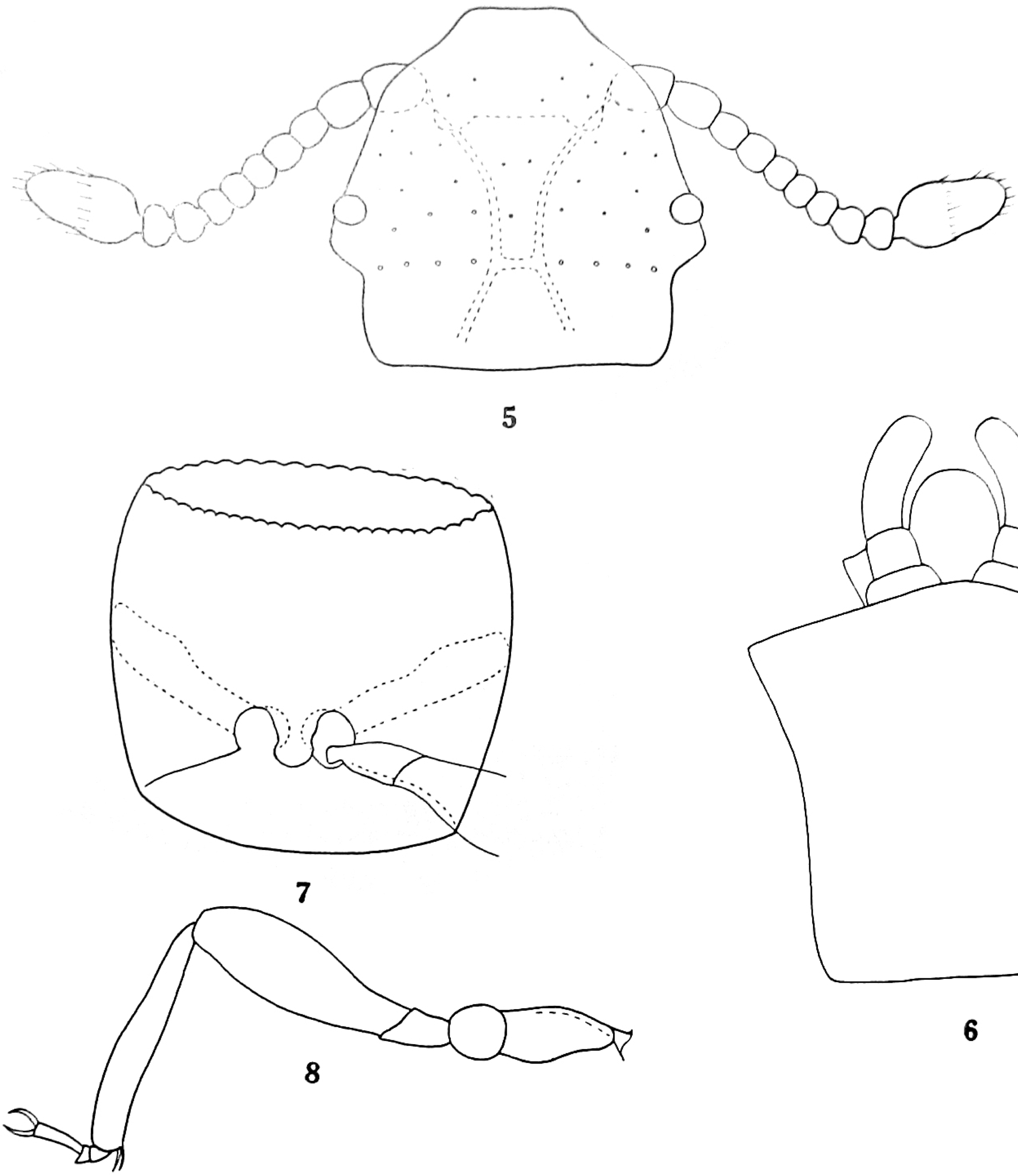
Prothorax (Fig. 1) slightly elongate and narrowed posteriorly, lateral margins smooth, front margin finely serrated, pronotal disc slightly depressed, prebasal impression absent. Front coxae rounded, closely situated, cavities open behind, prostanal process moderately narrow and its shape as figured (Fig. 7).

Meso-metathorax (Fig. 9) mesocoxae closely situated, sternal fitting between them in a narrow straight line and mesoepimera short. Metasternum markedly elongate, median impressed line absent, metacoxae widely separated.

Wing and Elytra: Wing simple and venation reduced. Elytra (Fig. 13) completely covering the abdomen, epipleura narrow, puncturation minute and irregular.

Legs (Fig. 8) moderately long, trochanter simple and long, femora swollen towards apical half, tibiae slightly broaden towards apex and with a pair of normal spurs. Tarsal formula 3-3-3, segments simple, segment 1 longer than 2, segment 3 rather markedly long, claw simple.

Abdomen (Fig. 2) ventrites 5 and freely articulated, ventrite 1 slightly longer than ventrite 2, intercoxal process broad and its apical margin broadly rounded, femoral lines absent, ventrites 2-4 short and equal, ventrite 5 distinctly longer than ventrite 4. Genitalia reduced and as figured (Fig. 11).



FIGS. 5-8.

Gomya troglophila n. sp.

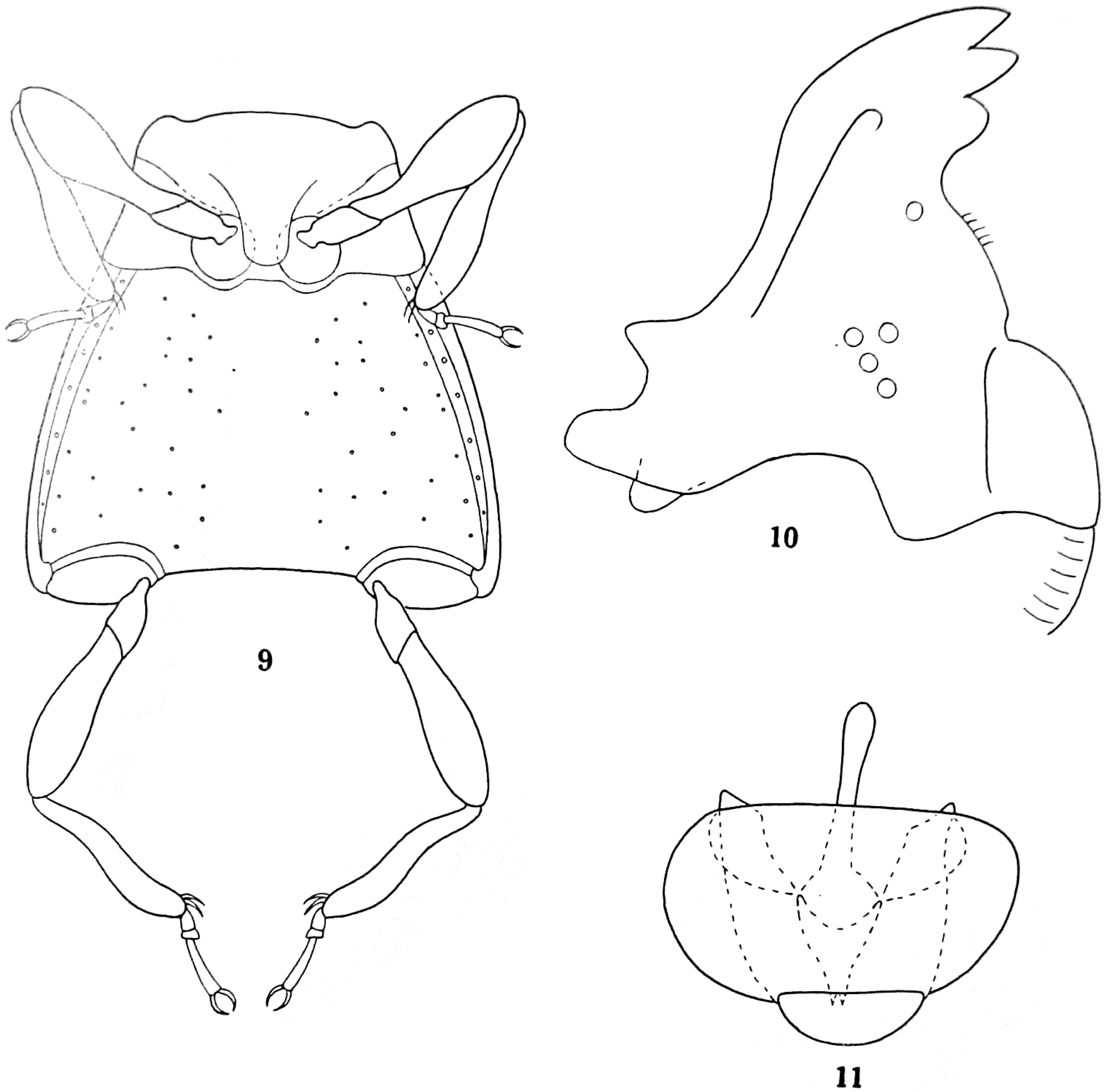
5. Head, dorsal view. — 6. Labium. — 7. Prothorax, ventral view. — 8. Front leg.

Gomya troglophila sp. n.

Length 0.73 mm.

General appearance minute, narrow, elongate and brownish. Head narrowed in front, neck constriction distinct, eyes minute and represented by a small black dot, puncturation on vertex distinct and sparse, short recumbent pubescence directed pos-

teriorly. Antenna short and fringed with short hairs. Prothorax almost as broad as long, narrowed posteriorly, angles more or less rounded. Pronotal disc glabrous and with a narrow elongate, deep distinct groove, puncturation similar to that of on head and pubescence short and directed inwards. Elytra broadest across posterior two-thirds, each



FIGS. 9-11.

Gomya troglophila n. sp.

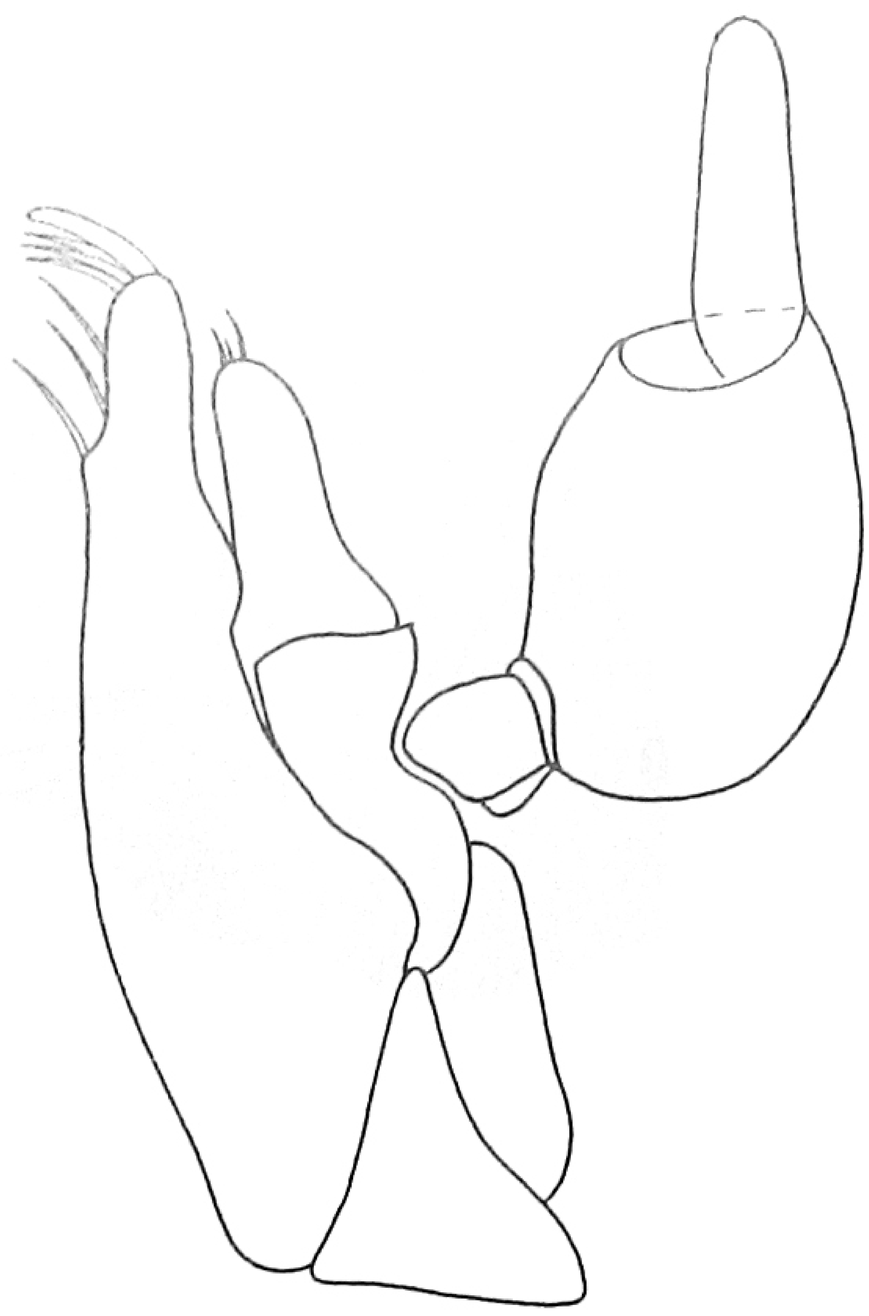
9. Meso-metathorax, ventral view. — 10. Mandible. — 11. Genitalia.

elytra with a small pocket at base (Fig. 13), and two pairs of indistinct striae, which are prominent at base. Scutellum absent.

Holotype and paratypes, Fiji: Viti Levu: Wailotua Cave, prélèvement de guano humide de Chiroptères, 30.iii.1977, leg. P. Strinati/V. Aellen. Holotype and 170 paratypes in Geneva Museum and 4 paratypes in Zoological Survey of India, Calcutta, India.

Gomya ceylonica sp. n.

This species can easily be separated from *Gomya troglophila* by its well developed eyes, pronotum without median longitudinal groove, and elytra broadest near middle. *Gomya ceylonica* is closely related to *Gomya insularis* Dajoz and can be separated by its prothorax being more distinctly elongated, punctuation and pubescence dorsal surface



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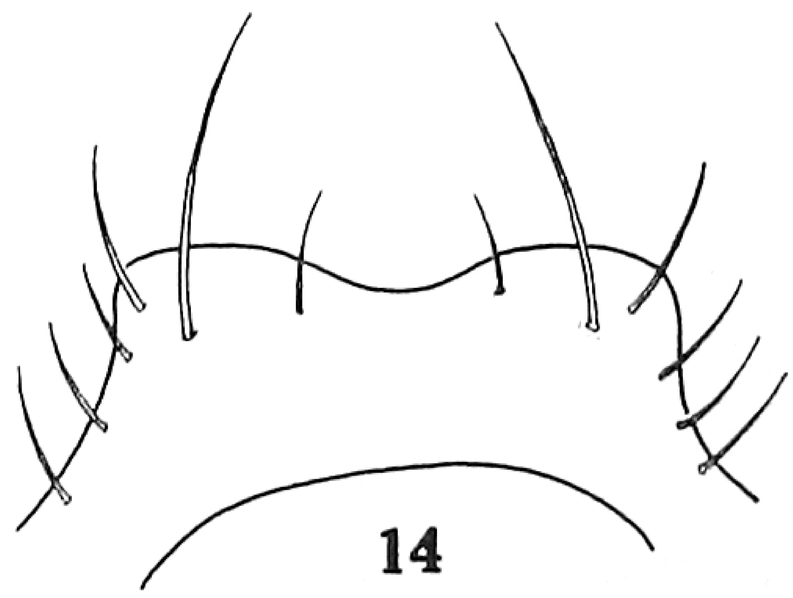

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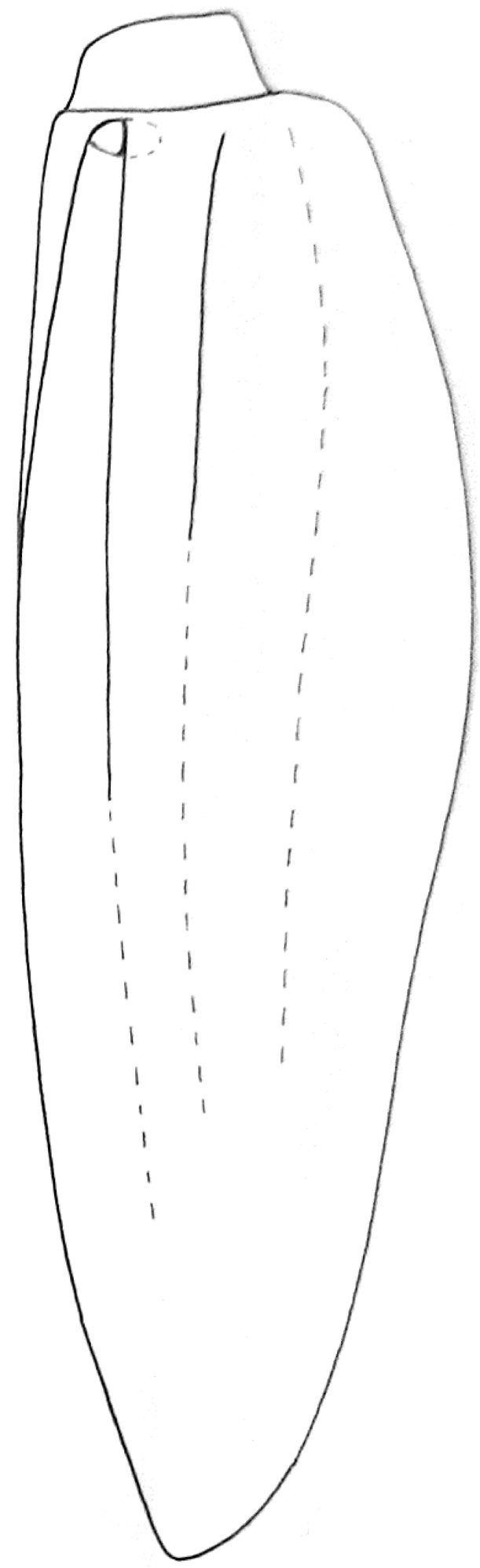

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FIGS. 12-14.

Gomya troglophila n. sp.

12. Maxilla. — 13. Elytra. — 14. Labrum.

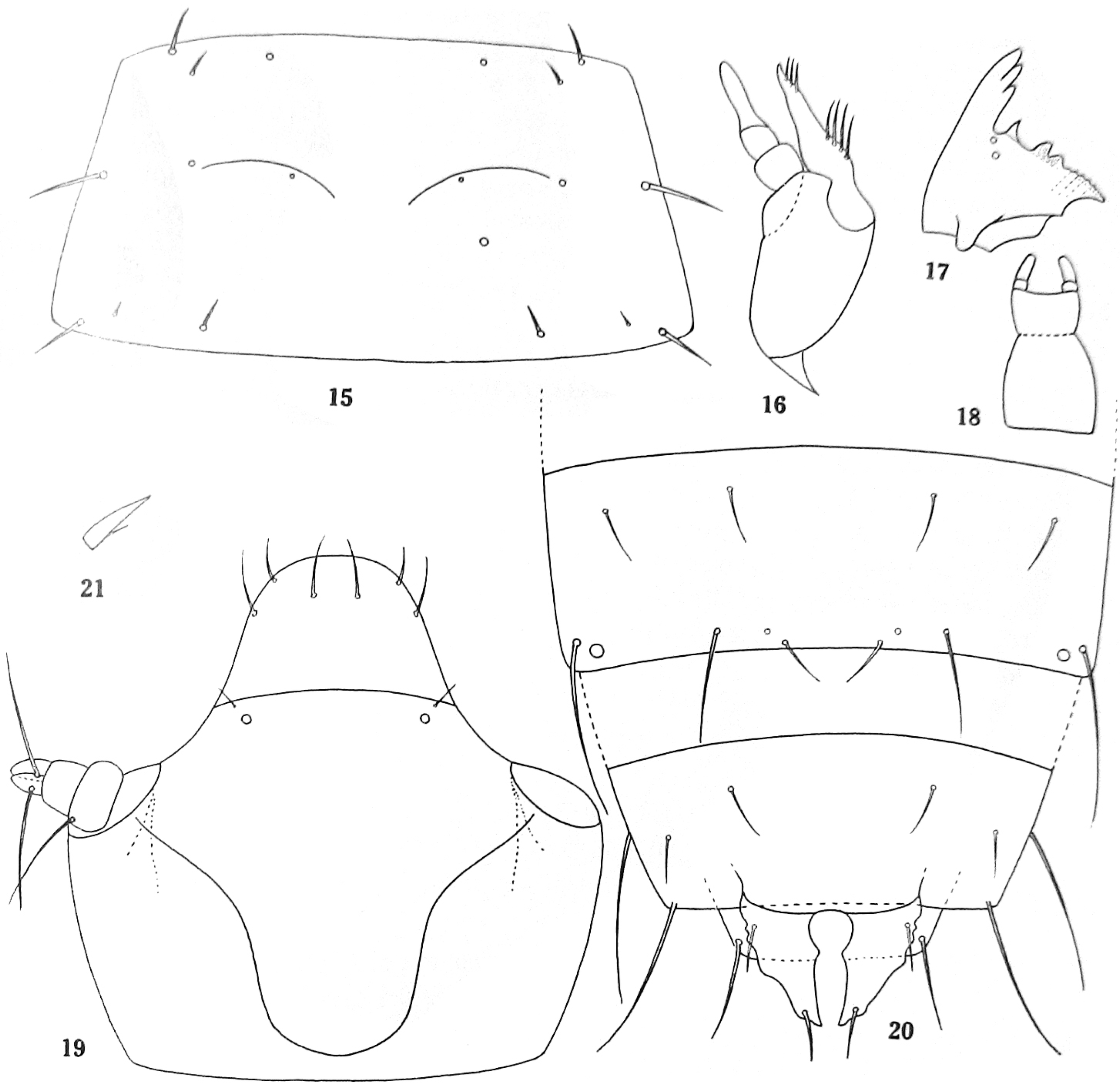
not distinguishable, posterior angle of tempora of head rounded, and each elytron with a more or less distinct outer striae.

Length 0.76 mm.

General appearance (Fig. 3) minute, narrow, elongate and brownish. Head broadest across eyes and narrowed in front, neck constriction not distinct. Puncturation and pubescence not distinctguishable. Eyes large and moderately coarsely faceted. Prothorax narrow and elongate, angles more or less rounded. Pronotal disc depressed with a trace

of median short longitudinal impression, puncturation and pubescence not distinguishable. Elytra narrow, broadest across near middle, striae near scutellum and outer margin almost extending to the apex, puncturation and pubescence not distinguishable. Scutellum absent.

Holotype, Sri Lanka, North Western Rajakudaluwa, 31.i.1970, leg. Mussard, Besuchet and Löbl, in Geneva Museum.



FIGS. 15-21.

Larva of *Gomya troglophila*.
15. Pronotum. — 16. Maxilla. — 17. Mandible. — 18. Labium.
19. Head, dorsal view. — 20. Posterior segments of abdomen, dorsal view. — 21. Claw.

DESCRIPTION OF LARVA OF *Gomya troglophila* n. sp.

General appearance minute (0.9 mm in lenght), moderately broadly elongate, flattened, somewhat parallel-sided and slightly narrowed in front and behind, dorsal surface pale yellowish with darker urogomphi and mouth parts. Head as broad as long, frontal suture Cucujoid-type, without endocarina or metopic suture, arrangement of setae on dorsal

surface as figured (Fig. 19), ocelli not distinguishable. Antenna rather short, segment 1 short and transverse, segment 2 narrower and slightly longer than segment 1, segment 3 narrow and elongate, sensory appendage lying ventrally and as long as segment 3. Mandible (Fig. 17) triangular with well developed chitinised mola, 3 apical teeth, prosthecа transparent, narrow and pointed at apex. Maxilla (Fig. 16) well developed, mala with single apical spine, dorsal rows of setae on inner margin of mala restricted at apical and basal halves, stipies markedly large, and palpi 3-segmented, progressively narrowed at apex and apical segment markedly elongate, cardo rather minute and triangular, maxillary articulating area absent. Labium (Fig. 18) almost transparent, rather poorly marked, mentum elongate, palpi 2-segmented. Pro, meso and metathorax very slightly narrowed in front, arrangement of setae on tergite as figured (Fig. 15). Abdominal segments almost equal in length, last two segments slightly narrowed posteriorly, arrangment of setae on targite as figured (Fig. 20). Urogomphi (Fig. 20) well developed, somewhat Rhizophagid-type, pregomphal process absent. Legs well developed, coxae moderately closely situated, claws (Fig. 21) simple with single transangular seta. Thoracic and abdominal spiracle (Fig. 20) annular. 20 larvae in Geneva Museum.

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REFERENCES

Champion, G. C. 1913. Notes on various Central American Coleoptera with descriptions of new genera and species. *Trans. ent. Soc. Lond.* part I: 114-115.

Crowson, R. A. 1955. The Natural classification of the families of Coleoptera. *London, Nathaniel Lloyd.*

Dajoz, R. 1973. Coléoptères Lathridiidae de Madagascar et des Mascareignes. *Bull. Mus. natn. Hist. nat. Paris*, 3e Sér., nº 85: 1043-1055.

Sharp, D. 1900. Fauna Hawaiiensis. 3: 430-431, *Cambridge, England.*

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