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Revision of Ptiliidae (Coleoptera) occurring in the Mascarenes, Seychelles and neighbouring islands

by **C. Johnson**

Abstract: 13 genera (4 new) and 47 species (28 new) are recorded from the islands of the Mascarenes, Seychelles, Comores and Aldabra. Keys, descriptions, collection data, distribution and figs are given for all taxa, whose bionomics and status are summarised. – New genera described: *Gomyella* (pantropical), *Kimoda* (Oriental), *Leptinla* (Mauritius), *Chirostirca* (palaeotropical). – New species described: *Bambara dybasi* (Mauritius, Madagascar), *Gomyella aptera* (Mauritius), *G. apteroides* (Mauritius), *G. canaliculata* (type species, Reunion), *G. carinata* (Reunion), *G. longicornis* (Reunion), *G. obscura* (Silhouette), *G. parva* (Reunion), *G. schauenbergi* (Reunion), *G. similata* (Reunion), *G. simplex* (Reunion, Mauritius), *Actidium mascarenhasi* (Mauritius, Mahé), *Dipentium parvum* (Reunion, Mauritius, Rodriguez), *Kimoda globosa* (type species, Reunion, Mauritius, Rodriguez, Sri Lanka, India), *Ptinella dentata* (Reunion, Mauritius), *P. gomyi* (Reunion, Mauritius), *P. mystica* (Reunion), *P. parva* (Reunion, Mauritius), *P. similata* (Reunion), *Leptinla elongata* (type species, Mauritius), *Ptinellodes aldabricus* (Aldabra), *Ptiliodes cavifrons* (Reunion), *P. purpurascens* (Reunion), *Acrotrichis confusa* (Reunion, Brazil), *A. dissona* (Reunion), *A. bidentata* (Reunion, Mauritius), *A. blandula* (Mauritius), *Chirostirca gomyi* (type species, Mauritius). – New combinations: *Dipentium castaneum* (Britten) [also *D. japonicum* (K. Sawada), Japan; *Gomyella rufotestacea* (Matthews), West Indies]. – New synonymy: *Bambara brunnea* (Britten) (=*suteri* (Dybas)); *Actinopteryx lancifer* Fauvel (=*colossus* Deane, *acutangula* (Deane), *rufescens* Britten); *A. reflexa* Britten (=*acuminata* Britten, *torretassoi* Rosskothen) [also *Mikado* Matthews, 1889 = *Philagarica* Deane, 1930, Japan and Australia].

Key words: Coleoptera Ptiliidae – Seychelles, Mascarenes, Comores, Aldabra – taxonomy – bionomics.

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INTRODUCTION

Members of the family Ptiliidae are particularly characterised by their minute size, and antennal and wing structure (Figs 2–3). The latter consists, in most species, of a very narrow but long membrane bearing numerous long hairs, hence the popular name of «Feather-Wing Beetles». Beyond Europe they are very little known, and the tropics abound in many undescribed genera as well as species. The present work deals with the Ptiliid fauna of a well defined area, namely the islands of the Madagascan sub-region, but excluding Madagascar itself. Preliminary studies on the Madagascan Ptiliid fauna reveal it to be clearly of a continental type, but one which bears little resemblance at the species level to that of continental Africa. It is hoped to deal with this fauna separately in the future. The area actually covered by the present study is much smaller than the theoretical one outlined above in that Ptiliid collections are absent from several groups of islands. Thus our material covers all the Mascarenes, most of the granitic Seychelles islands, the atoll of Aldabra, but only Moheli in the Comores.

Historical Review

Existing knowledge of Ptiliidae is very scant in the area under study. The main work is by Britten (1926b), who described ten new species and recorded three others from material collected in the Seychelles during 1908/09 by the Percy Sladen Trust Expedition. His *Throscidium testaceum* and *T. brunneum* were transferred to the new genus *Eurygyne* by Dybas (1966), and the former redescribed when *Eurygyne* was synonymised with *Bambara* Vuillet (Johnson, 1968). The two species of *Acrotrichis* were subsequently revised by Johnson (1969).

Vinson (1967) recorded three Ptiliidae from Mauritius, of which only *Acrotrichis fascicularis* (Herbst) was identified to species. As there is only a single authentic record of this holarctic species from the southern hemisphere – in New Zealand as an adventive (Johnson, 1982a), the

record is thought to be erroneous. It is unfortunate that I was unable to locate Vinson's specimens for study and dissection

Some aspects of the present paper have already been referred to (JOHNSON, 1982a, 1982b) when the paper was in press elsewhere. Relevant information which has therefore appeared prematurely is included here with references as appropriate.

Material

The present study is based upon nearly 2700 specimens from the island groups of the Mascarenes (2369 ex.), Seychelles (209 ex.), Aldabra (111 ex.) and the Comores (5 ex.).

1. Mascarenes. The vast majority were collected or made available through my colleague Yves Gomy, formerly of St. Paul, Reunion, during the period 1966 – 1973. Herbert Franz collected 612 ex. during a visit to Reunion in 1969, and during 1974/75, P. Schauenberg collected 251 ex. on Reunion and Mauritius. Numbers of specimens available from the islands are Reunion (1980), Mauritius (384) and Rodriguez (5).

2. Seychelles. All the species recorded by BRITTEN (1926b) were studied, although it was not thought necessary to re-examine each of the 138 specimens. Thus I had access to the holotypes and a short series in BMNH, and short series labelled as paratypes in both MM and OUM. Britten's data is quoted in the present work since the actual specimens only have island data and numbers. The number of specimens studied by myself is indicated. J. Beneteau collected 40 ex. in 1971 during a survey of maritime localities, and these were made available through Y. Gomy. Other material was collected as follows: July/August 1972, 21 ex., P.L.G. Benoit and J.J. Van Mol; January 1975, 1 ex., P. Schauenberg; August 1975, 1 ex., S.M. Bunt; April 1976, 8 ex., G. Kibby.

3. Aldabra. Investigations on this atoll by the Royal Society during 1974/75 produced 111 specimens extracted by funnels from diverse decaying vegetation.

4. Comores. The only specimens (5 ex.) from these islands were collected by Y. Gomy in August 1969, during a brief stopover in Moheli.

In order to gain an insight into the relationship of the Ptiliid fauna of these islands to those of the larger land masses bordering the Indian Ocean, a considerable number of additional specimens from the Old World tropics and Australasia were examined. These furnished valuable distributional data, and clarified a number of problems.

The source of specimens referred to in this work is indicated by the following abbreviations:

BMNH = British Museum (Nat. Hist.), London;
HF = Herbert Franz collection, Mödling;
IRSNB = Institut Royal des Sciences Naturelles, Brussels;
MCSNM = Museo Civico di Storia Naturale, Milan
MG = Museum D'Histoire Naturelle, Geneva;
MM = Manchester Museum;
MRAC = Musée Royal de l'Afrique Centrale, Tervuren;
OUM = Oxford University Museum;
SAM = South Australian Museum, Adelaide;
ZIL = Zoological Institute, Lund;
ZMC = Zoological Museum, Copenhagen;
ZSI = Zoological Survey of India, Calcutta.

Names of collectors are abbreviated to their initials, to save further space: C.M.C. = C.M. Courtois; G.K. = G. Kibby; H.F. = H. Franz; J.B. = J. Beneteau; J.J.V.M. = J.J. Van Mol; P.L.G.B. = P.L.G. Benoit; P.S. = P. Schauenberg; P.S.T.E. = Percy Sladen Trust Expedition; Y.G. = Y. Gomy.

Holotypes of most species collected by Y. Gomy will be deposited in MG. Where the series permits, other specimens will be placed elsewhere, including MG; Naturhistorisches Museum, Basel; Hungarian Natural History Museum, Budapest.

Methods

A brief description of the various techniques used in studying Ptiliids is given elsewhere (Johnson, 1982a), all of which have been used in the present work. Figures were drawn with the aid of a camera lucida attachment fitted to a monocular microscope. Scales are indicated on each plate by a line representing 0.1 mm, and the same structures are drawn to an identical scale on any given plate to facilitate comparison. On a number of plates, antennal length rather than structure is indicat-

ed by dotted lines, and the projecting apex of the abdomen has not been drawn. An asterisk* is used in the text following a figure number to indicate genital figures drawn from organs treated with KOH.

Body length is based upon dry-mounted specimens, and is measured from the front of the head to the elytral apex. In genera where the abdomen projects beyond the elytra in life, shrinkage on drying causes is to become telescoped inwards to a variable extent.

Identification of many Ptiliids amongst the larger genera and smaller forms can be a difficult matter, especially in view of the different techniques of preparation which need to be adopted. Problems are also caused by the minute size of the beetles, the often very slight and subtle external characters, as well as the laborious and very delicate task of preparing genitalia – an important pre–requisite in most cases for accurate identification.

Bionomics and Status

Ptiliids feed on minute moulds and fungal debris, and can often be present in very large numbers when conditions are suitable. Thus they occur in a wide range of microhabitats characterised by decay and high humidity, of which the following are the main ones: leaf litter and humus, moss, grass tussocks, vegetation and vegetable debris, compost heaps, dung heaps, haystack bottoms, carcases, dung, fresh and decaying fungi, under bark and in rotten wood. More restricted situations are in the nests of birds and mammals, ants and termites, in caves, and in decaying seaweed on the shore.

For each species, climatic range, habitat association, microhabitat preferences and monthly captures within the islands are summarised under 'Bionomics'. Climatic range is a function of the diverse climate of Reunion, which ranges from tropical (0 – 600 m) through subtropical (600 = 1200 m) to temperate (1200 – 3069 m). Other islands fall within the tropical range. Habitats occurring in varying proportions on the islands are classified under the three headings of natural woodland/ forest; anthropogenic zone (plantations, farms, towns, etc.); seashore, or land coming under the influence of salinity. Ptiliids associated with these habitats are classified as silvicolous, anthropophilic or halophilous species respectively. All captures were evaluated on this basis in order to provide data for both bionomic and status deductions.

Before the islands were settled by man, they were forested to the tops of the mountains according to early explorers (Keller, 1901;

LIONNET, 1972). Thus the original autochthonous Ptiliid fauna was a forest-adapted one, and the only other habitat available was the seashore. This hypothesis serves as a basis for deducing the status of all species. Silvicolous species are considered to be endemic if they are unknown outside the present islands. Anthropophilic species are therefore immigrants, although in most cases it is impossible to decide whether their presence on the islands is due to inadvertent introduction by man or natural causes such as wind dispersal. Halophilous species are considered to be native, although, again, it is uncertain as to whether or not man has played any role in their transport to the islands.

Nomenclature

Detailed generic and other synonymies listed by CSIKI (1911) are not repeated here in view of their limited value to the present study. Generally, original descriptions and the more important taxonomic references are given.

SYSTEMATIC SECTION

Family description

Staphylinoid Coleoptera (CROWSON, 1955). Very small, 0.4 – 1.3 mm, largest tropical ones c. 2.0 mm if extended abdomen included. Antennae usually 11-segmented, including loose 2 to 3-segmented narrow club, segments with setae which are often long; basal two segments characteristically large and broad, stem ones always thin and often fragile (Fig.2); antennal insertions below margin of head. Eyes usually present, although reduced or absent in certain polymorphic groups, e.g. *Ptinella* and allies. Elytra long and apically rounded, ± covering abdomen, or short and truncate, thus exposing upto 5 abdominal segments in life in many species (much shrunken in dried specimens); scutellum large, triangular; epipleural carina sometimes present, epipleura mostly little developed ventrally. Body occasionally de-pigmented in polymorphic forms especially. Prosternum rarely with small intercoxal process, procoxae usually ± contiguous; antennal grooves usually absent. Mesosternum with disc often elevated or ornamented with a median carina; ; mesocoxae ± contiguous usually; front angles rounded or toothed; hind margin straight to arcuate, hind angles distinct at sides or

effaced and removed from sides. Metasternum rarely with distinct episterna ventrally; disc rarely with metasternal lines; metacoxae rarely contiguous, separation ranging to wide, usually with well-developed coxal plates on at least their inner half; tarsi apparently 3-segmented, very small and fine. Abdomen with 6 visible ventrites as a rule, male with last ventrite reduced to a small plate (genital plate) internally covering an emargination in the penultimate. Male aedeagus mostly without parameres, ranging from symmetrical in middle of abdomen to asymmetrical and located to one side. Female with sclerotised sperm storage organ (spermatheca), often elaborately developed. Wings when present almost always consisting of a single basal strut and a very narrow membrane bearing numerous long hairs (Fig.3); shortened membrane and reduced number of hairs occasionally present.

Key to Genera

1. Globular and highly convex (Figs 40, 43), dorsum glabrous. Mesocoxae very broadly separated, coxal lines present; metasternum produced anteriorly as a broad process and plate attaining base of mesosternal collar, covering inner halves of procoxae when body in repose (Fig. 41) **Kimoda** n. gen.
– Not globular nor so highly convex, pubescent. Mesocoxae contiguous or only slightly separated, coxal lines absent; metasternum without anterior process, procoxae always free 2
2. Metacoxae contiguous (Fig. 45); mesosternum with disc longitudinally carinate, front angles effaced, hind margin straight and slightly oblique (Fig. 4); elytra almost covering abdomen (Fig. 1), pygidial apex without teeth; ventrite 1 with median longitudinal carina. **Bambara** Vuillet
– Metacoxae always separated; ventrite 1 not longitudinally carinate 3
3. Elytra rather long, entire, apically rounded, covering all or most of abdomen, sides widened in basal half (e.g. Fig. 35); body somewhat convex, rather narrow in proportion to convexity 4
– Elytra shorter, ± subtruncate apically, exposing upto 5 abdominal segments, sides not so widened in basal half; body rather flat and broad 6

4. Body broader (Figs 33, 38, 39); mesosternum with front angles strongly toothed, disc longitudinally carinate; metasternum little longer than mesosternum, metacoxae widely separated (Fig. 34); pygidium with apex multi-dentate (Fig. 36). **Dipentium** Johnson
– Body narrower; mesosternum with front angles effaced, disc triangularly elevated; metasternum much longer than mesosternum, metacoxae more narrowly separated; pygidium with apex bidentate at most 5
5. Pronotum not constricted basally, not overlying elytral base (Figs 13–22); mesocoxae ± contiguous; metacoxal separation rather narrow (Fig. 23). **Gomyella** n. gen.
– Pronotum ± constricted in basal half, overlying elytral base (Figs 30, 32); mesocoxae clearly separated by prolongation of mesosternal process; metacoxal sepraration about a third (Fig. 31). **Actidium** Matthews
6. Mesosternum with hind margin ± arcuate, hind angles effaced and separated from body sides, disc convex and somewhat tumid behind, not longitudinally carinate; metacoxal separation about a half (Figs 54, 63); prosternum very wide in front of procoxae; eyes and wings often vestigial; body more weakly sclerotised, de-pigmented; pygidium with apex usually lacking teeth, last 2 tergites large and free 7
– Mesosternum with hind margin straight and oblique, hind angles formed at body sides and distinct, disc convex and usually longitudinally carinate behind; metacoxal separation at most a third (Figs 72, 85, 94, 106); prosternum usually narrower; vestigial morphs absent; body more strongly sclerotised, not depigmented; pygidium large and triangular, composed of last 2 tergites wholly or partially fused together, very rarely separate in female, apex usually with teeth (Figs 73, 87, 88, 121) 9
7. Abdomen exceptionally elongate (Fig. 62); mesosternum with front angles strongly effaced, hind margin posteriorly oblique, disc strongly convex and sharply defined (Fig. 63); pronotum broadest basally, hind angles not produced, hind margin slightly arcuate; elytra narrowed apically. **Leptinla** n.gen.
– Abdomen shorter; mesosternum with front angles toothed, hind margin not directed posteriorly, disc feebly convex but

not sharply defined (Figs 54, 67); elytra not or indistinctly narrowed apically 8

8. Pronotum broadest around middle, hind margin straight, hind angles not produced posteriorly (Figs 47–53). **Ptinella** Motschulsky

– Pronotum broadest basally, hind margin sinuate at sides, hind angles produces posteriorly (Fig. 66). **Ptinellodes** Matthews

9. Mesosternum with hind margin very strongly oblique, disc usually with lateral carinae (Figs 72, 85); metacoxal separation a third 10

– Mesosternum with hind margin slightly oblique, disc without lateral carinae; metacoxal separation rarely a third, usually less (Figs 94, 106, 120); pygidium composed of last 2 tergites completely fused together (Fig. 121) 11

10. Pronotum with hind angles not produced posteriorly (Figs 71, 77, 78); mesosternum broad at sides, disc triangularly elevated with sloping lateral carinae, side arms of collar weakly bent (Fig. 72); pygidium composed of last 2 tergites partially fused in both sexes, apical one greatly reduced (Fig. 73); male genital plate asymmetrical (Fig. 76). **Ptiliodes** Matthews

– Pronotum with hind angles produced posteriorly (Figs 82–84); mesosternum strongly narrowed at sides, disc longitudinally carinate behind and with or without lateral carinae, side arms of collar strongly bent (Fig. 85); pygidium composed of last 2 tergites completely fused in male (Fig. 87), separate in female (Fig. 88); male genital plate symmetrical (Fig. 86). **Actinopteryx** Matthews

11. Pronotum with hind angles not produced posteriorly (Fig. 93); mesosternum with disc somewhat tumid behind but not carinate, side arms of collar straight; metacoxal separation about a quarter (Fig. 94). **Nephanes** Thomson

– Pronotum with hind angles produced posteriorly; mesosternum with disc strongly carinate behind, side arms of collar bent 12

12. Pronotum with side border narrow, not upturned (Figs 97–99, 102–105); mesosternum with hind margin slightly oblique; metacoxal separation about a fifth or less (e.g. Fig. 106); pygidium apex with 1–3 teeth. **Acrotrichis** Motschulsky

– Pronotum with side border broad, upturned (Fig. 119);

mesosternum with hind margin more strongly oblique; metacoxal separation a third (Fig. 120); pygidium apex without teeth (Fig. 121). **Chirostirca** n. gen.

Genus **Bambara** Vuillet

Bambara Vuillet, 1911a, Ins. Rev. Illustr. Ent. (Rennes) 1: 159. – Vuillet, 1911c, Ins. Rev. Illustr. Ent. (Rennes) 1: 259. – Johnson, 1968, Entomologist 101 : 76.
Eurygyne Dybas, 1966, Feldiana–Zool. 51: 15.

Body oval to elongate oval (Fig. 1), rather flat and somewhat broad; pubescent; weakly sclerotised. Head rather broad, not bordered at sides; eyes present, emarginate behind to receive front angles of pronotum; mentum as long as broad. Antennae 11-segmented.

Pronotum broader than long; front angles distinct; sides curved, broadest basally; apical and hind margins nearly straight; hind angles not produced rearwards.

Elytra entire, longer than broad, almost covering abdomen; humeri obtuse but not toothed; epipleura narrowly present along basal half, carina absent. Scutellum triangular, base partially covered by pronotal base. Wings as in most Ptiliids.

Prosternum very narrow anterior to procoxae, about a sixth of a coxal diameter in width; front margin feebly curved; procoxae contiguous; prosternal process absent; pleura concave.

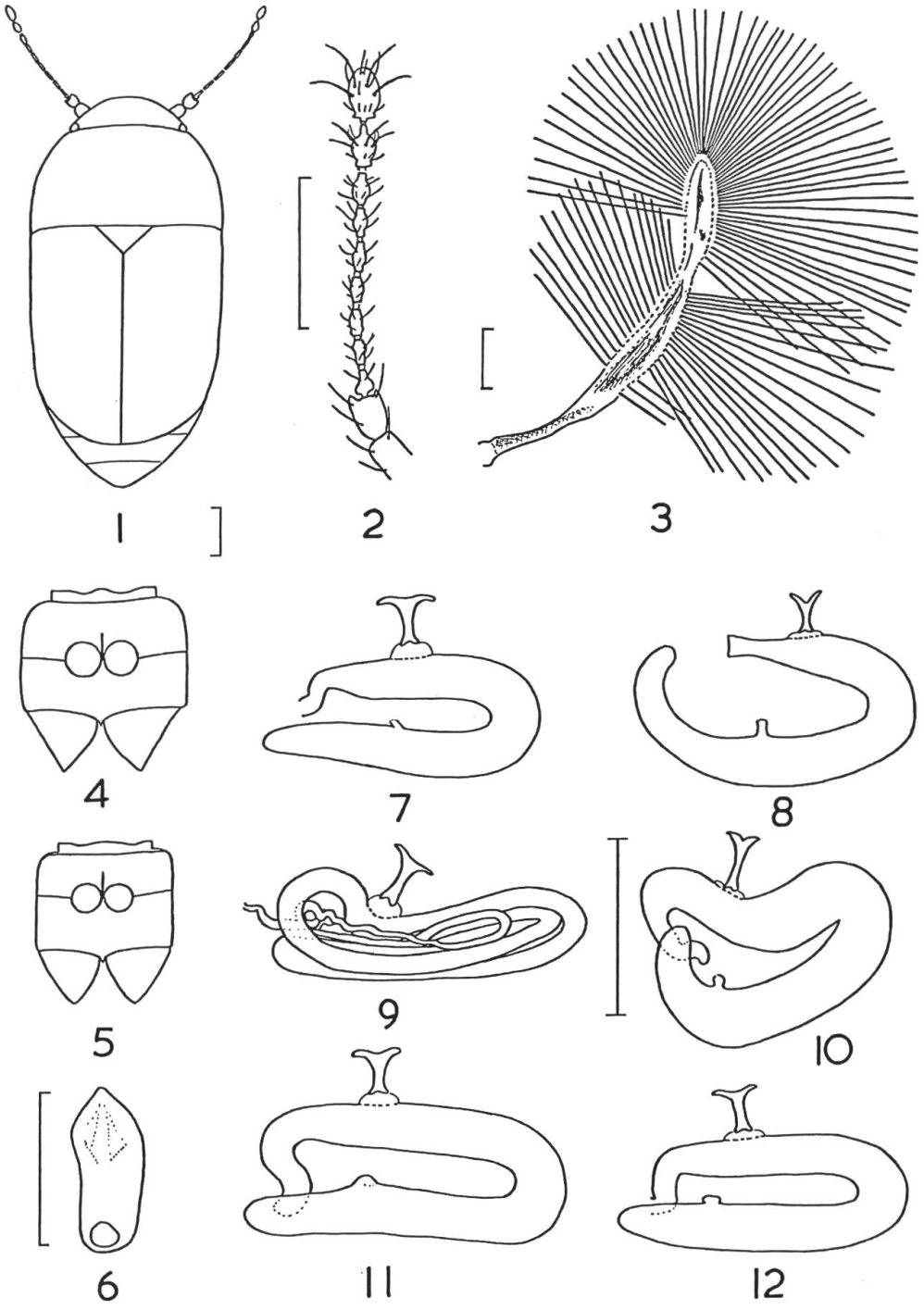
Mesosternum (Figs 4, 5) short and broad; front angles rounded; hind angles slightly obtuse, distinct; hind margin straight, not or feebly oblique; disc with longitudinal carina in basal half or so, extending between coxae; mesocoxae contiguous; collar not, rarely only narrowly extending onto pleura.

Metasternum (Figs 4, 5) about as long as mesosternum; episterna not apparent; metacoxae contiguous, with large, triangular plates; intercoxal process reduced to small point.

Ventrite 1 without femoral lines; disc with fine, sharp, median longitudinal carina. Pygidium with apex not dentate.

Taxonomy. This is a very difficult genus whose species are extremely similar externally. They can usually only be determined by reference to the spermatheca. Only one of our species is bisexual.

Distribution. Tropical and subtropical parts of the world; very few species of this extensive genus are yet described.



Figs 1–12: 1, *Bambara testacea* (Britten), dorsum. 2, *B. wagneri* (Dybas), antenna. 3, *B. testacea* (Britten), wing. 4, *B. testacea* (Britten), mesosternum and metasternum. 5, *B. wagneri* (Dybas), mesosternum and metasternum. 6, *B. wagneri* (Dybas), aedeagus. 7, *B. testacea* (Britten), spermatheca. 8, *B. dybasi* n. sp., spermatheca. 9, *B. wagneri* (Dybas), spermatheca. 10, *B. brunnea* (Britten), spermatheca. 11, *B. frosti* (Dybas), spermatheca. 12, B. sp. nr. *frosti*, spermatheca. [Figs 2, 3, 6 partly after Dybas (1966)].

Key to species of *Bambara*

1. Broader (Fig. 1); larger, length 0.70 – 0.75 mm 2
– Narrower; smaller, below 0.65 mm in length 3
2. Yellowish. Metacoxal lamina acuminate apically (Fig. 4). Spermatheca (Fig. 7). **B. testacea** (Britten)
– Brownish. Metacoxal lamina rounded apically (e.g. Fig. 5). Spermatheca (Fig. 8). **B. dybasi** n.sp.
3. Smaller, 0.52–0.58 mm, yellow – brown. Mesosternal collar extending onto pleura (Fig 5). Bisexual. Male with fovea on frons. Spermatheca (Fig. 9). **B. wagneri** (Dybas)
– Larger, 0.60–0.64 mm, darker brown. Mesosternal collar not extending onto pleura (e.g. Fig. 4). Males unknown ... 4
4. Spermatheca (Fig. 10). **B. brunnea** (Britten)
– Spermatheca of different form 5
5. Spermatheca (Fig. 11). **B. frosti** (Dybas)
– Spermatheca (Fig. 12). **B.** sp. nr.

Bambara brunnea (Britten) n. comb. Fig. 10.

Throscidium brunneum Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19:98.
Eurygyne suteri Dybas, 1966, Fieldiana – Zool. 51: 34, **n. syn.**

Length c. 0.6 mm. Narrow. Brown. Mesosternal collar not extending onto pleura. Metacoxal lamina rounded at apex. Parthenogenetic.

♀. Spermatheca characteristic (Fig. 10*).

Material: Mascarenes – *Reunion:* St. Gilles-les-Bains, Les Cormorans, 140 m, 10. VI. 72, sieving under bamboos, Y.G. (1 ex., MM).
Seychelles – *Mahé*: Cascade Estate, 800', 1908/09, P.S.T.E. (3 ex.; holotype ♀ studied, BMNH). – Silhouette: near Mont Pot-à-Eau, c.1500', VIII. 1908, forest, P.S.T.E. (1 ex., studied, BMNH).

Wider distribution: U.S.A. – Florida (Dybas, 1966); Panama and Cape Verde Islds. (Dybas, 1971); Trinidad and Galapagos Islds. (Johnson, 1982b).

Bionomics. Tropical, primarily anthropophilic, parthenogenetic species. Under bamboos, but undoubtedly not confined to this microhabitat. Season: VI, VIII. (For data elsewhere, see Dybas (1966, 1971)).

Status. Immigrant, probably pantropical species.

Synonymy. I have received paratypes of *B. suteri* Dybas, which is clearly the same species. The synonymy has also been confirmed by my

late friend and colleague Henry Dybas, who examined the Reunion specimen.

Bambara dybasi n. sp. Fig. 8.

Length 0.71–0.74 mm. Rather broad. Brownish. Mesosternal collar not extending onto pleura. Metacoxal lamina rounded at apex. Parthenogenetic.

♀. Spermatheca characteristic (Fig. 8).

Holotype ♀ (MG): Mascarenes – *Mauritius:* Black River Gorge, 1.1.75, P.S.

Paratypes: Mascarenes – *Mauritius:* same data as holotype (11 ex., MG); foot of Black River Gorge, 1.1.75, under rotten trunk in primitive endemic forest, 80 m, P.S. (1 ex., MG); Machabe Forest, 600–700 m, 11.IV.70, sieving, C.M.C. (2 ex., MM); Bel Ombre, 13.IV.70, sieving, C.M.C. (3 ex., MM); Ile des Aigrettes, 24.XII.74, P.S. (2 ex., MG).

Other specimens: I have seen a number of specimens from Madagascar, coll. H. Franz, which will be dealt with elsewhere.

Bionomics. Tropical, mainly silvicolous and parthenogenetic species, although 40% of captures are anthropophilic. Under rotten trunk, but undoubtedly in other microhabitats. Season: I, IV, XII.

Status. Immigrant Madagascan species.

Dedication. It is a pleasure to dedicate this new species to my late colleague Henry S. Dybas, for his many interesting and helpful discussions on this difficult genus.

Bambara frosti (Dybas) n. comb. Fig. 11.

Eurygyne frosti Dybas, 1966, Fieldiana – Zool. 51: 31.

Length 0.60–0.64 mm. Narrow. Brown. Mesosternal collar not extending onto pleura. Metacoxal lamina rounded at apex. Parthenogenetic.

♀. Spermatheca characteristic (Fig. 11).

Material: Mascarenes – *Reunion:* Étang-Salé, 22.II.72, departmental park, sieving Agave and soil, Y.G. (11 ex., MM).

Wider distribution: U.S.A. – Florida (Dybas, 1966); Galapagos Is. and Madagascar (Johnson, 1982b).

Bionomics. Tropical, anthropophilic, parthenogenetic species. Associated with Agave, but undoubtedly occurs in other microhabitats. Season: II (For data in Florida, see Dybas, 1966).

Status. Immigrant, probably pantropical species.

Bambara sp. nr. **frosti** Fig. 12.

Length c. 0.6 mm. Narrow. Brown. Mesosternal collar not extending onto pleura. Metacoxal lamina rounded at apex.

♀. Spermatheca characteristic (Fig. 12).

Remarks. The single specimen seen has an extremely similar spermatheca to *frosti*, differing in its smaller size, shorter and less bent end near pump, and in the nipple on the tail located nearer the apex. The allied *testacea* also differs in details of these structures. Current work by Henry Dybas (†) involves the study of this group of species.

Material: Mascarenes – *Reunion*: St. Paul, 100 m, sieving litter at foot of Inga dulcis, steppe with trees, 17. I. 73, Y.G. (1 ex., MM).

Bionomics. Tropical, anthropophilic species. In litter, but undoubtedly not specifically attached to Inga. Season: I.

Status. Immigrant.

Bambara testacea (Britten) Figs 1, 3, 4, 7.

Troscidium testaceum Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 89.
Eurygyne lutea Dybas, 1966, Fieldiana – Zool. 51: 22.
Bambara testacea; Johnson, 1968, Entomologist 101: 76–78. – Dybas, 1971, Entomologist 104: 322–323.

Length 0.70–0.74 mm. Broad (Fig. 1). Yellowish. Mesosternal collar not extending onto pleura (Fig. 4). Metacoxal lamina acuminate at apex (Fig. 4). Parthenogenetic.

♀. Spermatheca characteristic (Fig. 7)*.

Material: Mascarenes – *Reunion:* St. Leu, V.69, litter under bush of Indian Tamarin in steppe, H.F. (6 ex., HF); near St. Paul, 26.V.69, old mango trees, H.F. (285 ex., HF); Ste. Thérèse, Pichette, 300 m, 12.I.72, sieving rotting vegetables, Y. G. (7 ex., MM); Plaine d'Affouches, 700–800 m, 28.XI.71, sieving under leaves of Gogaviers, Y. G. (3 ex., MM); St. Gilles-les-Bains, Les Cormorans, 140 m, 10.VI.72, sieving under bamboos, Y. G. (99 ex., MM); St. Denis, state garden, 7.II.73, sieving under debris, Y. G. (19 ex., MM); Grande Chaloupe, 430–590 m, 11.I.75, primitive endemic forest, P. S. (4 ex., MG). – *Mauritius:* Albion, 21.I.70, 15. i. 71, sieving under bark of mango tree, Y. G., (15 ex., 3 ex., MM); Machabe Forest, 600–700 m, 11.IV.70, sieving, C. M. C. (1 ex., MM); Bel Ombre, 13.IV.70, sieving, C. M. C. (1 ex., MM); Holyrood, 2.IV.70, C. M. C. (3 ex., MM); Magenta, 2.IV.70, sieving, C. M. C. (6 ex., MM). – *Rodriguez:* Cascade Pigeon, 9.V.72, sieving at foot of Travellers tree, Y. G. (1 ex., MM).
Seychelles – *Mahé:* Cascade Estate, 800', 1908/09, P.S.T.E. (25 ex.); near Morne Blanc, 800', X.-XI. 1908, P.S.T.E. (1 ex.). (Studied: holotype and 4 paratypes, BMNH; 4 paratypes, MM); La Blache Bay, 26.I.75, P.S., (1ex. MG).

Wider distribution. U.S.A. – south and south-east, Bahamas, Bermuda (Dybas, 1966); Bismarck and Solomon Islds. (Johnson, 1971). I have also seen it from Madagascar.

Bionomics. Tropical, primarily anthropophilic, parthenogenetic species. Mainly amongst litter, but also in dacaying wood and rotting vegetables. Season: I, II, IV-VI, XI, XII.

Status. Immigrant pantropical species.

Bambara wagneri (Dybas) n. comb. Figs 2, 5, 6, 9.

Eurygyne wagneri Dybas, 1966, Fieldiana – Zool. 51: 36.

Length 0.52–0.58 mm. Narrow. Yellow-brown, i.e. paler than other brown species. Mesosternal collar extending onto pleura (Fig. 5). Metacoxal lamina rounded at apex (Fig. 5). Bisexual species.

♂. Frons with conspicuous median fovea; aedeagus: figure 6.

♀. Spermatheca characteristic (Fig. 9*).

Material: Mascarenes – *Reunion:* near St. Paul, 26.V.69, old mango trees, H. F. (9 ex., HF); near St. Leu, 27.V.69, litter under bush of Indian Tamarin steppe, H. F. (1 ex., HF); St. Joseph, 24.II.72, sieving under Pandanus and Agave, Y. G. (6 ex., MM); Etang-Salé, 22.II.72, departmental park, sieving Agave and soil, Y. G. (5 ex., MM); St. Paul, 100 m, 17.I.73, sieving litter at foot of Inga dulcis, steppe with trees, Y. G. (2 ex., MM). – *Mauritius:* Flic-en-Flac, 21.I.70, sieving in sheepfold, Y. G. (10 ex., MM).

Wider distribution. U. S. A. – Florida (Dybas, 1966); Marianas: Saipan Is. (Dybas, *in litt.*).

Bionomics. Tropical, anthropophilic species. In rotten wood/humus and litter; also in dead trees and amongst refuse in sheepfold. Season: I, II, V. (For data in Florida, see Dybas, 1966).

Status. Immigrant pantropical species.

Genus **Gomyella** n. gen.

Type species: *Gomyella canaliculata* n. sp.

Body elongate, rather narrow, moderately convex (Figs. 13–22); finely and closely pubescent; colouration yellowish to brown. Head moderately large and broad, not bordered at sides; eyes present or absent; mentum slightly broader than long, sides concave. Antennae 11-segmented.

Pronotum broader than long; front angles little distinct; sides curved, broadest near middle, margins finely bordered; apical and hind margins subequal in length; hind margin almost straight, weakly oblique at sides; hind angles not produced rearwards; sculpture variable, sometimes with 1–3 longitudinal grooves or impressions.

Elytra entire, longer than broad, almost covering abdomen; humeri not toothed; epipleura not developed, carina absent; sculpture finely reticulate and pustulate/punctate, but difficult to elucidate. Scutellum triangular. Wings, when present, as in most Ptiliids.

Prosternum rather broad anterior to procoxae, about a coxal diameter in width; front margin almost straight; procoxae contiguous; prosternal process absent; pleura barely concave.

Mesosternum (Fig. 23) somewhat short; front angles effaced; hind angles distinct and situated almost at body sides; hind margin straight and slightly oblique; disc triangularly – elevated, not delimited by sloping lateral carinae; mesocoxae contiguous; collar not delineated behind.

Metasternum (Fig. 23) longer than mesosternum; episterna not apparent; metacoxae somewhat narrowly separated by a quarter to a fifth of the metasternal width (rarely by less); coxal plates small.

Ventrite 1 with complete femoral lines. Pygidium with apex bidentate.

Derivation. The genus is dedicated to my French colleague Yves Gomy, in recognition of his outstanding field studies on Reunion and Mauritius.

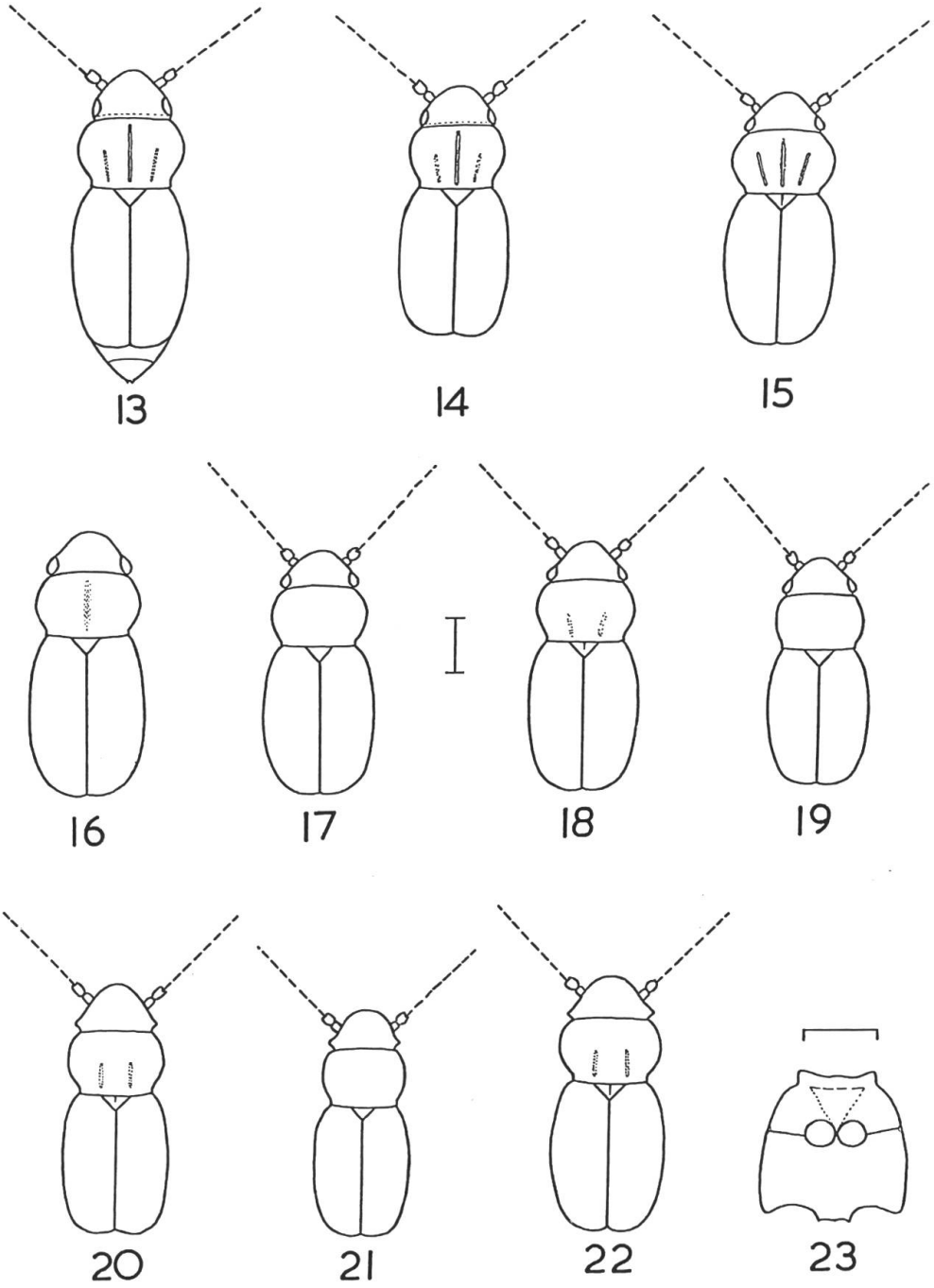
Systematic position. A distinctive Ptiline genus which belongs to the *Ptilium/Oligella/Ptiliolum* group. The minute size is very reminiscent of *Oligella*, although *Gomyella* lack the oblique carina at the front angles of the metasternum which is one of the characteristics of that genus. *Gomyella* may be distinguished from other Ptilines lacking metasternal episterna by the structure of the mesosternum.

Taxonomy. These beetles are all very small, lying within the range 0.41–0.53 mm, which makes study difficult. Fortunately, they seem to possess a few good characters to permit identification. Most are known only from a few specimens unfortunately, and it has rarely been possible to prepare satisfactorily the genitalia.

Distribution. Pantropical. Undescribed species are known to me from islands in the Caribbean and Pacific.

Key to species of *Gomyella*

1. Eyes not projecting beyond temples (Figs 13, 14). Pronotum with well-defined, median longitudinal groove, and shorter lateral impressions 2

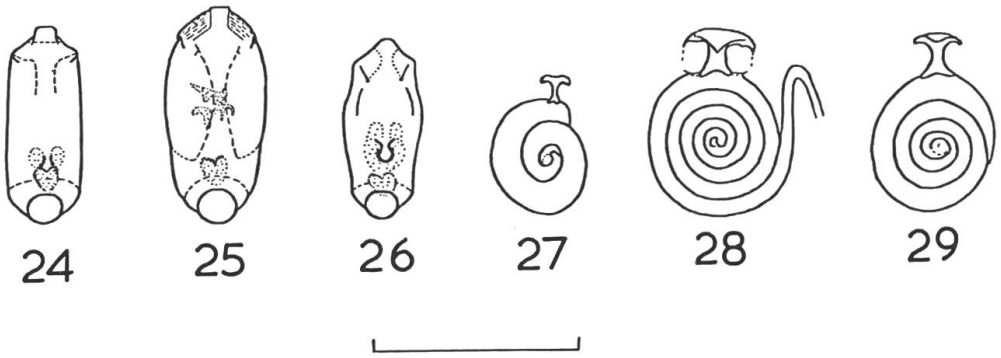


Figs 13–23: 13, *Gomyella canaliculata* n. sp. 14, *G. similata* n. sp. 15, *G.longicornis* n. sp. 16, *G. obscura* n. sp. 17, *G. simplex* n. sp. 18, *G. carinata* n. sp. 19, *G. parva* n. sp. 20, *G. apteroides* n. sp. 21, *G. aptera* n. sp. 22, *G. schauenbergi* n. sp. 23, *G. canaliculata* n. sp. mesosternum and metasternum.

– Eyes or ocular region strongly projecting beyond temples (Figs 15–22) 3

2. Broader and larger, 0.51–0.53 mm. Pronotum strongly rounded at sides (Fig. 13); metacoxal separation about a fifth (Fig. 23). **G. canaliculata** n. sp.
– Narrower and smaller, 0.46 mm. Pronotum not so strongly rounded at sides (Fig. 14). Metacoxal separation about a seventh. **G. similata** n. sp.
3. Eyes conspicuous. Winged 4
– Eyes absent. Apterous 8
4. Pronotum with strong median longitudinal groove and shorter lateral grooves, these grooves deep but irregular, pronotal surface uneven. Antennae long (Fig. 15). **G. longicornis** n. sp.
– Pronotum without grooves, sometimes with indistinct median or lateral impressions. Antennae shorter 5
5. Dorsum dull. Pronotum and elytra very finely, evenly and closely punctured. Elytra extremely finely, closely pubescent (Fig. 17). **G. simplex** n. sp.
– Dorsum shining. Pronotum differently sculptured. Elytra with more scattered puncto-pustulation, pubescence coarser and sparser 6
6. Reddish-brown, more convex and larger, 0.51 mm. Eyes large. Pronotum strongly rounded at sides, with scattered pustules amongst obscured reticulation, and an indistinct median longitudinal impression (Fig. 16). **G. obscura** n. sp.
– Yellowish, less convex and smaller. Eyes not so large. Pronotum less strongly rounded at sides, surface reticulate and without apparent pustulation, median impression absent 7
7. Pronotum with feeble lateral impressions, reticulation distinct, sides more curved. Scutellum with long, median longitudinal carina (Fig. 18). Larger, 0.48 mm. **G. carinata** n. sp.
– Pronotum without impressions, reticulation weaker, sides less curved. Scutellum not carinate (Fig. 19). Smaller, 0.43 mm. **G. parva** n. sp.
8. Pronotum without lateral impressions. Scutellum not carinate. Length 0.41–0.43 mm (Fig. 21). **G. aptera** n. sp.
– Pronotum with shallow but distinct lateral impressions. Scutellum with base carinate 9

9. Larger, 0.48 mm. Scutellum carinate along most of its length (Fig. 22). **G. schauenbergi** n. sp.
– Smaller, 0.45 mm. Scutellum carinate in basal half (Fig. 20). **G. apteroides** n. sp.



Figs 24–29: 24, *Gomyella canaliculata* n. sp., aedeagus. 25, *G. apteroides* n. sp., aedeagus. 26, *G. aptera* n. sp., aedeagus. 27, *G. simplex* n. sp., spermatheca. 28, *G. canaliculata* n. sp., spermatheca. 29, *G. aptera* n. sp. spermatheca.

Gomyella canaliculata n. sp. Figs 13, 23, 24, 28.

Length 0.51–0.53 mm. Reddish to dark brown; legs and antennae pale yellow. Head with eyes not projecting beyond temples, continuous with them; head breadth 0.16 mm; antennal length 0.24–0.26 mm. Pronotum (Fig. 13) transverse, breadth 0.19–0.20 mm; sides strongly curved; disc with well-marked median longitudinal groove almost attaining apical and basal margins; lateral impressions shallower, shorter, basally converging; surface rather dull, flatly pustulate and reticulate to almost punctato-pustulate, sculpture difficult to elucidate. Elytra barely broader than pronotum, breadth 0.22 – 0.23 mm, sides nearly straight; sculpture similar to pronotum; pubescence short and close, hairs c. 0.012 mm long, slightly curved. Scutellum without longitudinal carina. Winged.

♂. No apparent secondary sexual characters; aedeagus: figure 24*.

♀. Spermatheca: figure 28*.

Holotype ♂ (MG): Mascarenes – *Reunion*: Plaine d'Affouches, c. 1000 m, 19.X.69, sieving along forested track, Y. G.

Paratypes: Mascarenes – *Reunion:* same data as holotype (26 ex., MM); same locality, 1200 m, 1.XI.71, sieving stumps and humus by gîte, Y. G. (1 ex., MM); Cilaos, Grand Matarum, 1500 m, I.XI.69, sieving trunks in primary forest, leg. Y. G. (86 ex., MM).

Bionomics. Primarily temperate, silvicolous species of the mountains (1000–1500 m). In decaying wood. Season: X, XI.

Status. Endemic to Reunion.

Gomyella similata n. sp. Fig. 14.

Length 0.46 mm. Yellowish-brown; legs and antennae pale yellow. Head with eyes and temples continous, eyes not projecting; breadth 0.14 mm; antennal length 0.21 mm. Pronotum transverse, breadth 0.16–0.17 mm; sides rather strongly curved; disc with median longitudinal groove not reaching apical and basal margins; lateral impressions short, slightly converging basally, weak and little distinct; surface obscurely sculptured, flatter than in allied species. Elytra little broader than pronotum (Fig. 14); breadth 0.19 mm, sculpture more distinct. Scutellum not medially carinate. Metacoxal separation narrower than in other species, about a seventh of metasternal width. Winged.

♂. Hind trochanter with three long setae.

Holotype ♂ (MG): Mascarenes – *Reunion:* Cilaos, Grand Matarum, 1500 m, I.XI.69, sieving trunks in primary forest, Y. G.

Paratype: Mascarenes – *Reunion:* same data as holotype (1 ex., MM).

Bionomics. Temperate, silvicolous species of the mountains (1500 m). In decaying wood. Season: XI.

Status. Endemic to Reunion.

Gomyella carinata n. sp. Fig. 18.

Length 0.48 mm. Yellowish-brown; legs and antennae pale yellow. Head with eyes strongly projecting over temples; breadth 0.16 mm; antennal length 0.22 mm. Pronotum transverse, breadth 0.18 mm; sides curved, but not strongly; disc without median furrow; lateral impressions abbreviated, feebly indicated in basal half; surface little shining, reticulation distinct. Elytra little broader than pronotum, breadth 0.19 – 0.21 mm; sculpture somewhat puncto-pustulate and reticulate. Scutellum with fine median longitudinal carina in basal three-quarters. Winged.

Holotype (MG): Mascarenes – *Reunion:* Takamaka, 26.I.72, 700 m, sieving very humid stumps along road from dam, Y. G.

Paratype: Mascarenes – *Reunion* : same data as holotype (1 ex. MM).

Bionomics. Subtropical, silvicolous species of the mountains (700 m). In decaying wood. Season: I.

Status. Endemic to Reunion.

Gomyella longicornis n. sp. Fig. 15.

Length 0.48–0.50 mm. Brown species, head and pronotum darker; legs and antennae yellowish. Head with eyes projecting over temples, breadth 0.16 mm; antennae longer and more slender than in other species, length 0.27 mm. Pronotum transverse, breadth 0.19 mm; sides strongly curved; disc with deep median longitudinal groove not reaching apical and basal margins; lateral grooves shorter, somewhat basally converging; all grooves deeper, less sharply cut than in *canaliculata;* surface uneven, puncto-pustulation irregular. Elytra little broader than pronotum (Fig. 15), breadth 0.19–0.20 mm; sculpture similar to that on pronotum, but surface more uneven. Scutellum with median longitudinal carina along major part of length. Winged.

Holotype (MG): Mascarenes – *Reunion:* Takamaka, 700 m, 26.I.72, sieving very humid stumps along road from dam, Y. G.

Paratype: Mascarenes – *Reunion:* same data as holotype (1 ex., MM).

Bionomics. Subtropical, silvicolous species of the mountains (700 m). In decaying wood. Season: I.

Status. Endemic to Reunion.

Gomyella obscura n.sp. Fig. 16.

Ptiliolum rufotestaceum; Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 89 (Misidentification: nec Matthews, 1894)

Length 0.51 mm. Reddish-brown; legs and antennae yellowish. Head with eyes somewhat large and projecting over temples, breadth 0.17 mm; antennal stems missing in holotype. Pronotum transverse, breadth 0.19 mm; sides strongly rounded; disc with indistinct median longitudinal impression, not reaching apical or basal margins and only apparent in certain lights; lateral impressions absent; surface with scattered pustules amongst obscured reticulation. Elytra little broader than pronotum (Fig. 16), breadth 0.21 mm, sculpture similar. Scutellum not medially carinate. Winged.

Holotype (BMNH): Seychelles – *Silhouette*: Mare aux Cochons, c. 1200', IX.1908, plateau or nearby forest, P.S.T.E.

Bionomics. Tropical, silvicolous species. Perhaps associated with decaying wood.

Status. Endemic to Silhouette.

Remarks. After comparing this specimen with the type of *Ptilium rufotestaceum* Matthews from Grenada, West Indies (in BMNH), I be-

lieve the two are distinct, contrary to Britten's findings. Matthews's species belongs to the genus *Gomyella* (**n. comb**), but it differs from *obscura* in having much closer and coarser pronotal pustulations, a duller appearance, and the pronotum being narrowed further from the base. The size is similar.

I have not seen the second Silhouette specimen recorded by Britten (1926b).

Gomyella parva n. sp. Fig. 19.

Length 0.43 mm. Yellowish-brown; legs and antennae pale yellow. Head with eyes projecting over temples; breadth 0.14 mm; antennal length 0.22–0.23 mm. Pronotum transverse, breadth 0.16 mm; sides weakly curved; disc without grooves or impressions; surface shining, obscurely sculptured. Elytra slightly broader than pronotum (Fig. 19), breadth 0.19 mm, similarly sculptured. Scutellum not medially carinate. Winged.

Holotype (MG): Mascarenes – *Reunion:* Takamaka, 700 m, 26.I.72 sieving very humid stumps along road from dam, Y. G.

Paratype: Mascarenes – *Reunion:* same data as holotype (1 ex., MM).

Bionomics. Subtropical, silvicolous species of the mountains (700 m). In decaying wood. Season: I.

Status. Endemic to Reunion.

Gomyella simplex n. sp. Figs 17, 27.

Length 0.45 – 0.48 mm. Yellowish-brown; legs and antennae pale yellow. Dorsum duller than other species. Head with eyes projecting over temples; breadth 0.15 mm; antennal length 0.24 mm. Pronotum transverse, breadth 0.19 mm; sides rather strongly curved; disc without grooves or impressions; surface very finely, evenly, very closely punctured. Elytra little broader than pronotum (Fig. 17), breadth 0.19–0.20 mm, sculpture similar but more obscured; pubescence extremely fine and close, much shorter and denser than in other species. Scutellum not medially carinate. Winged.

♀. Spermatheca: figure 27.

Holotype (MG): Mascarenes – *Mauritius:* Mare Longue, 600–700 m, 19.I.71, sieving Travellers Tree, Y. G.

Paratypes: Mascarenes – *Mauritius*: same data as holotype (26 ex., MM). – *Reunion:* St. Philippe, Baril, 15.II.71, sieving Vacoas, Y. G. (1 ex., MM).

Bionomics. Tropical, apparently anthropophilic species. In decaying Ravenala and Pandanus. Season: I, II.

Gomyella aptera n. sp. Figs 21, 26, 29.

Length 0.41–0.43 mm. Yellowish, de-pigmented. Eyes and wings absent. Head with ocular region projecting beyond temples; breadth 0.13–0.14 mm; antennal length 0.19–0.20 mm. Pronotum (fig 21) transverse, breadth 0.15–0.16 mm; sides weakly curved; disc without any trace of longitudinal grooves or impressions; surface somewhat shining, clearly reticulate. Elytra little broader than pronotum, breadth 0.17–0.19 mm; surface finely puncto-pustulate, reticulate. Scutellum not medially carinate.

♂. Aedeagus: figure 26.

♀. Spermatheca: figure 29.

Holotype ♀ (MG): Mascarenes – *Mauritius:* Chamarel, 360 m, 22. XII. 74, P. S.

Paratypes: Mascarenes – *Mauritius:* same data as holotype (9 ex., MG); Mt. le Pouce, 700 m, 20.XII.74, P. S. (1 ex., MG).

Bionomics. Tropical, probably silvicolous species. Probably in decaying wood or in soil at the base of old stumps. Season: XII.

Status. Endemic to Mauritius.

Gomyella apteroides n. sp. Figs 20, 25.

Length 0.45 mm. Yellowish, de-pigmented. Eyes and wings absent. Head with ocular region projecting beyond temples; breadth 0.14 mm; antennal length 0.21–0.22 mm. Pronotum (Fig. 20) transverse, breadth 0.18 mm; sides curved slightly more so than in *aptera*; lateral longitudinal impressions present in basal half, shallow but distinct, subparallel, barely passing middle of pronotum; surface somewhat shining, clearly reticulate. Elytra little broader than pronotum, breadth 0.19–0.20 mm; surface finely puncto-pustulate, reticulate. Scutellum with short median longitudinal carina at base.

♂. Aedeagus: figure 25.

Holotype ♂ (MG): Mascarenes – *Mauritius*: Mt. le Pouce, 700 m, 20. XII. 74, P.S.

Paratypes: Mascarenes – *Mauritius*: foot of Black River Gorge, 80 m, l.I. 75, under rotten trunk in primitive endemic forest, P. S. (2 ex., MG).

Bionomics. Tropical, silvicolous species. Associated with decaying wood. Season: XII, I.

Status. Endemic to Mauritius.

Gomyella schauenbergi n. sp. Fig. 22.

Length 0.48 mm. Yellowish, de-pigmented. Eyes and wings absent. Head with ocular region projecting beyond temples; breadth 0.15 mm; antennal length 0. 22 mm. Pronotum transverse, breadth 0.19 mm; sides curved, more so than in *aptera;* lateral longitudinal impressions present in basal half, shallow but distinct, subparallel, barely passing middle of pronotum; surface somewhat shining, clearly reticulate. Elytra broader than pronotum, breadth 0.21 mm; surface finely punctopustulate, reticulate. Scutellum with median longitudinal carina long, about three-quarters of scutellar length.

Holotype ♀ (MG): Mascarenes – *Reunion*: Basse-Vallée, 700 m, 13. I. 75, endemic forest, P. S.

Bionomics. Subtropical, silvicolous species of the mountains (700 m). Probably associated with decaying wood or adjacent soil. Season: I.

Status. Endemic to Reunion.

Genus **Actidium** Matthews

Actidium Matthews, 1868, Ent. Mon. Mag. 5: 12; 1872, Trichop. Illustr. : 86. – Flach, 1889, Verh. zool. Bot. Ges. Wien 39: 499. – Besuchet, 1971, Käfer Mitteleuropas 3: 318. – Johnson, 1982, N. Z. Journ. Zool. 9: 355.

Body elongate in our species (Figs 30, 32), generally rather narrow; finely and closely pubescent; mostly blackish in colour. Head large and broad, not bordered at sides, eyes present; mentum broader than long. Antennae 11-segmented.

Pronotum broader than long, broadest at or a little in front of middle; sides ± abruptly constricted behind; hind angles not produced; hind margin slightly narrower than front margin; base overlapping elytral base; surface sculpture variable – reticulate and/or punctate to pustulate.

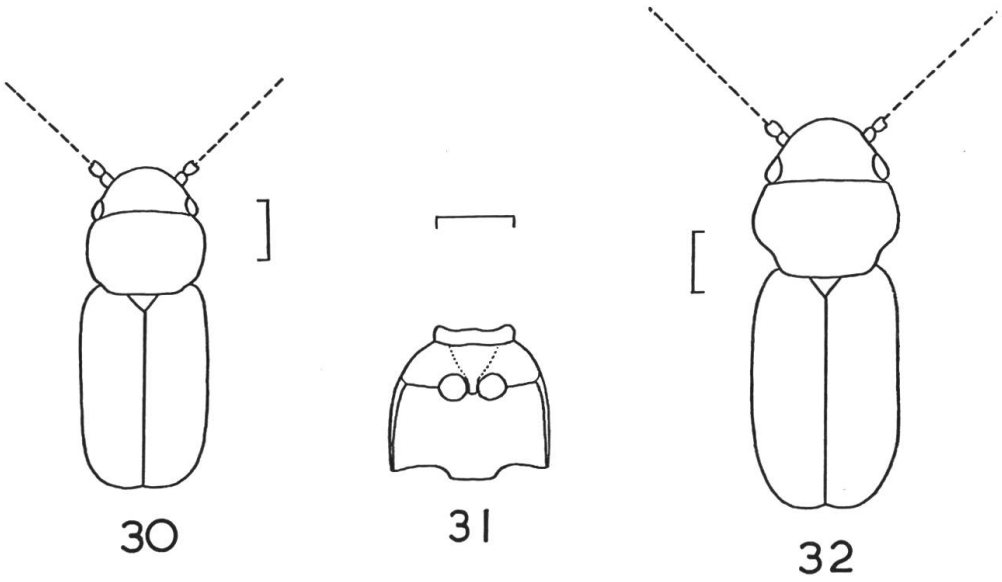
Elytra entire, longer than broad, almost covering abdomen; humeri rounded; epipleura barely developed basally, carinae absent. Scutellum triangular, base hidden by pronotal base. Wings as in most Ptiliids.

Prosternum broad anterior to procoxae, almost a coxal diameter in width; front margin almost straight; prosternal process absent; procoxae contiguous; pleura not concave.

Mesosternum (Fig. 31) short; front angles effaced; hind margin straight, slightly oblique; hind angles obtuse, slightly removed from body sides; disc triangularly – elevated, not delimited laterally by sloping carinae; mesocoxae clearly separated; collar strongly developed, not extending onto pleura.

Metasternum (Fig. 31) much longer than mesosternum; episterna slightly visible anteriorly; metacoxae moderately separated, by about a third of metasternal width; hind margin not toothed mesad of coxae; coxae with small plates.

Ventrite 1 with complete femoral lines. Pygidium usually bidentate at apex.



Figs 30–32: 30–31, *Actidium flavoterminum* (Deane): 30, dorsum. 31, mesosternum and metasternum. 32, *A. mascarenhasi* n. sp., dorsum.

Taxonomy. The small size of these beetles makes study difficult, and creates problems in dissection. External differences in shape and sculpture are the best species-characters, but the latter are difficult to describe and illustrate satisfactorily.

Distribution. Worldwide. The species are strongly hygrophilous as a rule, most being found amongst shingle by streams, in wet moss, or on the seashore.

Key to species of *Actidium*

1. Slightly narrower, smaller, length 0.48–0.59 mm. Antennae short, middle segments c. twice as long as broad. Head and pronotum closely covered with simple obvious punctures. Pronotum with weak pre-basal constriction (Fig. 30). ♂. Without specialised secondary sexual characters.
A. flavoterminum (Deane)

– Slightly broader, larger, length 0.62–0.67 mm. Antennae long, middle segments c. three times as long as broad. Head and pronotum with superficial umbilicate punctures of varying distinctness. Pronotum with strong pre-basal constriction (Fig. 32). ♂. Hind trochanter with three long setae; ventrite 1 with disc densely pubescent. **A. mascarenhasi** n. sp.

Actidium flavoterminum (Deane) n. comb. Figs 30, 31.

Ptilium flavoterminum Deane, 1931, Proc. Linn. Soc. N. S. Wales 56: 239–240.
Actidium lineare; Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 89 (misidentification, nec Matthews, 1874).

Length 0.48–0.59 mm. Narrow, subparallel; pubescent. Entirely dark brown, or blackish with elytra often lighter; legs and antennae yellowish-brown. Head sculptured as pronotum, eyes well-developed; breadth 0.14–0.18 mm; antennae short, 0.21–0.26 mm, middle segments c. twice as long as broad. Pronotum with weak pre-basal constriction; broadest in apical half, breadth 0.16–0.21 mm; sides weakly curved, barely sinuate before hind angles which are effaced (Fig. 30); hind margin slightly narrower than apical margin; surface shining, closely covered with conspicuous, almost coarse, puncturation. Elytra subparallel, elongate; breadth 0.18–0.22 mm; granulate, reticulate.

♂. Without specialised secondary sexual characters.

Material: Mascarenes – *Reunion*: St. Gilles-les-Bains, l.IV. 67, under seaweed on beach, Y. G. (36 ex., MM); – *Mauritius:* Souillac, Gris-Gris Beach, 17. I. 70, under seaweed, Y. G. (31 ex., MM); Flic-en-Flac, 21. I. 70, sieving in sheepfold, Y. G. (13 ex., MM); Cap Malheureux, 30. XII. 74, P. S. (1 ex. MG); Baie de Tamarin, 18. XII. 74, beach, P. S. (9 ex., MG).
Seychelles – *Mahé*: Anse la Mouche, 18. I. 71, under seaweed, J. B. (1 ex., MM); Anonyme islet, – I. 1909, seaweed on beach, P.S.T.E. (11 ex., 3 ex. studied, MM).

Wider distribution. New Caledonia (Deane, 1931). I have also seen specimens from Madagascar.

Bionomics. Tropical, halophilous species. In and beneath sea-

weed on beaches, but with one anthropophilic record from a sheepfold. Season: I, IV, XII.

Status. Native, Indo-Pacific species.

Remarks. I have studied the unique holotype of *flavoterminum* from New Caledonia (SAM), prior to which it was thought to represent an undescribed species. The New Zealand *lineare* (JOHNSON, 1982a) is quite a different species which has a strong pre-basal constriction to the pronotum, much as in *mascarenhasi,* as well as more elongated elytra.

The present species is most closely related to the European *coarctatum* (Haliday). It differs from that species as follows: size smaller, form narrower; antennae shorter; pronotum less transverse, straighter at the sides, broadest more anteriorly. Mauritian specimens are smaller and more unicolorous brown than those from Reunion, but are thought to be conspecific.

Actidium mascarenhasi n. sp. Fig. 32.

Length 0.62–0.67 mm. Blackish, elytra dark brown; legs and antennae yellowish-brown. Narrow, subparallel; pubescent. Head sculptured much as pronotum, eyes well-developed; breadth 0.20–0.21 mm; antennae long, 0.30–0.32 mm, middle segments at least three times as long as broad. Pronotum with strong pre-basal constriction; broadest in apical half, breadth 0.23–0.24 mm; sides weakly curved, sinuate just before hind angles which are obtuse and distinct; hind margin conspicuously narrower than apical margin; surface shining, puncturation umbilicate but superficial, of varying distinctness. Elytra elongate, subparallel (Fig. 32); breadth 0.24–0.26 mm; granulate, reticulate.

♂. Hind trochanter with three long setae; ventrite 1 with disc densely pubescent, hairs directed slightly inwards.

Holotype (MG): Mascarenes – *Mauritius:* Souillac, Gris-Gris Beach, 17. I. 70, under seaweed, Y. G.

Paratypes: Mascarenes – *Mauritius:* same locality as holotype (1 ex., MM). Seychelles – Mahé: Anse la Mouche, 18. I. 71, under seaweed, J. B. (16 ex., MM).

Other specimens. I have also seen a number of specimens from Madagascar.

Bionomics. Tropical, halophilous species. Under seaweed on beaches. Season: I.

Status. Native species of the western Indian Ocean.

Genus **Dipentium** Johnson

Dipentium Johnson, 1982, N. Z. Journ. Zool. 9: 356.

Body rather broad, usually very bulky, oval or elongate-oval (Figs 33, 38, 39); pubescence present or indistinct. Head moderately large and broad, not bordered at sides; eyes present; mentum transverse, sides concave. Antennae 11-segmented.

Pronotum broader than long; front angles little distinct; sides curved; hind margin straight or sinuate laterally; hind angles not produced rearwards.

Elytra entire, longer than broad, completely covering abdomen; usually broadest near basal third; humeri not toothed; sides (Fig. 35) in lateral view widened in basal half; epipleura not developed, carina absent. Scutellum triangular. Wings as in most Ptiliids.

Venter (Fig. 34). Prosternum rather broad anterior to procoxae, nearly three-quarters a coxal diameter in width; front margin feebly curved; procoxae nearly contiguous; pleura broad, concave.

Mesosternum short and broad; front angles toothed and angulate, even visible dorsally; hind angles almost rectangular; hind margin almost straight, barely oblique; disc elevated, with a well-marked longitudinal carina extending to between coxae; mesocoxae almost contignous; collar not extending onto pleura.

Metasternum little longer than mesosternum; episterna slightly developed; hind margin not toothed mesad of coxae; metacoxae widely separated by about a third of metasternal width; coxal plates very small.

Ventrite 1 with complete femoral lines. Pygidium (Fig. 36) with apex multidentate, especially in female.

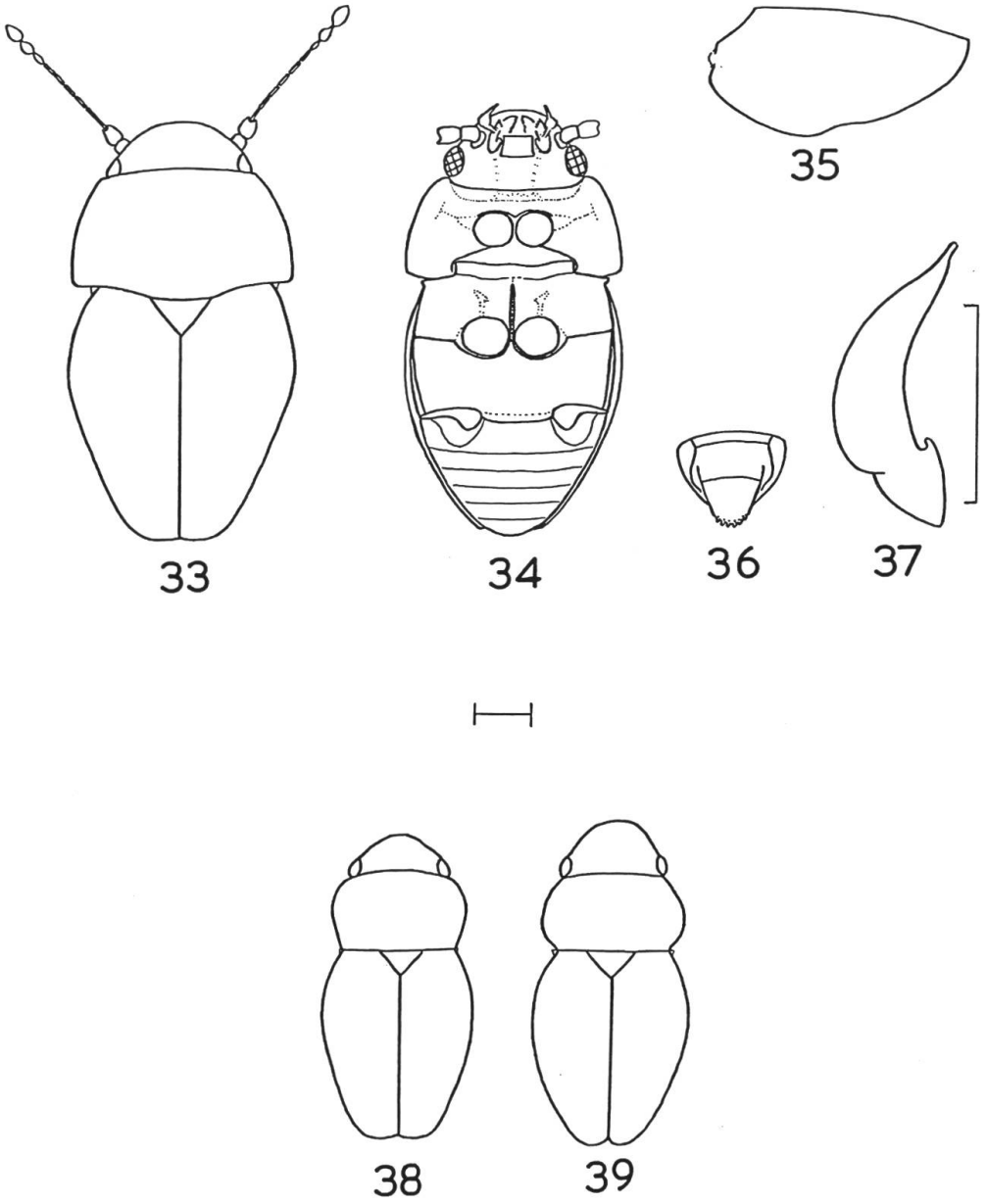
Legs short, broad, flattened, usually very sturdy.

Type species. *Ptenidium reticulatum* Britten.

Derivation. An anagram of the genus *Ptenidium*, under which two species were originally described.

Systematic position. A distinctive Ptiline genus belonging to the *Ptilium-Ptiliolum* group. It may be easily recognised by the characteristic form of the meso- and meta-sterna, and multi-dentate pygidial apex.

Taxonony. The species are best separated on external characters, as the rather strongly sclerotised body makes removal of the abdomen without damage difficult. Useful characters are to be found in some aedeagi, but the partially unsclerotised spermatheca is difficult to prepare satisfactorily.



Figs 33–39: 33–38, *Dipentium reticulatum* (Britten): 33, dorsum. 34, venter. 35, left elytron. 36, pygidium. 37, aedeagus in lateral view. 38, D. castaneum (Britten), dorsum. 39, D. parvum n. sp., dorsum.

Distribution. Tropical and subtropical parts of the world, especially Indo-Australasia, from where a number of undescribed species are known to me. The Japanese *Ptenidium japonicum* K. Sawada belongs to *Dipentium* (**n. comb.**); I have seen a number of specimens of it supplied by both the describer and M. Kubota of Odawara.

Key to species of *Dipentium*

1. Length 0.69–0.72 mm; body heavily built. Pronotum trapezoidal (Fig 33), broadest at base where it is much broader than base of elytra, hind margin arcuate. Pronotal surface with coarse, mesh-like reticulation, and coarse scattered punctures. **D. reticulatum** (Britten)
– Smaller, body less bulky. Pronotum not trapezoidal, broadest near middle, base subequal to that of elytra, hind margin straight. Pronotal sculpture different 2
2. Length 0.58–0.61 mm; dorsum finely but not densely punctate. Pronotum broadest at to slightly behind middle, side margins broad, sides strongly curved and slightly sinuate before hind angles (Fig. 39). Body convex. **D. parvum** n. sp.
– Length 0.54–0.56 mm; dorsum with flat pustulations. Pronotum broadest slightly in front of middle, side margins very narrow, sides weakly curved and not sinuate before hind angles (Fig. 38). Body flat. **D. castaneum** (Britten)

Dipentium castaneum (Britten) n. comb. Fig. 38.

Ptiliolum castaneum Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 89

Length 0.54–0.56 mm. Yellowish-brown, legs and antennae paler. Rather flat, pubescent; dorsum closely covered with flattened pustulations. Head with well-developed eyes; breadth 0.19 mm; antennal length 0.24 mm. Pronotum 1.61–1.76 times as broad as long, breath 0.23–0.24 mm; broadest a little in front of middle (Fig 38); sides curved, very narrowly margined, not sinuate before obtuse hind angles; front and hind margins subequal in length. Elytra 2.2 – 2.35 times as long as pronotum, 1.25 times as long as broad, breadth 0.26 mm; broadest at basal third, very slightly wider than pronotum; sculpture a little coarser but less close than on pronotum, pubescence fine and close.

♂. Aedeagus about twice as long as broad, but not otherwise prepared satisfactorily.

Material: Seychelles – *Mahé*: Mare aux Cochons dist., 1500', forests, -I.-II. 1909, P.S.T.E., 2 ex. ; Cascade Estate, 800', 1908/09, P.S.T.E., 1 ex (Holotype and paratype studied (BMNH)).

Bionomics. Tropical, probably silvicolous species. Microhabitat unknown, but probably decaying wood. Season: I, II.

Status. Endemic to Mahé.

Dipentium parvum n. sp. Fig. 39.

Length 0.58–0.61 mm. Reddish, legs and antennae pale brown. Convex, pubescent, dorsum covered with small but not dense punctures. Head with well-developed eyes; breadth 0.19–0.20 mm; antennal length 0.28–0.29 mm. Pronotum 1.60–1.68 times as broad as long, breadth 0.26–0.27 mm; broadest about, often almost behind, middle (Fig. 39); sides strongly curved, margined, slightly sinuate before obtuse hind angles; front and hind margins subequal in length. Elytra 2.1–2.31 times as long as pronotum, 1.24–1.26 times as long as broad, breadth 0.27–0.28 mm; broadest at basal third, subequal to pronotum in breadth; pubescence short, c. 0.014 mm, not very close.

♂. Unknown.

Holotype ♀ (MG): Mascarenes – *Reunion*: St. Philippe, Baril, 15. II. 71, sieving Vacoas, Y.G.

Paratypes: Mascarenes – *Mauritius*: Mare Longue, 600 – 700 m, sieving Travellers Tree, Y.G. (1 ♀, MM); Flic-en-Flac, 21. I. 70, Aloe stem, Y.G. (1 ♀, MM). – *Rodriguez:* Mont Limon, 396 m, 9. V. 72, sieving Aloe stems, Y. G. (1 ♀, MM).

Other material: Sri Lanka – Western: Gampaha, 5. XIII. 72, foot of big tree with liane in botanical garden, Mussard, Besuchet & Löbl (2 ex., MG). Nicobar Islds. – Nancouri, 1845-1847, leg. Galathea Expedition (3 ex., ZMC).

Bionomics. Tropical, anthropophilic species. Especially with decaying Aloe and probably other dead vegetation. Season: I, II, V.

Status. Immigrant, oriental species.

Dipentium reticulatum (Britten) Figs 33–37.

Ptenidium reticulatum Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19:88.
Dipentium reticulatum; Johnson, 1982, N. Z. Journ. Zool. 9: 358.

Length 0.69–0.72 mm. Reddish-brown, legs included; antennae paler. Body heavily built, convex; pubescence fine, short and sparse, little distinct. Head sculptured as pronotum, breadth 0.24–0.26 mm; eyes well-developed; antennal length 0.32 mm. Pronotum 1.7–1.78 times as broad as long, ± trapezoidal, broadest at base (Fig 33), breadth 0.35–0.38 mm; hind margin much longer than front margin, arcuate, slightly sinuate close to hind angles; sides feebly curved to almost straight, nar-

rowly margined; hind angles slightly obtuse, somewhat effaced; surface with conspicuous mesh-like reticulation, and coarse but rather sparse puncturation; base much wider than elytral base. Elytra 1.96 times as long as pronotum, 1.09–1.10 times as long as broad, breadth 0.37–0.38 mm; broadest near basal quarter; reticulation more obscured than on pronotum, with scattered pustules.

♂. Aedeagus: figure 37*.

Material: Seychelles – *Mahé*: near Morne Blanc, 800'+, -X. -XI. 1908, P.S.T.E. (holotype studied, BMNH).

Wider distribution. Nicobar Islds. – Nancouri, 1845-1847, Galathea Expedition (16 ex., ZMC).

Bionomics. Tropical, silvicolous species. Microhabitat data unknown, but probably in dead wood. Season: X-XI.

Status. Immigrant oriental species.

Remarks. Although this species was originally described as *Ptenidium*, the describer was not fully convinced as to this placing. Thus Britten (1926b) wrote «Should more material come to hand and further study of it be possible, it may prove necessary to erect a new genus for this insect.» *Ptenidium* are very different from the present genus. The most conspicuous distinctions lie in their possession of the following features: prosternal process present between procoxae; mesocoxae markedly separated by anterior prolongation of metasternum; mesosternum with disc differently formed and hind margin oblique; body very strongly sclerotised, polished, with minimal sculpture; pubescence absent to diffuse; legs normal.

Genus **Kimoda** n. gen.

Type species: *Kimoda globosa* n. sp.

Highly convex and globular (Figs 40, 43); smooth and shining (i. e. highly polished), dorsum without pubescence. Head of moderate size, finely margined at sides; strongly deflexed and little visible from above; eyes present; mentum broader than long, sides weakly concave; antennal grooves present between eyes and buccal region. Antennae 11-segmented.

Pronotum broader than long, broadest in basal half, domed; front angles produced; front margin convexly curved, hoodlike; hind margin less strongly curved; hind angles extending slightly rearwards; sides orientated vertically, edges slightly curved, margins not bordered.

Elytra entire, completely covering abdomen; humeri rounded;

sides (Fig. 43) in lateral view widened in basal half, very finely margined; epipleura not developed, carina absent. Scutellum triangular, very broad basally, often almost hidden by pronotal base. Wings as in most Ptiliids.

Venter: figure 41. Prosternum almost absent anterior to coxae, front margin strongly concave; procoxae nearly contiguous; prosternal process absent; pleura very broad and concave.

Mesosternum very short, orientated at 45° to metasternum; front angles broadly rounded off; sides broadly and deeply impressed for reception of front and middle legs in repose, furnished with mesocoxal lines; hind angles rectangular; hind margin straight towards sides; mesocoxae very broadly separated, inner edges hidden by a broad plate which is an outgrowth of the metasternum; plate narrowed apically reaching collar in ventral view, but internally connected by a longitudinal carina anteriorly; carina very fine, penetrating between procoxae when body is retracted; collar narrow, not extending onto pleura.

Metasternum short, as long as mesosternum; sides slightly narrowed rearwards, without visible episterna in ventral view; anterior median area produced forwards over mesosternal disc as described above; metacoxae narrowly separated by about a fifth of metasternal width; intercoxal process rather triangular, strongly produced; coxal plates narrow, entire.

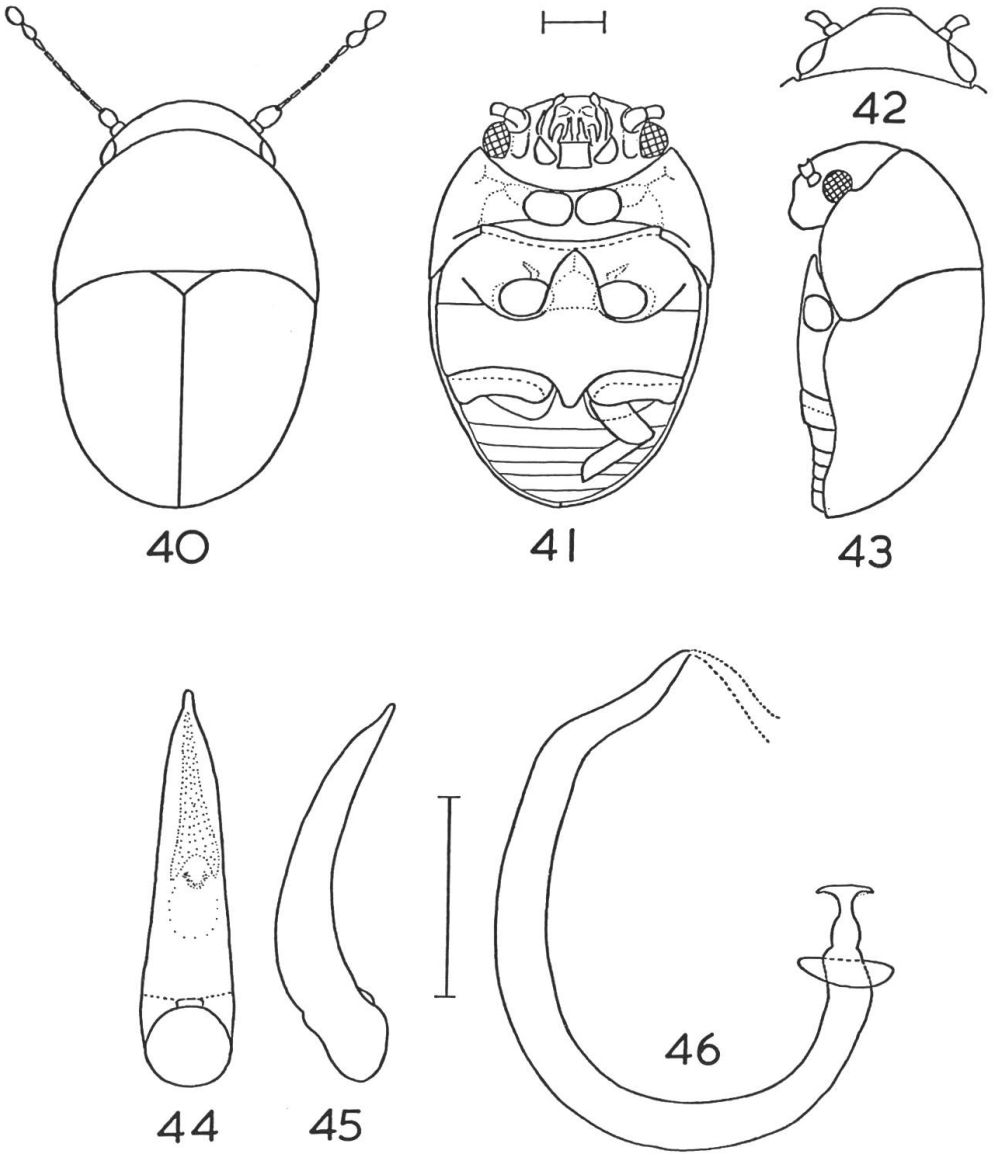
Ventrite 1 with intercoxal process bifurcate apically; femoral lines complete. Pygidium apex not dentate.

Legs short, broad; femora deeply grooved for reception of tibiae.

Derivation. An anagram of the allied genus *Mikado* Matthews.

Systematic position. This is a highly distinctive genus whose general shape coupled with meso- and meta-sternal structure permits easy recognition. Because of the wide mesocoxal separation and large metasternal process, *Kimoda* seems to be most closely allied to *Mikado* Matthews (=*Philagarica* Deane, **n. syn.**, although not all Deane's species are congeneric), with species in Japan and Australia. *Kimoda* may be easily distinguished from this genus by the following characters: body subglobose, dorsum not pubescent; pronotal and elytral sides very extensive in lateral view due to their convexity; head short; mesosternum with coxal lines; metasternum very short, process shaped differently; venter not keeled; metacoxae not contiguous, intercoxal process broad and produced; legs short and thick.

Distribution. Oriental Region: other undescribed species are known to me from tropical Asia.



Figs 40–46: *Kimoda globosa* n. sp.: 40, dorsum. 41, venter. 42, head, dorsal view. 43, lateral view. 44, aedeagus, ventral view. 45, aedeagus, lateral view. 46, spermatheca.

Kimoda globosa n. sp. Figs 40–46.

Length 0.67–0.69 mm. Reddish-brown; legs and antennae paler, yellow-brown. Very convex; smooth and shining, impunctate. Head with well-developed eyes (Fig. 42); breadth 0.29 mm; antennae moderately long, length 0.27–0.29 mm. Pronotum broadest at or close to base; breadth 0.42–0.45 mm. Elytra about as long as broad, almost as broad at base as pronotum; sides curved to apex; microsculpture very fine, little distinct, transverse, imparting a faint iridescence.

♂. Aedeagus: figure 44, 45, length 0.21 mm.

♀. Spermatheca: Figure 46*.

Holotype ♂ (MG): Mascarenes – *Reunion*: Ste. Thérèse, Pichette, 12. I. 72, in rotting vegetables, Y. G.

Paratypes: Mascarenes – *Reunion:* same data as holotype (5 ex., MM); St. Joseph, 24. II. 72, sieving under Pandanus and Agave, Y. G. (1 ex., MM); St. Denis, 7. II. 73, sieving old tree in State Garden, Y. G. (2 ex., MM); near St. Paul, 26. V. 69, old mango trees, H. F. (5 ex., HF). – *Mauritius*: Albion, 26. III. 70, sieving, C. M. C. (8 ex., MM); same locality, 21. I. 70, sieving under bark of mango, Y. G. (1 ex., MM); Flic-en-Flac, 21. I. 70, Aloe stem, Y. G. (7 ex., MM); same locality, 15. VI. 70, sieving, C. M. C. (16 ex., MM); Mare Longue, 600 – 700 m, 19. I. 71, sieving Travellers Tree, Y. G. (48 ex., MM); Balaclava, 15. V. 70, sieving, C. M. C. (18 ex., MM); Carreau Esnouf, 17. VII. 70, sieving, C. M. C. (1 ex., MM); Mare aux Vacoas, 500 m, 10. I. 71, sieving Pinus, Y. G. (1 ex., MM); Chamarel, 360 m, 22. XII. 74, P. S. (2 ex., MG). – *Rodriguez*: Cascade Pigeon, 9. V. 72, sieving at foot of Travellers Tree, Y. G. (2 ex. MM); Mont Limon, 396 m, 9. V. 72, sieving Aloe stem, Y. G. (1 ex., MM).

Other paratype material: India – West Bengal: Howrah, Asoke Nagar, 24. I. 72, in decaying banana tree, coll. T. Sen Gupta (13 ex., ZSI).
Sri Lanka – Western: Yakkala, 18 mls N. E. Colombo, 15. I. 62, cycadaceous cone, Brinck, Anderson & Cederholm (1 ex., ZIL).

Bionomics. Tropical, anthropophilic species. Mainly in dead and decaying trees, but the tree species is probably unimportant; also in rotting wood/humus, rotting vegetables and litter. Season: I–III, V–VII, XII.

Status. Immigrant oriental species.

Genus **Ptinella** Motschulsky

Ptinella Motschulsky, 1844, Bull. Soc. Imp. Nat. Moscou 17: 819.– Matthews, 1872, Trichop. Illustr. : 164. – Besuchet, 1971, Käfer Mitteleuropas 3: 329. – Johnson, 1982a, N. Z. Journ. Zool. 9: 360.

Neuglenes Thomson, 1859, Skand. Co. 1: 63. – Flach, 1889, Verh. zool.-bot. Ges. Wien 39: 511.

Body elongate, moderately broad, relatively flat (Figs 47–53); finely pubescent; dorsum generally pustulate or granulate, reticulate. Head moderately large, not bordered at sides; eyes absent to well-developed. Antennae 11-segmented.

Pronotum broader than long, sides curved, margins finely bordered; apical and hind margins ± straight, subequal in length; hind angles distinct or effaced, not produced rearwards.

Elytra longer than broad, ± subtruncate apically, exposing (in life and spirit-preserved material) upto 5 abdominal segments behind; humeri not toothed; epipleura not or barely developed, carina present or absent. Scutellum triangular. Wings when present as in most Ptiliids.

Prosternum broad in front of procoxae, about a coxal diameter in width; front margin almost straight; procoxae contiguous; pleura weakly convex.

Mesosternum (Fig 54) short; front angles angulate to toothed; hind angles effaced, separated from body sides; lateral-hind margins arcuate; disc without a process, at most slightly convex and rather tumid behind; mesocoxae almost contiguous; collar not delineated behind.

Metasternum (Fig 54) as long or rarely longer than mesosternum; episterna not apparent; hind margin not toothed mesad of coxae; metacoxae rather widely separated by a third to a half of metasternal width; coxal plates small.

Ventrite 1 without femoral lines. Pygidium without apical tooth in our species. Aedeagus asymmetrical, curved, little differentiated specifically.

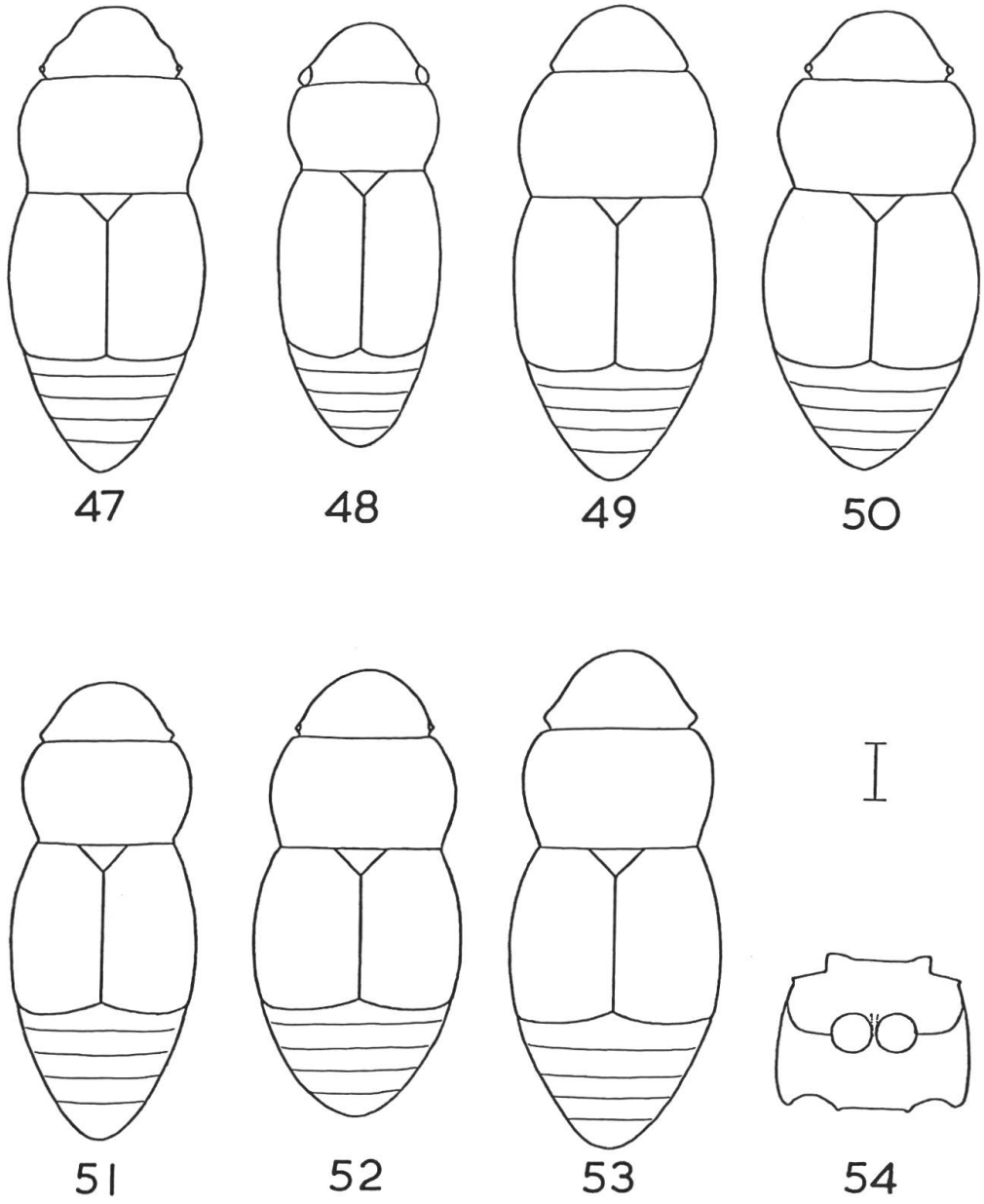
Spermatheca well-developed, specifically characteristic in our species.

Dimorphism common, the dominant form usually being the vestigial morph, characterised by being de-pigmented, blind or with much reduced eyes, and apterous. Normal individuals are often more pigmented, may have less truncate elytra, and have normal eyes and wings. For a discussion on the morphs of this and allied genera see Dybas (1978).

Taxonomy. Members of this genus are very fragile, especially those of the vestigial morph, and are extremely closely allied. It is essential to study the spermatheca of spirit-preserved material on temporary microscope slide mounts.

Distribution. Worldwide.

Nomenclature. The name *Ptinella* is currently the subject of a conservation request before the International Commision on Zoological Nomenclature (Biström, 1980).



Figs 47–54: 47–53, Dorsum of: 47, *Ptinella dentata* n. sp., vestigial morph. 48, *P. concinna* Britten, normal winged form. 49, *P. gomyi* n. sp., vestigial morph. 50, *P. mystica* n. sp., vestigial morph. 51, *P. impressicollis* Britten, vestigial morph. 52, *P. parva* n. sp., vestigial morph. 53, *P. similata* n. sp., vestigial morph. 54, Mesosternum and metasternum of *P. gomyi* n. sp.

Key to species of *Ptinella*

1. Antennae short, middle segments upto three times as long as broad 2
– Antennae long, middle segments about four times as long as broad 4
2. Narrower and smaller (Fig. 48). Spermatheca (Fig. 55). **P. concinna** Britten
- Broader, mostly larger species 3
3. Yellowish-brown; pronotum with hind angles rectangular (Fig. 51). Spermatheca: (Fig. 58). **P. impressicollis** Britten
– Dark brown; pronotum with hind angles obtuse (Fig. 52). Spermatheca (Fig. 59). **P. parva** n. sp.
4. Pronotum with hind angles strongly rectangular (Fig. 47). Spermatheca (Fig. 56). **P. dentata** n. sp.
– Pronotum with hind angles ± obtuse 5
5. Pronotum large, sides evenly curved (Fig. 49). Spermatheca (Fig. 57). **P. gomyi** n. sp.
– Pronotum shorter, sides more narrowed basally (Figs 50, 53) 6
6. Spermatheca (Fig. 60). **P. mystica** n. sp.
– Spermatheca (Fig. 61). **P. similata** n. sp.

Ptinella concinna Britten Figs 48, 55.

Ptinella concinna Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 90–91.

Length 0.56–0.58 mm, 0.70–0.72 mm (dry) to tip of abdomen. Head slightly dull, irregularly reticulate; antennae rather short, length 0.32 mm, middle segments about three times as long as broad. Pronotum short, broadest a little in front of middle, breadth 0.26–0.27 mm; sides curved, narrowed basally; hind angles only slightly obtuse, i.e. almost rectangular on the angle; surface strongly reticulate, meshes irregular, granulation little apparent; disc with pair of broad, shallow, longitudinal impressions. Elytra barely broader than pronotum, breadth 0.27–0.29 mm; sides weakly curved.

♀. Spermatheca: figure 55*.

Vestigial morph: unknown.

Normal form (Fig. 48): pale reddish-brown; eyes somewhat conical, fairly large; elytra twice as long as pronotum; winged.

Material: Mascarenes – *Mauritius*: Flic-en-Flac, 21. I. 70, sieving in sheepfold, Y. G., (1 ♀, MM).
Seychelles – *Mahé*: Cascade Estate, 1000', -III. 1909, swept from fern in cultivated country near edge of forest, P.S.T.E. (holotype ♀, studied, BMNH).

Bionomics. Tropical, anthropophilic species. Probably associated with decaying vegetation. Season: I, III.

Status. Although only known as yet from Mahé and Mauritius, this species is undoubtedly an immigrant, probably from the Oriental Region. The genus is completely unstudied in tropical Asia.

Ptinella dentata n. sp. Figs 47, 56.

Length 0.58–0.72 mm, 0.80–0.96 mm (dry) to tip of abdomen. Head shining, feebly and irregularly reticulate; antennae very long, length 0.43–0.46 mm, middle segments nearly five times as long as broad. Pronotum broadest a little in front of middle, breadth 0.32–0.34 mm; sides curved, narrowed and sinuate basally, parallel just before hind angles which are strongly rectangular; surface weakly reticulate, meshes irregular, closely granulate. Elytra about as broad as pronotum, sides curved.

♀. Spermatheca: figure 56.

Vestigial morph (Fig. 47): reddish-yellow; eyes present but minute; elytra 1.42–1.50 times as long as pronotum; apterous.

Normal form: reddish-brown; eyes well-developed; elytra twice as long as pronotum; winged.

Holotype ♀ (MG): Mascarenes – *Mauritius:* Macabe Forest, 600–700 m, 19. I. 71, sieving trunks, Y. G.

Paratypes: Mascarenes – *Reunion*: Plaine d'Affouches, 1200 m, 1. XI. 71, sieving stumps and humus by gîte, Y. G. (20 ex., MM); Plaine des Cafres, N. D. de la Paix, 1500 m, 31. XII. 70, sieving, Y. G. (2 ex., MM). – *Mauritius:* same data as holotype (6 ex., MM); Mont Cocotte, 600 m, 29. I. 71, sieving, Y. G. (1 ex., MM); near Petrin, Macchabée virgin forest, 700 m, 26. XII. 74, P. S. (1 ex., MG); foot of Black River Gorge, 80 m, 1. I. 75, under rotten trunk in primitive endemic forest, P. S. (1 ex., MG); Forêt des Macchabées, 700 m 26. XII. 74, P. S., (1 ex., MG).

Bionomics. Tropical to temperate, silvicolous species. In decaying wood. Season: I, XI, XII.

Status. Endemic to Reunion and Mauritius.

Ptinella gomyi n. sp. Figs 49, 54, 57.

Length 0.59–0.69 mm, 0.88–0.96 mm (dry) to tip of abdomen. Head slightly dull, somewhat regularly reticulate; antennae long, 0.38–0.40 mm, middle segments four times as long as broad. Pronotum rather large and long, broadest about middle, breadth 0.32–0.34 mm; sides evenly curved, hind angles obtuse; surface with well-marked reticulation, meshes small and regular, granulation distinct but sparse. Elytra about as broad as pronotum; sides very feebly curved.

♀. Spermatheca: figure 57*.

Vestigial morph (Fig. 49): reddish-yellow; eyes absent; elytra 1.54–1.66 times as long as pronotum; apterous.

Normal form: reddish-brown; eyes well-developed; elytra twice as long as pronotum; winged.

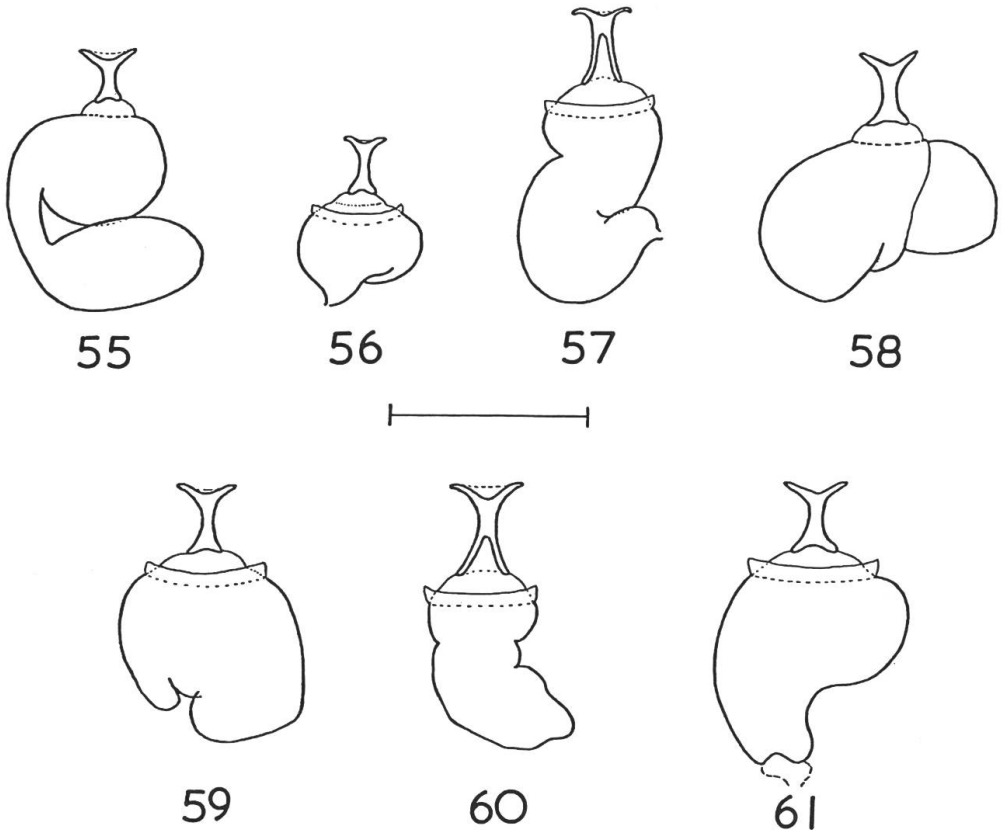
Holotype ♀ (MG): Mascarenes – *Reunion*: road from Maido, 1600 m, sieving, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (6 ex., MM) under bark (2 ex., MM); Bebour, c. 1400 m, 22. IV. 72, sieving humus in forest near gîte, Y. G. (1 ex., MM); Bras Panon, Bassin de la Paix, 31. I. 1972, sieving dead leaves, Y. G. (1 ex., MM); Plaine d'Affouches, 700–800 m, 19. X. 69, sieving along forested track, Y. G. (1 ex., MM); same locality, 1200 m, 1. XI. 71, sieving stumps and humus near gîte, Y. G. (12 ex., MM); Petite Plaine, 1200 m, 25. V. 69, sieving in forest, H. F. (2 ex., HF); between Maido and Glacière, 2400 m, 29. V. 69, sieving litter and humus under shrubs, H. F. (6 ex., HF); Cilaos, Grand Matarum, 1500 m, 1. XI. 69, sieving trunks in primary forest, Y. G. (28 ex., MM); Plaine des Makes, 14e km, 1000 m, 15. XI. 70, sieving trunks and humus, Y. G. (3 ex., MM); Mare Longue Biological Reserve, 15. II. 71, sieving stumps and soil, Y. G. (1 ex., MM); Plaine des Cafres, N. D. de la Paix, 1700 m, 28. XII. 71, sieving under decomposing planks, Y. G. (5 ex., MM); same locality, 1500 m, 31. XII. 70, sieving, Y. G. (6 ex., MM); Takamaka, 700 m, 26. I. 72, sieving very humid stumps along road from dam, Y. G. (8 ex., MM); Plaine des Chicots, 1850 m, 21. IV. 73, sieving soil under Tamarin des Hauts and Philippia near gîte, Y. G. (1 ex., MM); Cirque de Salazie, Piton Marmite, 1800 m, 4. I. 72, sieving very humid humus, Y. G. (1 ex., MM). – *Mauritius*: Mare Longue, 600–700 m, 19. I. 71, sieving Travellers Tree, Y. G. (1 ex., MM); Macabe Forest, 600–700 m, 13. I. 70, sieving dead trunk, Y. G. (1 ex., MM); Mt. le Pouce, 700 m, 20. XII. 74, P. S. (3 ex., MG).

Bionomics. Temperate, silvicolous species of the mountains, occurring much more infrequently in tropical and subtropical zones. In

decaying wood and adjacent humus, sometimes amongst litter. Season: I, II, IV, V, X–XII-

Status. Endemic to Reunion and Mauritius.



Figs 55–61: Spermatheca of: 55, *Ptinella concinna* Britten. 56, *P. dentata* n. sp. 57, *P. gomyi* n. sp. 58, *P. impressicollis* n. sp. 59, *P. parva* n. sp. 60, *P. mystica* n. sp. 61, *P. similata* n. sp.

Ptinella impressicollis Britten Figs 51, 58.

Ptinella impressicollis Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 90.

Length 0.58–0.61 mm, 0.67–0.80 mm (dry) to tip of abdomen. Head rather shining, irregularly reticulate; antennae short, 0.25–0.30 mm, middle segments nearly three times as long as broad. Pronotum broadest somewhat in front of middle, breadth 027–0.30 mm; sides curved, narrowed basally; hind angles rectangular, but sides only very briefly straight in front of them; surface strongly reticulate, meshes irregular, granulation little distinct; disc with a pair of broad, longitudinal impressions of variable distinctness. Elytra very slightly broader than pronotum; sides very feebly curved.

♀. Spermatheca: figure 58*.

Vestigal morph (Fig. 51): yellowish-brown; eyes absent; elytra 1.5–1.6 times as long as pronotum; apterous.

Normal form: darker yellowish-brown; eyes well-developed; elytra twice as long as pronotum; winged.

Material: Seychelles – *Mahé*: Morne Blanc and Morne Pilot, 1000′–2000′, high forest, X.-XI. 1908, P.S.T.E. (1 ex.); between Trois Frères and Morne Seychellois, 1500′–2000′, forest, -XII. 1908, P.S.T.E. (4 ex.); Morne Blanc, 800′+, -X. -XI. 1908, P.S.T.E. (1 ex., studied: 4 ex., BMNH and MM). – *Silhoutte*: Mont Pot-à-Eau, c. 1500′, -VIII. 1908, in forest, P.S.T.E. (5 ex.); same locality, 1000′, 6. VIII. 1908, under bark of fallen Bois Rouge in forest, P.S.T.E. (3 ex.); above Mare aux Cochons, 24. IX. 1908, from rotting branch in high forest, P.S.T.E. (6 ex., studied: 4 ex., BMNH and MM).

Bionomics. Tropical, silvicolous species of the mountains (800′–2000′). Under bark and probably in rotten wood. Season: VIII–XII.

Status. Endemic to Mahé and Silhouette.

Ptinella mystica n. sp. Figs 50, 60.

Length 0.58–0.64 mm, 0.72–0.80 mm (dry) to tip of abdomen. Head slightly dull, weakly and irregularly reticulate; antennae long, 0.40–0.43 mm, middle segments over four times as long as broad. Pronotum broadest about middle, breadth 0.32–0.33 mm; sides curved, more narrowed basally; hind angles obtuse; surface with well-marked reticulation, meshes almost regular, granulation somewhat close. Elytra very slightly broader than pronotum; sides curved.

♀. Spermatheca: figure 60.

Vestigial morph (Fig. 50): pale reddish-brown; eyes present, but minute; elytra 1.60–1.73 times as long as pronotum; apterous.

Normal form: unknown.

Holotype ♀ (MG): Mascarenes – *Reunion*: Plaine des Cafres, N. D. de la Paix, 1500 m, 31. XII. 70, sieving, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (3 ex., MM); same locality, 28. XII. 71, sieving soil under Tamarin des Hauts, Y. G. (6 ex., MM); forest below Maido, 1500 m, 29. V. 69, H. F. (15 ex., HF); Plaine des Chicots, c. 1800 m, 21. IV. 73, sieving under calumets with stumps and toadstools near gîte, Y. G. (3 ex., MM).

Bionomics. Temperate, silvicolous species of the mountains (1500–1800 m). Probably associated with litter and humus around decaying tree stumps. Season: IV, V, XII.

Status. Endemic to Reunion.

Remarks. The hind angles of the pronotum can appear toothed when examined in alcohol, but not when dry. This seems to be due to the weaker pigmentation of the pronotal edges.

Ptinella parva n. sp. Figs 52, 59.

Length 0.53–0.61 mm, 0.72–0.91 mm (dry) to tip of abdomen. Dark brown in both forms. Slightly more convex than allied species. Head rather small in proportion to pronotum, slightly dull, rather strongly but somewhat irregularly reticulate; antennae short, 0.29–0.34 mm, middle segments about three times as long as broad. Pronotum broadest ± at middle, breadth 0.27–0.32 mm; sides weakly but usually evenly curved; hind angles weakly obtuse; surface with well-marked, rather coarse and irregular reticulation, granulation little distinct. Elytra usually clearly broader than pronotum; sides very feebly curved.

♀. Spermatheca: figure 59*.

Vestigial morph (Fig. 52): eyes present but minute; elytra 1.50–1.63 times as long as pronotum; apterous.

Normal form: eyes well-developed; elytra 1.8 times as long as pronotum; winged.

Holotype (MG) ♀: Mascarenes – *Reunion*: road from Maido, 1600 m, 12. X. 69, sieving, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (4 ex., MM); same data but under bark (5 ex., MM); St. Philippe, Baril, 15. II. 71, sieving Vacoas, Y. G. (2 ex., MM); St. Joseph 24. ii. 72, sieving under Pandanus and Agave, Y. G. (1 ex., MM); Takamaka, 400 m, 14. XI. 71, under bark, Y. G. (2 ex., MM); same data but sieving trunks and soil under jamerosiers, Y. G. (2 ex., MM); Plaine des Cafres, N. D. de la Paix, 1500 m, 28. XII. 71, sieving under Tamarin des Hauts, Y. G. (6 ex., MM); same locality but 31. XII. 70, sieving (1 ex., MM); same locality but 9. I. 72, sieving dead leaves, Y. G. (2 ex., MM); heights of St. Denis. Morne des Patates à Durand, 1120 m, 2. XI. 71, sieving under bark, Y. G. (15 ex., MM); Étang-Salé, 22. II. 72, sieving Agave and soil in departmental park, Y. G. (2 ex., MM); near Cilaos, 1300 m, 27. V. 69, sieving in mountain forest, H. F. (1 ex., HF); Cilaos, Grand Matarum, 1500 m, 1. XI. 69, sieving trunks in primary forest, Y. G. (6 ex., MM); Mare Longue Biological Reserve, 15. II. 71, sieving stumps and soil, Y. G. (6 ex., MM); St. Philippe, 100 m, 15. II. 71, sieving stumps, Y. G. (7 ex., MM); Plaine des Chicots, c. 1800 m, 18. IV. 73, sieving old trunks with decomposing toadstools near gîte, Y. G. (1 ex.,

MM); same locality but c. 1850 m, 21. IV. 73, sieving soil under Tamarin des Hauts and Philippia, Y. G. (1 ex., MM); ravine of Grande Chaloupe, 590 m, 11. I. 75, primitive endemic forest, P. S. (2 ex., MG). – *Mauritius*: Mare aux Vacoas, 500 m, 10. I. 71, sieving Pinus, Y. G. (3 ex., MM); Macabe Forest, 600–700 m, 19. I. 71, sieving trunks, Y. G. (7 ex., MM); Plaine Champagne, 600 m, 10. I. 71, sieving trunks, Y. G. (1 ex., MM); Flic-en-Flac, 15. I. 71, sieving in sheepfold, Y. G. (1 ex., MM); Mt. le Pouce, 700–780 m, 20. XII. 74, superficial zone in primary endemic forest, P. S. (5 ex., MG); Mont Cocotte, 600 m, 29. I. 71, sieving, Y. G. (3 ex., MM); near Petrin, Macchabée virgin forest, 700 m, 26. XII. 74, P. S. (6 ex., MG).

Bionomics. Primarily temperate, primarily silvicolous species of the mountains; also occurring in the tropical and subtropical zones, but mainly in mountainous districts. Shows a very limited penetration of the anthropogenic landscape. Under bark and in decaying wood of various trees, also in humus around stumps; a single adventive specimen in refuse in a sheepfold. Season: I, II, IV, V, X–XII.

Status. Endemic to Reunion and Mauritius.

Ptinella similata n. sp. Figs 53, 61.

Length 0.69 mm, c. 0.9 mm (dry) to tip of abdomen. Head slightly dull, irregularly reticulate; antennae long, c. 0.46 mm, middle segments about four times as long as broad. Pronotum broadest about middle, breadth 0.34 mm; sides curved, more narrowed basally; hind angles obtuse; surface with well-marked reticulation, granulation rather sparse and flat; disc with a pair of broad, feeble and irregular, longitudinal impressions. Elytra barely broader than pronotum; sides weakly curved.

♀. Spermatheca: figure 61*.

Vestigial morph (Fig 53): reddish-yellow; eyes absent; elytra c. 1.5 times as long as pronotum; apterous.

Normal form: unknown.

Holotype ♀ (MG): Mascarenes – *Reunion*: Plaine des Chicots, 1850 m, 9. I. 75, P. S.

Paratype. Mascarenes – *Reunion*: road from Maido, 1600 m, 13. v. 69, sieving, Y. G. (1 ♀, MM).

Bionomics. Temperate, silvicolous species of the mountains (1600–1850 m). Probably associated with decaying stumps and adjacent humus. Season: I, V.

Status. Endemic to Reunion.

Genus **Leptinla** n. gen.

Type species: *Leptinla elongata* n. sp.

Body exceptionally elongate (Fig. 62), broad, flat; pubescent; dorsum granulate, reticulate. Head large, not bordered at sides; eyes absent or present. Antennae 11-segmented.

Pronotum broader than long; sides curved, margins finely bordered; apical margin almost straight; hind margin slightly arcuate, especially laterally; hind angles not produced rearwards.

Elytra almost quadrate, subtruncate apically, exposing (in life and spirit-preserved material) 5 or 6 abdominal segments behind; humeri not toothed; epipleura not developed, carina lacking. Scutellum triangular. Wings when present as in most Ptiliids.

Prosternum (Fig. 63) broad in front of procoxae, over a coxal diameter in width; front margin almost straight; procoxae contiguous; pleura slightly convex.

Mesosternum (Fig. 63) short; front angles rounded off; hind angles effaced, separated from body sides; hind margin posteriorly oblique; sides arcuate; disc strongly convex, sharply defined but not by lateral carinae, tumid behind; mesocoxae almost contiguous; collar not delineated behind.

Metasternum (Fig. 63) about as long as mesosternum; episterna not apparent; hind margin feebly toothed mesad of coxae; metacoxae widely separated by half of metasternal width; coxal plates small.

Ventrite 1 without femoral lines. Pygidium without apical tooth. Aedeagus asymmetrical. Spermatheca well-developed.

Dimorphism present, the dominant form being the vestigial morph characterised by being de-pigmented, blind and apterous. Normal individuals have eyes and wings well-developed, the elytra less abruptly truncate apically, and slightly stronger pigmentation.

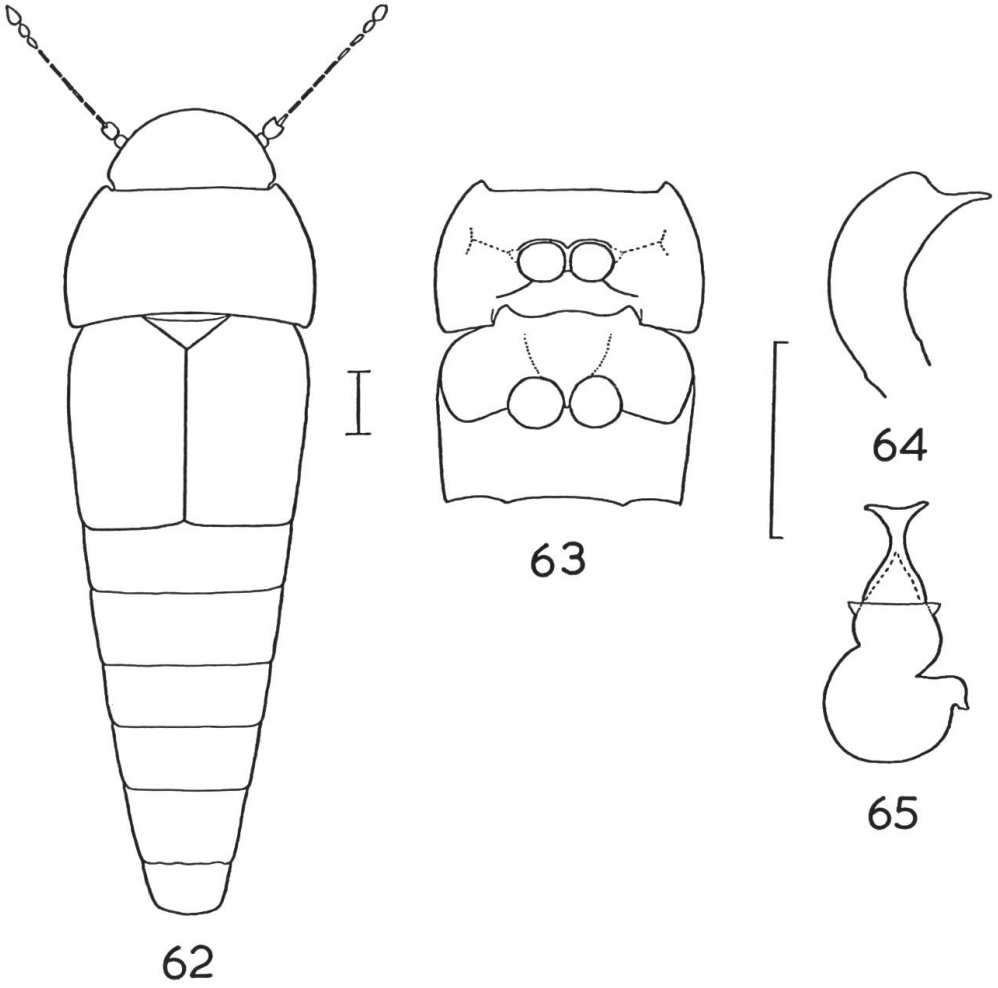
Systematic position. With Pterycine characters, and thus most closely allied to *Ptinella* and *Ptinellodes*. *Leptinla* may be recognised by its exceptionally elongated form, pronotal shape, and mesosternal structure.

Derivation. An anagram of the closely allied genus *Ptinella*.

Distribution. Mauritius.

Leptinla elongata n. sp. Figs 62–65.

Length 0.70–0.75 mm, 1.04–1.20 mm (dry) to tip of abdomen. Depressed; pubescence dense and conspicuous. Head with transverse



Figs 62–65: *Leptinla elongata* n. sp.: 62, dorsum, vestigial morph. 63, mesosternum and metasternum. 64, aedeagus, dorsal view. 65, spermatheca.

rows of coarse granulations, reticulation weak and irregular; antennae short, 0.32–0.35 mm, middle segments about three times as long as broad. Pronotum broadest in basal half, breadth 0.40–0.43 mm; sides more curved anteriorly; front angles distinct, produced; hind angles distinct, somewhat rounded; surface closely covered with ± irregularly punctate coarse granulation in uneven transverse rows; reticulation irregular but distinct. Elytra almost as broad as pronotum at or near basal quarter, thence narrowed rearwards; not or but little longer than broad; surface more finely and closely puncto-granulate than pronotum, reticulation weaker; pubescence strongly projecting beyond apical margin.

♂. Aedeagus: figure 64.

♀. Spermatheca: figure 65.

Vestigial morph (Fig. 62): pale yellowish-brown; eyes absent; elytra about 1.7 times as long as pronotum; apterous.

Normal form: darker yellow-brown, especially elytra; eyes well-developed; elytra about twice as long as pronotum; winged.

Holotype ♀ (MG): Mascarenes – *Mauritius*: Mont Cocotte, 600 m, 24. I. 71, sieving decaying trunk in forest, Y. G.

Paratypes. Mascarenes – *Mauritius*: same data as holotype (54 ex., MM).

Bionomics. Tropical, silvicolous species of the mountains (600 m). In decaying wood, perhaps associated with termites. Season: I.

Status. Endemic to Mauritius.

Remarks. This highly characteristic species is strongly reminiscent of neotropical termitophilous Pterycines, which also possess very elongated abdomens. The similarity of the spermatheca to that of *Ptinella gomyi* is quite remarkable.

Genus **Ptinellodes** Matthews

Ptinellodes Matthews, 1872, Trichopt. Illustr.: 158.– Dybas, 1978, Annls. Ent. Soc. Amer. 71: 695.

Body elongate (Fig. 66), moderately broad, little convex; pubescent; dorsum granulate, reticulate. Head moderately large, not bordered at sides; eyes absent to well-developed. Antennae 11-segmented.

Pronotum broader than long; sides curved, margins finely bordered; front margin almost straight; hind margin sinuate laterally; hind angles produced rearwards.

Elytra almost quadrate, subtruncate apically, exposing (in life and spirit-preserved material) upto 5 abdominal segments behind; humeri not toothed; epipleura not developed, carina distinct at least basally in dorsal view.

Scutellum triangular, very broad basally. Wings when present as in most Ptiliids.

Prosternum (Fig. 67) broad in front of procoxae, about a coxal diameter in width; front margin almost straight, emarginate; procoxae contiguous; pleura slightly concave.

Mesosternum (Fig. 67) short; front angles toothed; hind angles effaced, slightly separated from body sides; lateral-hind margins arcuate;

disc without a process, slightly convex and strongly tumid behind; mesocoxae almost contiguous; collar not delineated behind.

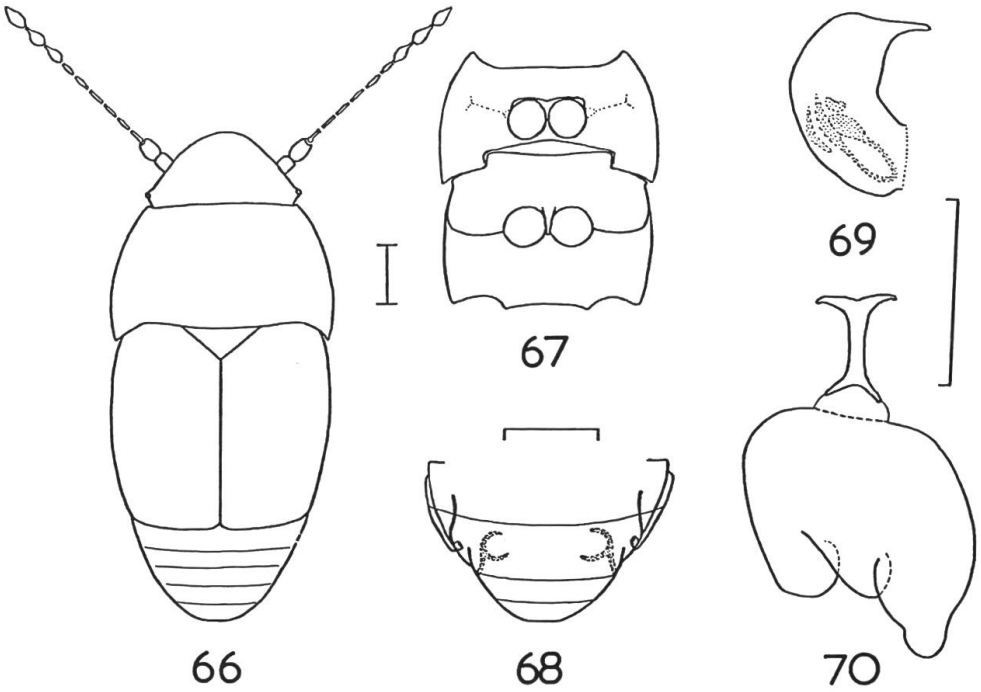
Metasternum (Fig. 67) about as long as mesosternum; episterna not apparent; hind margin finely toothed mesad of coxae; metacoxae widely separated by about half of metasternal widht; coxal plates small.

Ventrite 1 without femoral lines. Pygidium without apical tooth. Aedeagus asymmetrical, curved. Female abdomen with a pair of internal claw-like structures near apex (Fig. 70); spermatheca well-developed.

Dimorphism present, the dominant form being the vestigial morph characterised by being de-pigmented, blind or with reduced eyes, and apterous. Normal individuals have eyes and wings well-developed, the elytra somewhat longer and less abruptly truncate apically, and often slightly stronger pigmentation.

Taxonomy. The genus was revised recently by DYBAS (1978), who recognised five species and discussed their forms under the heading of ‹polymorphism›.

Distribution. Only hitherto recorded from the New World (DYBAS, 1978; JOHNSON, 1982b). However, I have seen undescribed species from Madagascar and Africa, and it is not improbable that it might also occur in Asia.



Figs 66–70: *Ptinellodes aldabricus* n. sp.: 66, dorsum, vestigial morph. 67, sterna. 68, abdominal apex of female, internal view. 69, aedeagus, dorsal view. 70, spermatheca.

Ptinellodes aldabricus n. sp. Figs 66–70.

Length 0.67–0.82 mm, 0.80–0.88 mm (dry) to tip of abdomen. Rather convex; pubescence not very dense, elytral hairs c. 0.025–0.032 mm, not overlapping. Head weakly but distinctly reticulate, not granulate, breadth 0.27–0.30 mm; antennae rather long, 0.40–0.43 mm, middle segments over three and a half times as long as broad. Pronotum broadest behind middle, usually ± at base, breadth 0.37–0.43 mm; front angles slightly produced; sides curved, side-edge (from 45°) almost straight, hind angles not sharp; surface clearly reticulate, meshes relatively large and irregular, granulation somewhat sparse. Elytra about as broad as pronotum; sides feebly curved, slightly narrowed in basal third; sculpture similar to that on pronotum; pubescence hardly projecting beyond apical margin.

♂. Aedeagus: figure 69.

♀. Spermatheca: figure 70.

Vestigial morph (Fig. 66): yellowish-brown; eyes rudimentary, reduced to a single facet; elytra 1.57–1.67 times as long as pronotum; apterous.

Normal form: usually dark brown, eyes well-developed; elytra 1.73–1.83 times as long as pronotum; winged.

Holotype ♀ (BMNH): Aldabra – Anse Cedres, 12. II. 75, Casuarina litter, Royal Soc. Expedition.

Paratypes: Aldabra – same data as holotype (43 ex., BMNH), same locality and date, Sideroxylon litter (1 ex., BMNH); Takamaka, Grandterre, Calophyllum litter (46 ex., BMNH); Point Hodoul, 22. II. 74, Suriana litter (1 ex.; BMNH); Pichard Biche Path, summer 75, Sonlo and Casuarina litter (1 ex.; BMNH); Cinq Cases: 10. III. 74 Lumnitzera litter (1 ex., BMNH), 16. II. 74 Mystroxylon litter (3 ex., BMNH), 24/27. III. 74 Pandanus litter (7ex., BMNH); Ile Michel, 29. III. 75, Casuarina litter (1 ex., BMNH). All Royal Soc. Expedition. Only 9 ex. belong to the normal form.

Bionomics. Tropical, silvicolous species. Amongst decaying vegetation around the base of various trees and shrubs. Season: II, III.

Status. Endemic to Aldabra.

Genus **Ptiliodes** Matthews

Ptiliodes Matthews, 1882, Cist, Ent. 3: 40; 1900, Trichopt. Illustr.: 75. – Johnson, 1982a, N. Z. Journ. Zool. 9: 369.

Body elongate, rather broad, relatively flat (Figs 17, 77, 78); pubescent. Head moderate in size, not bordered at sides; eyes present. Antennae 11-segmented.

Pronotum broader than long; sides ± curved, margins finely bordered; front margin straight; hind margin usually straight; hind angles not produced rearwards.

Elytra slightly longer than broad, ± subtruncate apically, exposing four abdominal segments behind; humeri not toothed; epipleura not developed, carina absent. Scutellum rather large, triangular. Wings as in most Ptiliids.

Prosternum (Fig. 72) broad in front of procoxae, about as long as a coxal diameter in width; front margin almost straight; procoxae contiguous; pleura slightly concave.

Mesosternum (Fig. 72) somewhat short; front angles toothed; hind angles obtuse, at body sides; hind margin straight, very strongly oblique; disc with a triangular elevated process delimited laterally by sloping carinae; mesocoxae almost contiguous; collar well-developed, extending across pleura, side arms weakly bent.

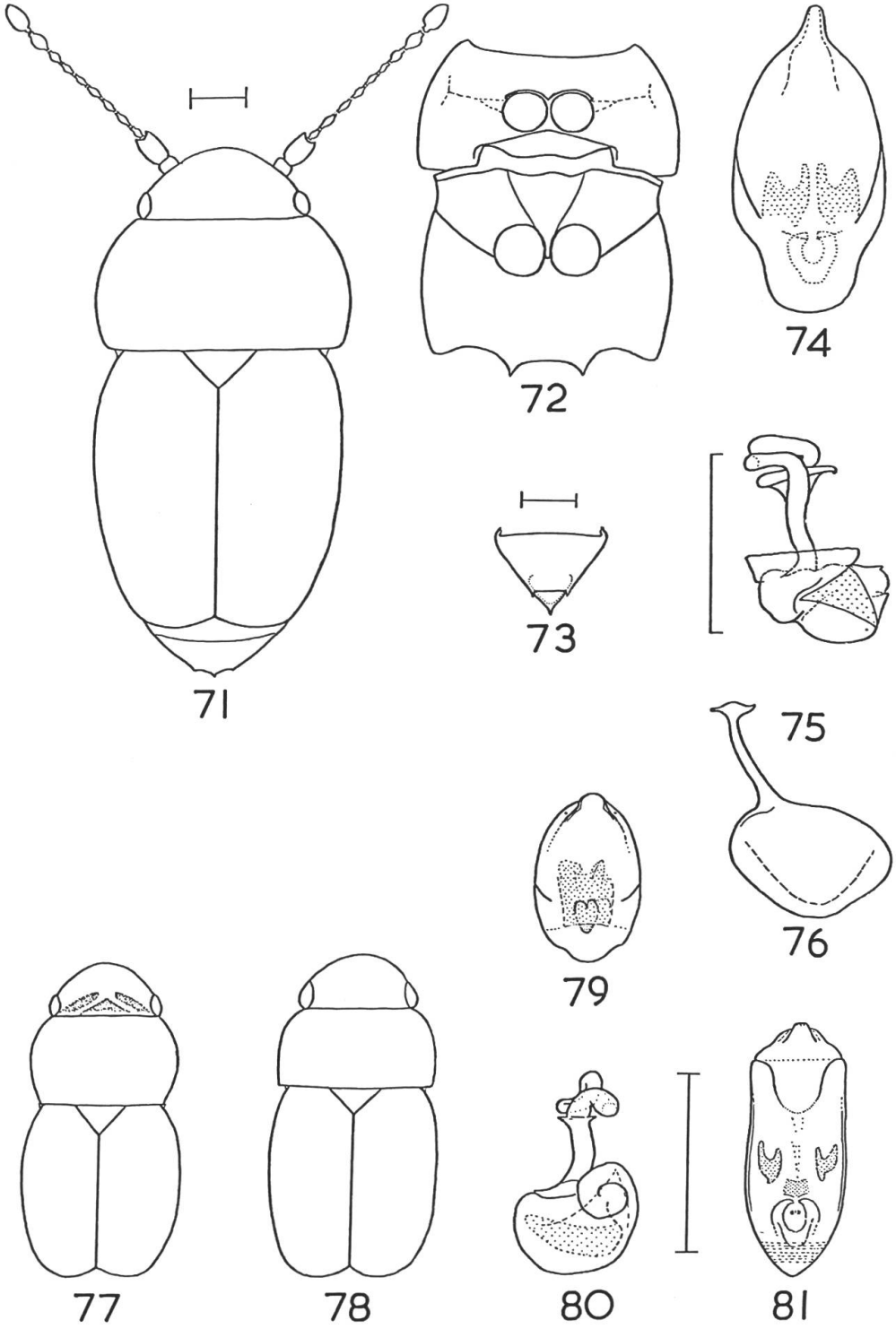
Metasternum (Fig. 72) barely longer than mesosternum; episterna not developed; hind margin strongly toothed mesad of coxae; metacoxae rather moderately separated by nearly a third of metasternal width; coxal plates moderately large.

Ventrite without femoral lines. Pygidium (Fig. 73) large and triangular, composed of tergites 9 and 10 partially fused together, 10 reduced and separable only by force; apex usually tridentate. Male: genital plate asymmetrical (Fig. 76), basal spine long, oblique; aedeagus symmetrical. Female: spermatheca well-developed but somewhat fragile.

Distribution. Oriental and Australasian regions. Only a few species are described upto now.

Key to species of *Ptiliodes*

1. Pronotum 1.5 times as broad as long, hind margin as long as front margin and elytral base, sides evenly curved. Elytra shorter, 1.7 times as long as pronotum. Length 0.61 mm.



Figs 71–81: 71–76, *Ptiliodes purpurascens* n. sp.: 71, dorsum. 72, sterna. 73, pygidium. 74, aedeagus, ventral view. 75, spermatheca. 76, male genital plate. 77, *P. cavifrons* n. sp., ♂, dorsum. 78–80, *P. pruinosus* Britten: 78, dorsum. 79, aedeagus, ventral view. 80, spermatheca. 81, *P. cavifrons* n. sp., aedeagus, ventral view.

Male head deeply grooved behind (Fig. 77). Aedeagus (Fig. 81). **P. cavifrons** n. sp.

– Pronotum at least 1.8 times as broad as long, hind margin longer than front margin and elytral base, sides more curved in front. Elytra twice as long as pronotum. Head smooth behind 2

2. Smaller, 0.58–0.62 mm. Head broad in proportion to pronotum. Antennae short. Pronotum and elytra very feebly curved at sides. Aedeagus (Fig. 79). Spermatheca (Fig. 80). **P. pruinosus** Britten

– Larger, 0.78–0.91 mm. Head narrower in proportion to pronotum. Antennae rather long. Pronotum and elytra more strongly curved at sides. Aedeagus (Fig. 74). Spermatheca (Fig. 75). **P. purpurascens** n. sp.

Ptiliodes cavifrons n. sp. Figs 77, 81.

Length 0.61 mm. Flattened. Reddish-brown, dorsum with silvery-blue iridescent bloom obscuring surface suplture; legs and antennae pale yellowish-brown. Head broad, breadth 0.23 mm, front half finely and closely punctured; antennae short, 0.28 mm, middle segments c. one and a half times as long as broad. Pronotum rather long, 1.46 times as broad as long, breadth 0.28 mm; sides ± evenly and somewhat strongly curved, front and hind margins subequal in length; base as wide as elytral base. Elytra rather short, 1.67 times as long as pronotum, about as broad, broadest around middle, sides curved.

♂. Head with a triangular impression in middle third at rear, and a broad groove extending slightly obliquely from just behind each eye almost to disc (Fig. 77); aedeagus: figure 81*.

♀. Unknown.

Holotype ♂ (MM): Mascarenes – *Reunion*: Ste. Thérèse, Pichette, 300 m, 12. I. 72, sieving rotten vegetables, Y. G.

Bionomics. Tropical anthropophilic species. In decaying vegetables. Season: I.

Status. Immigrant species, probably from the Oriental Region where the genus is represented by a number of undescribed species.

Remarks. It is thought possible that the peculiar head structure may be a secondary sexual character, although such features are quite unusual in the family (c.f. *Bambara wagneri*).

Ptiliodes pruinosus Britten Figs. 78–80.

Ptiliodes pruinosus Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 90.

Length 0.58–0.62 mm. Flattened. Reddish-brown, dorsum with bluish iridescent bloom obscuring surface sculpture; legs and antennae pale yellowish-brown. Head broad, breadth 0.22–0.23 mm; antennae short, 0.22–0.24 mm, middle segments less than twice as long as broad. Pronotum short, nearly twice as broad as long, breadth 0.27–0.29 mm; sides more curved in front than behind where they are almost straight and barely narrowed; hind angles feebly obtuse; hind margin longer than front margin; base wider than elytral base (Fig. 78). Elytra about twice as long as pronotum and perceptibly broader, breadth 0.32 mm; sides feebly curved, more narrowed basally.

♂. Aedeagus: figure 79*.

♀. Spermatheca: figure 80*.

Material: Seychelles – *Silhouette*: near Mont Pot-à-Eau, c. 1500′, -VIII. 1908, in forest, P.S.T.E. (1 ex.); above Mare aux Cochons, 1200′+, -IX. 1908, in deayed head of Vershaffeltia in forest, P.S.T.E. (17 ex.; studied: 8 ex., BMNH and MM).

Bionomics. Tropical, silvicolous species of the mountains (1200′–1500′). Associated with decaying endemic trees. Season: VIII, IX.

Status. Endemic to Silhouette. There are very similar island species awaiting study from the Pacific Ocean.

Ptiliodes pupurascens n. sp. Figs 71–76.

Length 0.78–0.91 mm. Weakly convex. Reddish to reddish-brown, dorsum with silvery-blue to purplish iridescent bloom obscuring surface sculpture; legs and antennae pale yellowish-brown. Head somewhat narrow in proportion to pronotum, breadth 0.27–0.30 mm; antennae rather long, 0.37–0.43 mm, middle segments over twice as long as broad. Pronotum rather short, about 1.8 times as broad as long, breadth 0.38–0.45 mm; sides more curved in front than behind, broadest at to behind middle; hind angles obtuse; hind margin longer than front margin, much wider than elytral base (Fig. 71). Elytra 2.0–2.2 times as long as pronotum, subequal in breadth; broadest somewhat in front of middle, sides curved.

♂. Adeagus: figure 74*.

♀. Spermatheca: figure 75*.

Holotype ♂. (MG): Mascarenes – *Reunion*: Plaine d'Affouches, 1200 m, 1. XI. 71, sieving stumps and humus near gîte, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (22 ex., MM); Cilaos, 1300 m, 27. V. 69, sieving in mountain forest, H.F. (43 ex., HF); Cilaos, Grand Matarum, 1500 m, 1. XI. 69, sieving trunks in primary forest, Y. G. (3 ex., MM); Maido, 2400 m, 29. V. 69, litter under bush, H. F. (18 ex., HF); below Maido, 1500 m, 29. V. 69, sieving in forest, H. F. (116 ex., HF); between Maido and Glacière, 2400 m, 29. V. 69, sieving litter and humus under shrubs, H. F. (9 ex., HF); Col de Bebourg, 1400 m, 25. V. 69, mountain forest, H. F. (5 ex., HF); Bras Panon, Bassin de la Paix, 31 I. 72, sieving dead leaves, Y. G. (3 ex., MM); Cirque de Salazie, Piton Marmite, 1800 m, 4. I. 72, sieving very humid humus, Y. G. (2 ex., MM); Plaine des Cafres, N. D. de la Paix, 1500 m, 31. XII. 70, sieving, Y. G. (11 ex., MM); same locality but 1700 m, 12. XII. 71, sieving under decomposing planks (44 ex.), sieving soil under Tamarin des Hauts (4 ex.), Y. G. (MM); Plaine des Chicots, c. 1800 m, 19. IV. 73, sieving from soil under calumet near gîte (4 ex.), under bark of Tamarin (1 ex.), sieving old trunk with decayed toadstools near gîte (209 ex.), Y. G. (MM); same locality, 21. IV. 73, sieving under calumets with stump and toadstools below gîte (58 ex.), c. 1850 m sieving soil under Tamarin and Philippia (22 ex.), Y. G. (MM); same locality, 1850 and 2000 m, 8–9. I. 75, P.S. (42 + 99 ex., MG).

Bionomics. Temperate, silvicolous species of the mountains (1300–2400 m). Amongst litter and decaying stumps. Season: I, IV, V, XI, XII.

Remarks. There is some variation in size in this species. Smaller specimens have a smaller and narrower pronotum, as well as shorter antennae, but the variation appears to be continous.

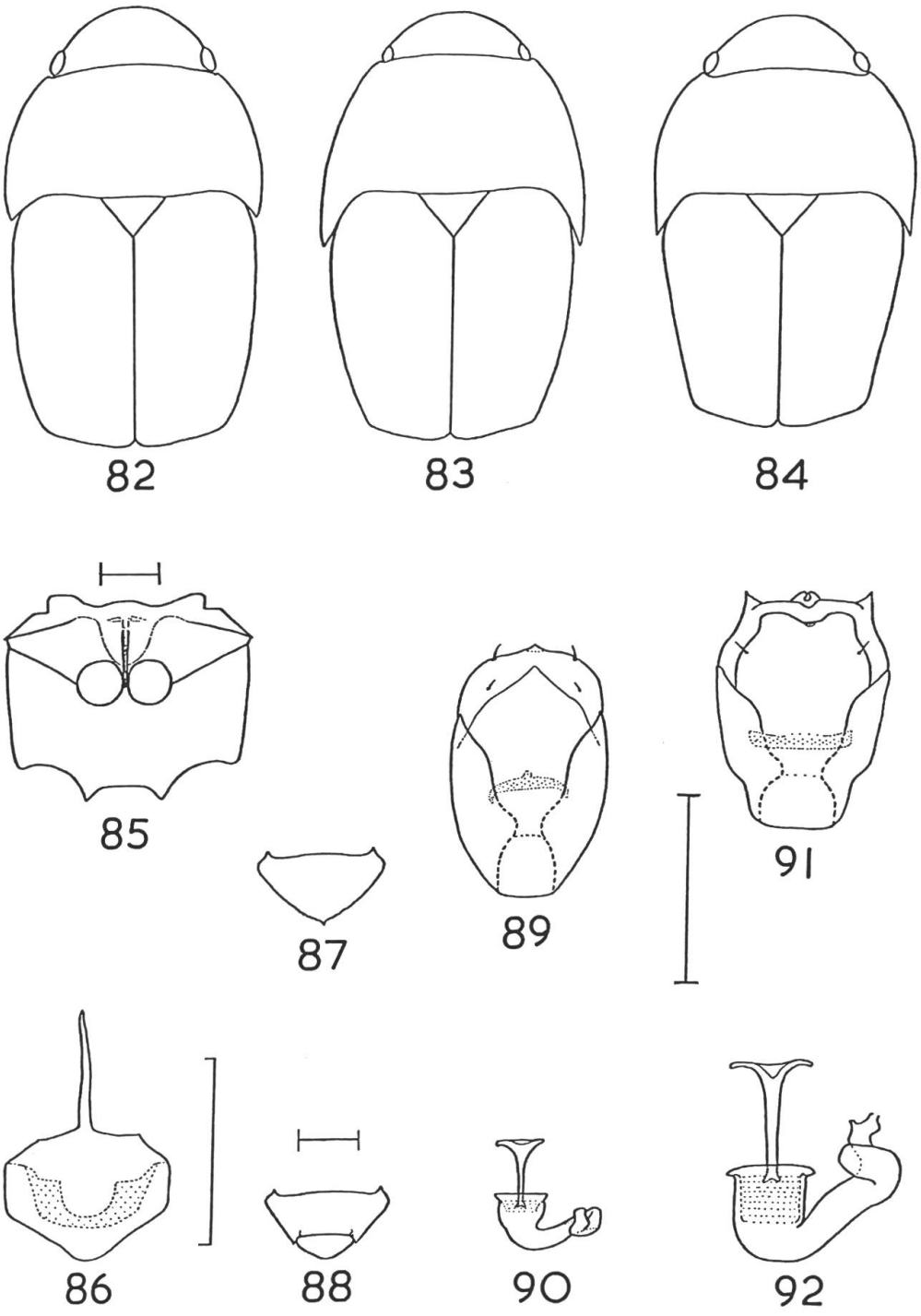
Genus **Actinopteryx** Matthews

Actinopteryx Matthews, 1872, Trichopt. Ilustr.: 148. – Flach, 1889, Verh. zool. bot. Ges. Wien 39: 509. – Besuchet, 1971, Käfer Mitteleuropas 3: 334.

Body elongate, somewhat broad, relatively flat (Figs 82–84); pubescent. Head moderate in size, not bordered at sides; eyes present. Antennae 11-segmented.

Pronotum broader than long; sides ± curved, margins finely bordered; front margin straight to slightly curved; hind margin sinuate laterally; hind angles produced rearwards.

Elytra ± quadrate, somewhat obliquely subtruncate apically, exposing four or five abdominal segments behind; humeri not toothed;



Figs 82–92: 82–84, Dorsum of: 82, *Actinopteryx fucicola* (Allibert). 83, *A. lancifer* Fauvel. 84, *A. reflexa* Britten. 85, *A. reflexa* Britten, mesosternum and metasternum. 86, *A. fucicola* (Allibert), male genital plate. 87, Idem, male pygidium. 88, *A. lancifer* Fauvel, female pygidium. 89, *A. fucicola* (Allibert), aedeagus, ventral view. 90, Idem, spermatheca. 91, *A. lancifer* Fauvel, aedeagus, ventral view. 92, Idem, spermatheca.

epipleura not developed, carina absent. Scutellum large, triangular. Wings as in most Ptiliids.

Prosternum narrow in front of procoxae, about a quarter of a coxal diameter in width; front margin straight; procoxae contiguous; pleura concave.

Mesosternum (Fig. 85) short; front angles toothed; sides strongly narrowed; hind angles obtuse, at body sides; hind margin straight, very strongly oblique; disc with a short longitudinal carina behind, with or without sloping lateral carinae; mesocoxae almost contiguous; collar strongly developed, mostly delineated behind, extending across pleura and terminating in a small tooth, side arms abruptly bent rearwards.

Metasternum (Fig. 85) somewhat longer than mesosternum; episterna not developed; hind margin very strongly toothed mesad of coxae; metacoxae rather widely separated by about a third of metasternal width; coxal plates moderately large.

Ventrite 1 without femoral lines. Pygidium large and triangular, formed of tergites 9 and 10 completely fused together in male (Fig. 87), separate in female (Fig. 88); pygidium apex usually with median tooth in male, rounded in female, lateral tooth usually little distinct. Male genital plate symmetrical (Fig. 86), basal spine straight; aedeagus symmetrical. Female spermatheca well-developed.

Distribution. The few known species are sporadically distributed about the northern Atlantic, Indian and Pacific Oceans, and are strictly halophilous.

Key to species of *Actinopteryx*

1. Reddish-brown, antennae yellowish. Pronotum slightly more convex, domed, distinctly granulate, hind angles usually profoundly produced (Fig. 83). Mesosternal disc without lateral carinae. Pygidium of male with apex truncate. Aedeagus (Fig. 91). Spermatheca (Fig. 92). **A. lancifer** Fauvel
– Brownish-black, antennae pale brown. Pronotum flatter, not domed, strongly reticulate but not granulate, hind angles not so strongly produced. Mesosternal disc delineated laterally by fine sloping carinae (Fig. 85). Pygidium of male with apex toothed. Aedeagus (Fig. 89). Spermatheca (Fig. 90) 2
2. Pronotum ample, hind angles drawn out and pointed (Fig. 84), side-edge ± straight. **A. reflexa** Britten

– Pronotum less ample, hind angles less drawn out and more blunt (Fig. 82), side-edge ± evenly curved.
A. fucicola (Allibert)

Actinopteryx fucicola (Allibert) Figs 82, 86, 87, 89, 90.

Trichopteryx fucicola Allibert, 1844, Rev. Zool. Paris 7: 52.
Actinopteryx fucicola; Matthews, 1872, Trichop. Illustr.: 150. – Flach, 1889, Verh. zool. bot. Ges. Wien 39: 510. – Besuchet, 1971, Käfer Mitteleuropas 3: 334.

Length 0.77–0.86 mm. Blackish, sides of pronotum often lighter; antennae pale brown, including two basal segments. Head somewhat dull, sculpture similar to that on pronotum; antennae long, middle segments over four times as long as broad, length 0.43–0.48 mm. Pronotum broadest slightly behind middle, breadth 0.40–0.50 mm; sides curved; side-edge (from 45°) ± evenly curved; hind angles moderately produced, rather blunt in dorsal view (Fig. 82); surface with leather-like reticulation, granulation absent; disc sometimes (especially in male) with a pair of broad, feeble longitudinal impressions. Elytra over twice as long as pronotum, narrower than it in male, almost as broad in female; sides nearly straight, usually slightly narrowed apically. Mesosternal disc with fine lateral carinae. Pygidium with lateral teeth effaced.

♂. Pygidium apex with median tooth (Fig. 87); aedeagus: figure 89*.

♀. Spermatheca: figure 90*.

Material: Mascarenes – *Mauritius*: Poste de Flacq, 18. I. 70, under debris, Y. G. (4 ex., MM); Souillac, 17. I. 70, under seaweed on Gris-Gris Beach, Y. G. (7 ex., MM); Flic-en-Flac, 15. I. 71, under seaweed on beach, Y. G. (13 ex., MM); Cap Malheureux, 30. XII. 74, P. S. (1 ex., MG).

Wider distribution. Seacoasts of Europe and North Africa, east coast of U.S.A. (Dybas, 1976). I have also seen it from the West Indies, Northern Yemen, Somalia and Madagascar.

Bionomics. Tropical (temperate in northern hemisphere), halophilous species. Under and amongst decaying seaweed and tidal refuse on the shore. Season: XII, I.

Status. Native Atlantic/western Indian Ocean species.

Actinopteryx lancifer Fauvel Figs 83, 88, 91, 92.

Actinopteryx lancifer Fauvel, 1891, Rev. d'Ent. 10: 148–149.
Actinopteryx rufescens Britten, 1926b, Trans. Linn. Soc. Lond. Zool. 19: 92, **n. syn.**
Actinopteryx colossus Deane, 1931, Proc. Linn. Soc. N. S. Wales 56: 232–233, **n. syn.**
Myrmecotrichis acutangula Deane, 1931, Proc. Linn. Soc. N. S. Wales 56: 237, **n. syn.**

Length 0.74–0.80 mm. Dark reddish-brown, head often slightly darker; antennae yellow, two basal segments included. Head indistinctly reticulate, with scattered granules; antennae long 0.40–0.43 mm, middle segments about four times as long as broad. Pronotum broadest behind middle, usually ± near base, usually more domed and convex than in other species; sides curved; side-edge (from 45°) ± straight in basal half; hind angles very strongly produced and drawn out, sharp (Fig. 83); surface distinctly granulate, reticulate; disc without longitudinal impressions. Elytra about twice as long as pronotum and narrower than it; usually narrowed apically. Mesosternal disc without sloping lateral carinae.

♂. Pygidium with apex truncate, lateral teeth distinct; aedeagus: figure 91*.

♀. Pygidium with apex rounded (Fig. 88); spermatheca: figure 92*.

Material: Mascarenes – *Mauritius*: Souillac, 17. I. 70, under seaweed on Gris-Gris Beach, Y. G. (2 ex., MM); Albion, 26. III. 70, sieving, C. M. C. (13 ex., MM); Flic-en-Flac, 15. VI. 70, sieving, C. M. C. (4 ex., MM).
Seychelles – *Mahé*: Grand Anse, -IV. 76, seaweed on beach, G.K. (1 ex., BMNH); Anonymé islet, -I. 1909, seaweed on beach, P.S.T.E. (23 ex.; studied: 10 ex., BMNH and MM). – *Grande Soeur*: Grande Anse, 31. I. 71, under seaweed, J.B. (7 ex., MM). – *Curieuse*: Baie Laraie, 3–17. VIII. 72, in mangrove, P.L.G.B & J.J.V.M. (10 ex., MRAC). – *Praslin*: Fond de l'Anse. 2–16. VIII. 72, in rachis of coconut palms, P.L.G.B. & J.J.V.M. (9 ex., MRAC).

Wider distribution. New Caledonia (Fauvel, 1891; Deane, 1931); Fiji (Deane, 1931). I have seen a number of specimens from diverse Pacific Islands, as well as from Madagascar and Somalia.

Bionomics. Tropical, halophilous species. Under and amongst decaying seaweed and other refuse on the shore. Season: I, III, IV, VI, VIII.

Status. Native Indo-Pacific species.

Synonymy. I have studied five syntypes of *A. lancifer* (IRSNB), the holotype and two paratypes of *A. colossus* (SAM), the holotype of *A. acutangula* (SAM), and the holotype and nine paratypes of *A. rufescens* (BMNH and MM). On the basis of their external characters and genitalia, they all belong to a single species, although there is quite marked variation in the form of the pronotal hind angles.

Actinopteryx reflexa Britten Figs 84, 85.

Actinopteryx reflexa Britten, 1926a, Ent. Mon. Mag. 62: 50.
Actinopteryx acuminata Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 91–92, **n. syn.**
Actinopteryx torretassoi Rosskothen, 1937, Pubb. Mus. Ent. Pietro Rossi 2: 197–198, **n. syn.**

Length 0.72–0.83 mm. Blackish, sides of pronotum usually, elytra frequently, brownish; antennae pale brown, two basal segments included. Head somewhat dull, sculpture similar to that on pronotum; antennae long, 0.40–0.48 mm, middle segments at least four times as long as broad. Pronotum broadest close to middle, breadth 0.45–0.50 mm; sides feebly curved and almost straight in basal half; side-edge (from 45°) almost straight behind; hind angles strongly produced and drawn out, very sharp (Fig. 84); surface with leather-like reticulation, granulation absent; disc without longitudinal impressions. Elytra about twice as long as pronotum and narrower than it; usually very conspicuously narrowed apically. Mesosternal disc with fine lateral carinae (Fig. 85). Pygidium with lateral teeth effaced.

♂. Pygidium apex with median tooth; aedeagus as in *fucicola*.

Material: Seychelles – *Mahé*: Anse la Mouche, 18. I. 71, under seaweed, J. B. (8 ex., MM); Anse Marie-Louise, 17. I. 71, under seaweed, J. B. (5 ex., MM); Grand Anse, -IV. 76, seaweed on beach, G. K. (7 ex., BMNH); Long islet, -VII. 1908, seaweed on beach, P.S.T.E., 2 ex.; Anonymé islet, -I. 1909, seaweed on beach, P.S.T.E. (12 ex.; studied: 7 ex., BMNH and MM). – *La Digue*: Anse la Passe, 28. I. 71, under seaweed, J. B. (1 ex., MM). – *Marianne*: 29. I. 71, under seaweed, J. B. (2 ex., MM). – *Aride: 18. VIII. 75, S. M. Bunt coll. (1 ex., OUM).*
Comores – *Moheli*: Moihani, 20. VIII. 69, Y. G. (5 ex., MM).

Wider distribution. Sinai (Rosskothen, 1937); Western Australia (Britten, 1926a). I have seen a number of other specimens from the borders of the Red Sea southwards to Kenya and Tanzania.

Bionomics. Tropical, halophilous species. Under and amongst decaying seaweed and tidal refuse on the shore. Season: I, IV, VIII.

Status. Native Indian Ocean species.

Synonymy. I have studied seven syntypes of the Australian *A. reflexa* (BMNH and MM), the holotype and six paratypes of *A. acuminata* (BMNH and MM), and four syntypes of *A. torretassoi* (MCSNM), including the genitalia of each. All are without doubt the same species. Of Britten's two specific names, *A. reflexa* appeared in March, *A. acuminata* in December.

Genus **Nephanes** Thomson

Nephanes Thomson, 1859, Skand. Col. 1: 62. – Matthews, 1872, Trichopt. Illustr.: 104. – Flach, 1889, Verh. zool. bot. Ges. Wien 39: 514. – Johnson, 1968, Entomologist 101: 76. – 1982a, N. Z. Journ. Zool. 9: 372. – Besuchet, 1971, Käfer Mitteleuropas 3: 333.

Zamenhofia Vuillet, 1911b, Ins. Rev. Illustr. Ent. (Rennes) 1: 219. – Vuillet, 1911c, Ins. Rev. Illustr. Ent. (Rennes) 1: 259.

Body elongate, somewhat broad, relatively flat (Fig. 93); pubescent. Head rather large, not bordered at sides; eyes present. Antennae 11-segmented.

Pronotum broader than long; sides somewhat curved, margins finely bordered; front and hind margins almost straight; hind angles not produced rearwards.

Elytra almost quadrate, subtruncate apically, exposing upto four abdominal segments behind; humeri not toothed; epipleura not developed, carina absent. Scutellum triangular. Wings as in most Ptiliids.

Prosternum rather narrow in front of procoxae, about a quarter of a coxal diameter in width; front margin almost straight; procoxae contiguous; pleura weakly concave.

Mesosternum (Fig. 94) short; front angles toothed; hind angles slightly obtuse, situated at body sides; hind margin straight, very feebly oblique; disc tumid behind, not carinate; mesoxae contiguous; collar delineated and almost straight behind, extending across pleura, side arms straight.

Metasternum (Fig. 94) longer than mesosternum; episterna not apparent; hind margin toothed mesad of coxae; metacoxae somewhat moderately separated by about a quarter of the metasternal width; coxal plates rather large.

Ventrite 1 without femoral lines. Pygidium large and triangular, composed of tergites 9 and 10 completely fused together; apex ± tridentate. Aedeagus symmetrical. Spermatheca well-developed.

Distribution. Europe, Africa and the New World; as an adventive at least in New Zealand.

Nomenclature. The name *Nephanes* is currently the subject of a conservation request before the International Commisssion on Zoological Nomenclature (Biström, 1980).

Nephanes titan (Newman) Figs 93–96.

Trichopteryx titan Newman, 1834, Ent. Mag. 2: 201.
Nephanes titan; Matthews, 1872, Trichopt. Illustr.: 106; Flach, 1899, Verh. zool. bot. Ges. Wien 39: 514. – Besuchet, 1971, Käfer Mitteleuropas 3: 333–334.

Length 0.50–0.54 mm. Brownish-black; antennae dark brown, two basal segments and legs yellowish. Head sculptured much as pronotum; antennae rather short, 0.26–0.29 mm, middle segments nearly twice as long as broad. Pronotum broadest at to just behind middle, breadth 0.24–0.26 mm; hind angles obtuse (Fig. 93); surface with well-marked reticulation, obscuring the coarse and close but very flattened granulation. Elytra nearly twice as long as pronotum, sides almost straight although widened apically where they are slightly wider than pronotum; surface more shining than pronotum, sculpture similar but weaker.

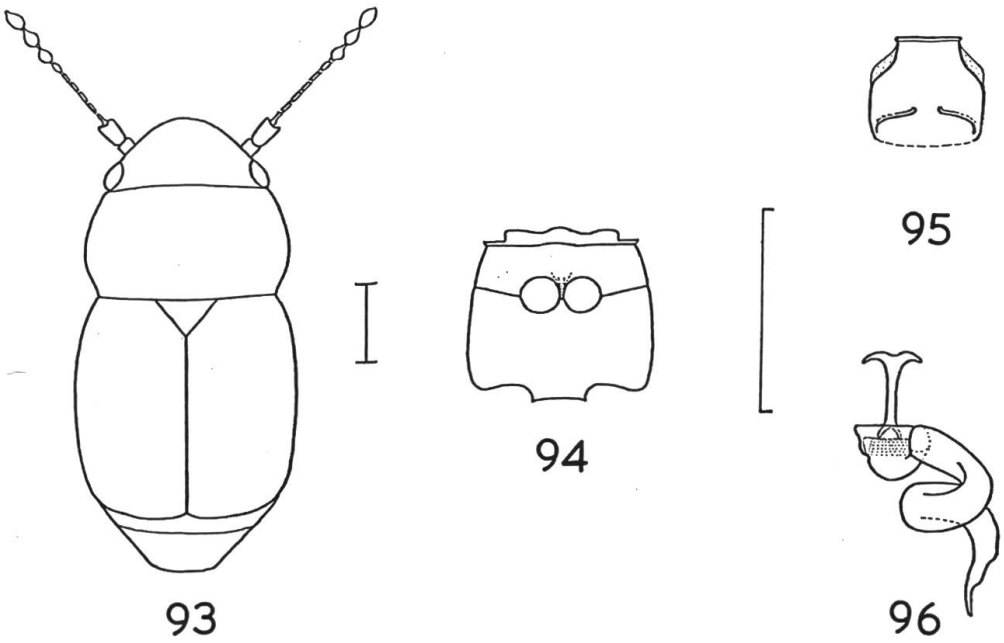
♂. Aedeagus: figure 95.

♀. Spermatheca: figure 96.

Material: Mascarenes – *Reunion*: Ste. Thérèse, Pichette, 300 m, sieving dung heap, Y. G. (9 ex., MM).

Wider distribution. Europe and U.S.A. (Dybas, 1976); New Zealand (Johnson, 1982a). I have also seen numerous specimens from Canada and West Africa.

Bionomics. In the Mascarenes a tropical, anthropophilic species.



Figs 93–96: *Nephanes titan* (Newman): 93, dorsum. 94, mesosternum and metasternum. 95, aedeagus, ventral view. 96, spermatheca.

In old dung heaps, which are also its main microhabitat in the northern hemisphere. Season: ?I. (throughout the year in the British Isles).

Status. Immigrant holarctic species, although DYBAS (1976) has questioned its origin. Undoubtedly introduced by Europeans along with livestock during colonisation.

Genus **Acrotrichis** Motschulsky

Acrotrichis MOTSCHULSKY, 1848, Bull. Soc. Imp. Nat. Moscou 21: 568. – BESUCHET & SUNDT, 1971, Käfer Mitteleuropas 3: 335. – JOHNSON, 1982a, N. Z. Journ. Zool. 9: 373.

Trichopteryx KIRBY & SPENCE, 1826, Introd. Ent. 3: 41; – MATTHEWS, 1872, Trichopt. Illustr.: 112. – FLACH, 1889, Verh. zool. bot. Ges. Wien 39: 516 (homonym: not *Trichopteryx* Hübner 1825, Lepidoptera).

Body elongate, somewhat broad, relatively flat (Figs 97–99, 102–105); granulate; pubescent. Head variable in size, not bordered at sides; eyes present. Antennae 11-segmented.

Pronotum broader than long; sides ± curved, margins finely bordered; front margin straight to slightly curved; hind margin sinuate laterally; hind angles produced rearwards.

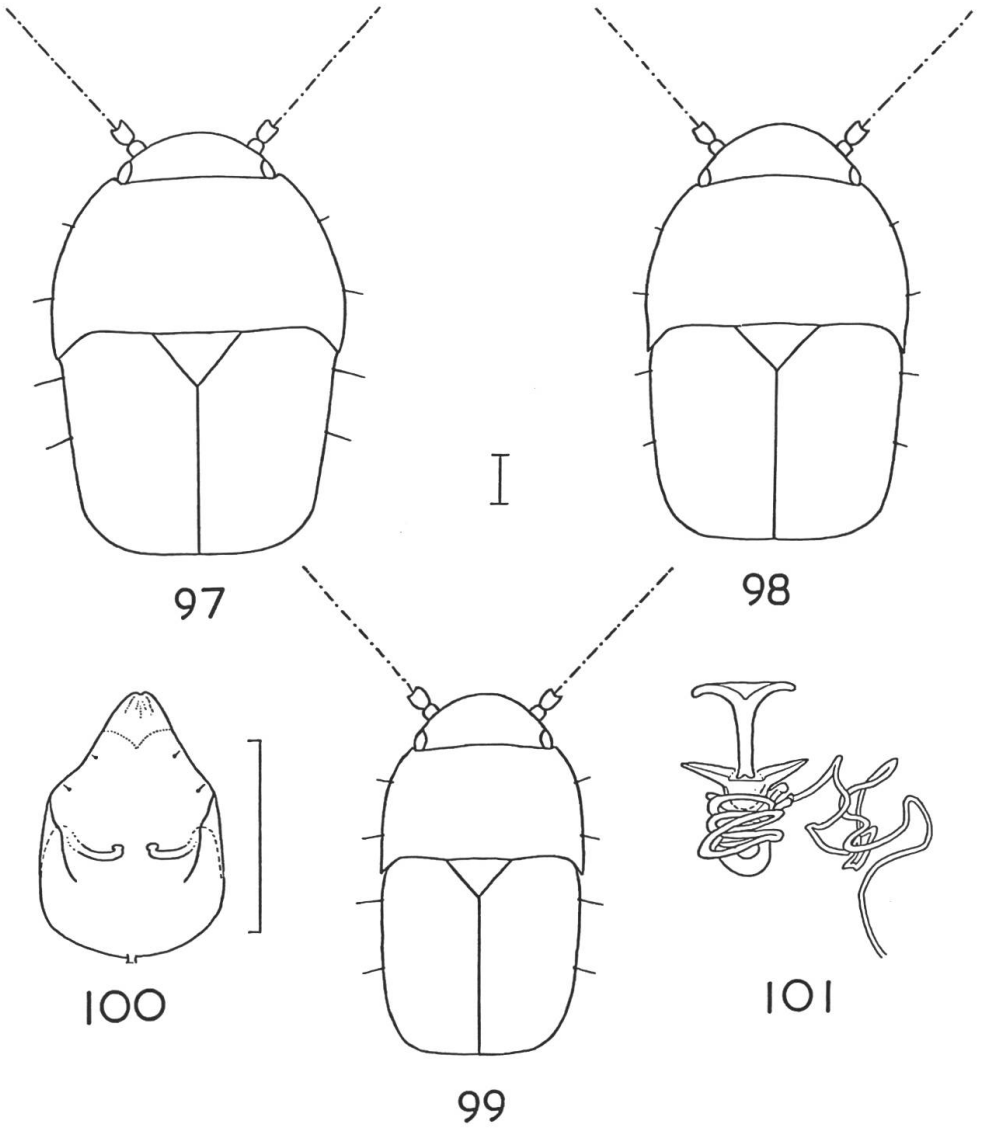
Elytra ± quadrate, subtruncate apically, exposing upto four abdominal segments behind; humeri not toothed; epipleura not to markedly developed, carina rarely present in some exotic forms. Scutellum large, triangular. Wings as in most Ptiliids.

Prosternum rather narrow in front of procoxae, about a third of a coxal diameter in width; front margin straight; procoxae contiguous; pleura concave.

Mesosternum (Fig. 106) short; front angles toothed; hind angles obtuse, located at body sides; hind margin straight, slightly oblique; disc with a short longitudinal carina behind; mesocoxae contiguous; collar strongly developed, delineated and rather sinuate behind, extending across pleura, side arms bent.

Metasternum (Fig. 106) as long or longer than mesosternum; episterna not developed; hind margin toothed mesad of coxae; metacoxae rather narrowly separated by about a fifth to a sixth of the metasternal width; coxal plates large and entire.

Ventrite 1 without femoral lines. Pygidium large and triangular, composed of tergites 9 and 10 which are completely fused together; apex ± tridentate, although some or all may be effaced. Male genital plate (internally covering apical emargination to last visible ventrite) symmetrical, basal spine straight; aedeagus symmetrical, occasionally



Figs 97–101: 97–99, Dorsum of: 97, *Acrotrichis confusa* n.sp. 98, *A. discoloroides* Johnson. 99, *A. dissona* n.sp. 100, *A. confusa* n.sp., aedeagus, ventral view. 101, *A. confusa* n.sp., spermatheca.

specifically distinctive. Female spermatheca well-developed, showing excellent specific differences.

Taxonomy. The numerous members of this genus are very similar and variable. External distinctions are primarily of size, colour, shape and pronotal sculpture, the latter difficult to convey by words or figures. A study of the genitalia is indispensible for the correct determination of most species, although the Seychelles and Mascarene ones are mostly quite distinctive amongst themselves.

Distribution. Worldwide.

Key to species of *Acrotrichis*

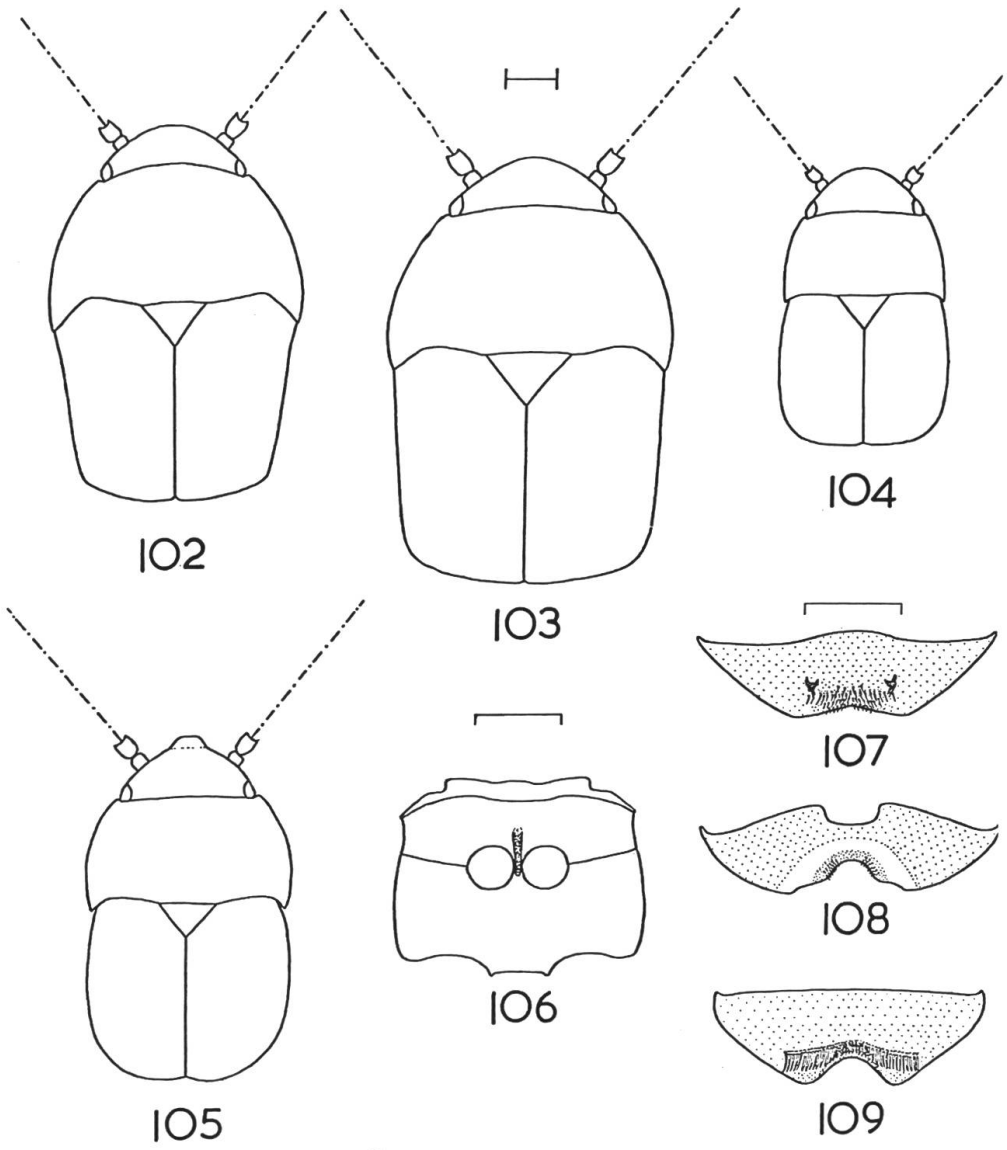
1. Sides of pronotum and elytra with outstanding setae (Figs 97–99). Spermatheca rudimentary (eg. Fig. 101) 2
– Sides of pronotum and elytra without setae. Spermatheca always well-developed 4
2. Broader, larger, length 0.90–1.00 mm. Pronotal and elytral setae long. Pronotum very ample, broader than elytra which are narrowed apically (Fig. 97). Aedeagus (Fig 100). **A. confusa** n. sp.
– Narrower, smaller. Pronotum smaller, about as broad as elytra which are not or less distinctly narrowed apically .. 3
3. Slightly broader, less parallel, larger, 0.83–0.90 mm. Pronotal and elytral setae fine and short. Pronotum duller, slightly sinuate at hind angles (Fig. 98), side-edge curved. Parthenogenetic. **A. discoloroides** Johnson
– Slightly narrower, more parallel, smaller, 0.74–0.80 mm. Pronotal and elytral setae long. Pronotum more shining, not sinuate at hind angles (Fig. 99), side-edge nearly straight. Aedeagus as *A. confusa*. **A. dissona** n. sp.
4. Pronotum strongly domed, broader than elytra which are strongly narrowed apically (Fig. 102). Dark brown, rather dull. Male ventrite 6 (Fig. 109); aedeagus (Fig. 114). Spermatheca (Fig. 116). **A. cursitans (Nietner)**
– Pronotum not so domed, about as broad as elytra which are not or only weakly narrowed apically 5
5. Larger, 0.90–0.94 mm, more convex. Reddish-brown, rather shining. Pronotum more ample, elytra slightly narrowed apically (Fig. 103). Aedeagus (Fig. 110). Spermatheca (Fig. 115). **A. africana** Johnson
– Smaller, 0.59–0.78 mm, flatter, pronotum less ample, elytra not narrowed apically 6
6. Narrower, length 0.59–0.62 mm. Head rather dull, coarsely and closely granulate. Antennae short. Pronotum subparallel in basal half (Fig. 104). Spermatheca (Fig. 118). **A. britteni** Johnson
– Broader. Head shining, with scattered fine points. Antennae very long. Pronotum rounded at sides (eg. Fig. 105) 7
7. Larger, 0.72–0.78 mm; blackish. Pronotum finely and closely granulate, reticulate. Male clypeus protruding and up-

turned (Fig. 105). Ventrite 6 with a pair of teeth on disc (Fig. 107). Aedeagus (Fig. 111–112). Spermatheca (Fig. 117).

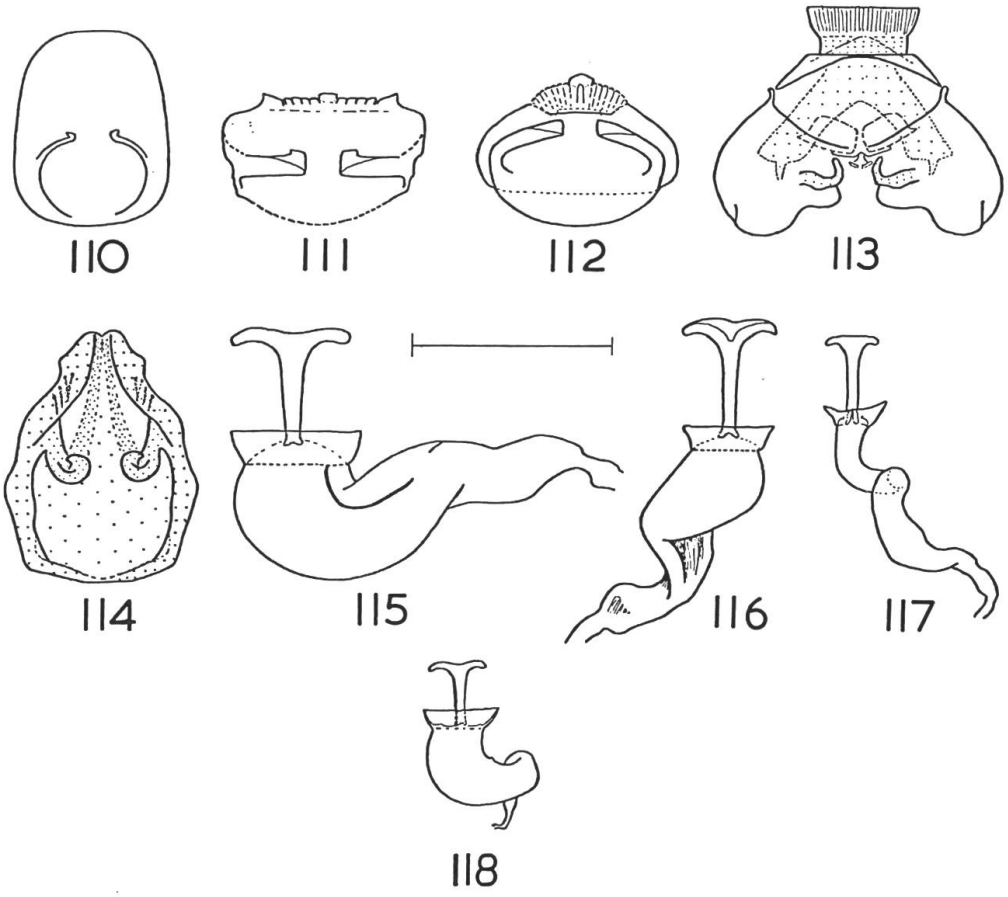
A. bidentata n. sp.

– Smaller, 0.62–0.64 mm; pale brown. Pronotum reticulate, granulation not apparent. Male clypeus normal. Ventrite 6 without teeth (Fig. 108). Aedeagus (Fig. 113).

A. blandula n. sp.



Figs 102–109: 102–105, Dorsum of: 102, *Acrotrichis cursitans* (Nietner). 103, *A. africana* Johnson. 104, *A. britteni* Johnson. 105, *A. bidentata* n.sp., male. 106, *A. bidentata* n.sp., mesosternum and metasternum. 107, *A. bidentata* n.sp., ventrite 6, male. 108, *A. blandula* n.sp., ventrite 6, male. 109, A. *cursitans* (Nietner), ventrite 6, male.



Figs 110–118: 110–114, Aedeagus, ventral view, of: 110, *Acrotrichis africana* Johnson. 111, *A. bidentata* n.sp. 112, *A. bidentata* n.sp. tilted forwards. 113, *A. blandula* n.sp. 114, *A. cursitans* (Nietner) 115–118, Spermatheca of: 115, *A. africana* Johnson. 116, *A. cursitans* (Nietner) 117, *A. bidentata* n.sp. 118, *A. britteni* Johnson.

Acrotrichis (Ctenopteryx) confusa n. sp. Figs 97, 100, 101.

Length 0.90–1.00 mm. Body rather broad; sides with outstanding setae. Blackish, elytra diluted apically; antennae brown, two basal segments brownish-yellow. Head shining, with scattered points, reticulation indistinct; antennae long, 0.45–0.50 mm, middle segments over three times as long as broad. Pronotum ample (Fig. 97), breadth 0.58–0.62 mm; sides with two setae; side-edge (from 45°) weakly curved, straight towards the somewhat drawn out hind angles; surface finely and closely granulate, reticulation well marked. Elytra narrower than pronotum, clearly narrowed apically; sides with two (rarely three) long setae, humeral seta c. 0.056–0.064 mm, i.e. much longer than width of antennal base. Pygidial teeth effaced.

♂. Aedeagus: figure 100*.

♀. Spermatheca rudimentary: figure 101*.

Holotype ♂ (MG): Mascarenes – *Reunion*: Salazie, 15. I. 69, at light, Y. G.

Paratypes: Mascarenes – *Reunion:* same data as holotype (1 ex., MM); Salazie, L'Escalier, 2. I. 69, rotting vegetables, Y. G. (2 ex., MM); Salazie, Rivière du Mat, La Pagode, 250 m, 10. I. 69, wet gravel under waterfall, Y. G. (3 ex.,MM); Plaine des Palmistes, La Petite Plaine, 1200 m, 20. III. 66, in rotten trunk, Y. G. (3 ex., MM); same localitiy, 25. V. 69, in rotten wood and trunk, Y. G. (6 ex., MM), H.F. (1 ex., HF), sieving in forest, H.F. (2 ex., HF); L'Echo, road from Plaine des Palmistes, 600 m, 31. XII. 70, sieving humus, Y. G. (13 ex., MM); Hell Bourg, Mare à Poule d'Eau, 700 m, 23. IV. 67, under bark, Y. G. (3 ex., MM); road from Takamaka, 400 m, 10. I. 69, under bark, Y. G. (1 ex., MM); Takamaka, 500 m, 14. XI. 71, in mowings, Y. G. (1 ex., MM); road from Maido, 1500 m, dead trunk, Y. G. (1 ex., MM); Bras Panon, Bassin de la Paix, 31. I. 72, sieving dead leaves, Y. G. (3 ex., MM); Plaine des Gregues, 650 m, 23. II. 72, sieving under vétyver, Y. G. (6 ex., MM) Ste. Suzanne, Cascade du Niagara, 19. I. 72, sieving rotting vegetables, Y. G. (3 ex., MM); heights of St. Paul, La Petite France, 110 m, 29. X. 72, sieving debris from perfume plants, Y. G. (76 ex., MM); Plaine des Chicots, c. 1800 m, 19. IV. 73, sieving old trunks with decomposing toadstools near gîte, Y. G. (16 ex., MM); Gande Chaloupe, 430–590 m, 11. I. 75, primitive endemic forest, P. S. (1 ex., MG); Basse-Vallée, 700 m, 13. I. 75, endemic forest, P. S. (13 ex., MG); St. Philippe, 14–15. I. 75, P. S. (1 ex., MG).

Other paratype material: Brazil–Santa Catarina: Nova Teutonia, -IX. 1958, F. Plaumann (31 ex., MM).

Bionomics. Tropical to temperate, mainly silvicolous species, although almost equally anthropophilic. Associated with decaying trees, litter, decaying vegetables and plants, mowings etc. Season: I–V, X–XII.

Status. Immigrant neotropical species.

Remarks. This species greatly resembles *A. sanctaehelenae* Johnson, but differs in its more apically narrowed elytra which tend to be darker, and by the form of the aedeagus. The latter organ is shaped as in the holarctic *A. grandicollis* (Mannerheim), but that species differs in a number of external characters, including the shape of the pronotum and its side-edge, presence of a distinct metallic lustre to the dorsum, and pronotal sculpture.

Acrotrichis (Ctenopteryx) discoloroides Johnson Fig. 98.

Acrotrichis discoloroides Johnson, 1969, Rev. Zool. Bot. Afr. 79: 227

Length 0.83–0.90 mm. Blackish or brownish-black, elytra sometimes slightly reddish; antennae brown, two basal segments yellowish-brown. Head shining, with scattered points, reticulation indistinct; antennae moderately long, 0.40–0.45 mm, middle segments about three times as long as broad. Pronotum not so ample, breadth 0.51–0.58 mm; sides with two fine and short setae; side-edge (from 45°) feebly curved, almost straight basally, very slightly sinuate at the somewhat drawn out hind angles; surface finely and closely granulate, reticulation well marked. Elytra almost as broad as pronotum (Fig. 98), not or barely narrowed apically; sides with two fine short setae, humeral seta c. 0.034 mm, i.e. as long as width of antennal base. Pygidium with apical tooth distinct.

♂. Unknown, parthenogenetic species.

♀. Spermatheca rudimentary, similar to *A. confusa*.

Material: Mascarenes – *Reunion*: near St. Paul, 26. V. 69, old mango tree, H. F. (1 ex., HF); Ste. Suzanne, Cascade du Niagara, 19. I. 72, sieving rotten vegetables, Y. G. (1 ex., MM). – *Mauritius*: Black River Gorge, 1. I. 75, P. S. (2 ex., MG); Curepipe, 21. XII. 74, P. S. (3 ex., MG).
Seychelles – *Mahé*: Morne Seychellois, 750 m, 13–17. VII. 72, endemic forest, P.L.G.B. & J.J.V.M (1 ex., MRAC).

Wider distribution. Cape Verde Islds., major part of the Afrotropical Region, Madagascar (Johnson, 1969, 1975, 1984); Society, Marquesas and Bismarcks Islds. (Johnson, 1969, 1971); Trinidad, Sri Lanka, New Guinea, Hawaii and Galapagos Islds. (Johnson 1982b).

Bionomics. Tropical, mainly anthropophilic, parthenogenetic species. In decaying wood and vegetables, litter etc. Season: I, V, VII, XII.

Status. Immigrant pantropical species, probably originating from the Afrotropical region where it is one of the commonest and most widespread species.

Acrotrichis (Ctenopteryx) dissona n. sp. Fig. 99.

Length 0.74–0.80 mm. Body rather narrow; sides with outstanding setae. Blackish; antennae brown, two basal segments yellowish-brown. Head shining, with scattered points, reticulation indistinct; antennae moderately long, 0.38–0.45 mm, middle segments nearly three times as long as broad. Pronotum not ample, breadth 0.42–0.48 mm, almost straight at sides in basal half; sides with two setae; side-edge (from 45°) almost straight, not sinuate before hind angles which are

somewhat drawn out; surface finely and closely granulate, reticulate. Elytra as broad as pronotum, not narrowed apically; sides with two rather long setae, humeral seta c. 0.048 mm, i.e. clearly longer than width of antennal base. Pygidium with at least apical tooth distinct.

♂. Aedeagus as in *A. confusa*.

♀. Spermatheca rudimentary, similar to *A. confusa*.

Holotype ♀ (MG): Mascarenes – *Reunion*: Plaine des Chicots, c. 1800 m, 19. IV. 73, sieving old trunks with decomposing toadstools near gîte, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (96 ex., MM); Basse-Vallée, 700 m, endemic forest, 13. I. 75, P. S. (2 ex., MG).

Bionomics. Subtropical to temperate, silvicolous species of the mountains (700–1800 m). In old trees with decaying fungi. Season: I, IV.

Status. Endemic to Reunion.

Remarks. Although the aedeagus of this species appears to be identical with that of *confusa*, the differences in body size and shape including especially the form ot the pronotal side-edge, show them to be distinct. Its other congener, *discoloroides*, may be separated by the characters given in the key.

Acrotrichis (s. str.) africana Johnson Figs 103, 110, 115.

Acrotrichis africana Johnson, 1969, Rev. Zool. Bot. Afr. 79: 229.

Length 0.90–0.94 mm. Body rather broad. Reddish-brown; antennae pale brown, two basal segments yellowish brown. Head shining, with rather close points, reticulation indistinct; antennae somewhat short, 0.42–0.45 mm, middle segments less than three times as long as broad. Pronotum broadest towards base (Figs. 103), breadth 0.58–0.61 mm; surface finely and closely granulate, reticulate; side-edge moderately curved. Elytra as broad or barely narrower than pronotum, sides ± straight, not or only slightly narrowed apically.

♂. Aedeagus: figure 110* (African specimen).

♀. Spermatheca: figure 115.

Material: Mascarenes – *Reunion*: Plaine des Cafres, Notre Dame de la Paix, 1500 m, 31. XII. 70, sieving, Y. G. (4 ex., MM); same locality, 1700 m, 28. XII. 71, sieving under decomposing planks, Y. G. (1 ex., MM); Plaine des Grègues, 650 m, 23. II. 72, sieving under vétyver, Y. G. (1 ex., MM).

Wider distribution. Major part of the Afrotropical Region (Johnson, 1969, 1984). I have also seen it from Madagascar, Hawaii, Tahiti and the West Indies.

Bionomics. Subtropical to temperate, mainly silvicolous and parthenogenetic species of the mountains (650–1700 m). Probably chiefly amongst litter, its prime microhabitat in Africa where it is one of the commonest and most widespread tropical species. Season: II, XII.

Status. Immigrant pantropical species, originating from the Afrotropical region.

Remarks. All the Mascarene specimens, like many of the African ones, are females, and it is probable that males do not occur in these islands.

Acrotrichis (s. str.) bidentata n. sp. Figs 105–107, 111, 112.

Length 0.72–0.78 mm. Body moderately broad. Blackish; antennae pale brown, two basal segments yellowish. Head shining, with minute points, reticulation indistinct; antennae long, 0.40–0.43 mm, middle segments about four times as long as broad. Pronotum broadest behind middle (Fig. 105), breadth 0.43–0.48 mm; sides rounded; side-edge rather weakly curved; surface somewhat finely and closely granulate, reticulate. Elytra as broad as pronotum, sides slightly curved.

♂. Clypeus protruding, upturned apically (Fig. 105); front tibiae slightly widened; front femora with dense silvery pubescence below; ventrite 6 with a pair of large triangular teeth directed ventrally, on disc (Fig. 107), apical half of ventrite depressed, apical emargination weak; aedeagus: figures 111*–112*, considerably compressed.

♀. Spermatheca: figure 117*.

Holotype ♂ (MG): Mascarenes – *Reunion*: Plaine d'Affouches, 800–900 m, sieving by forest track, 19. x. 69, Y. G.

Paratypes: Mascarenes – *Reunion*: same data as holotype (24 ex., MM); same locality, 1200 m, 1. xii. 71, sieving stump and humus by gîte, Y. G. (13 ex., MM); Col de Bebourg, 1400 m, 25. v. 69, sieving in mountain forest, H. F. (60 ex., HF); Plaine des Palmistes, Petite Plaine, 1200 m, 25. v. 69, rotten wood in forest, H. F. (10 ex., HF), rotten trunk, Y. G. (1 ex., MM); near Cilaos, 1300 m, 27. v. 69, sieving in mountain forest, H. F. (4 ex., HF); near Makes, 1400 m, 30. v. 69, sieving in forest, H. F. (1 ex., HF); road to Takamaka, 400 m, 10. i. 69, under bark, Y. G. (1 ex., MM); Takamaka, 700 m, 26. i. 72, sieving very humid trunks along track from dam, Y. G. (2 ex., MM); Takamaka, 500 m, 14. xi. 71, sieving trunks and earth under Jamerosiers, Y. G. (9 ex., MM); Bebour, 1400 m, 22. iv. 72, sieving humus in forest by gîte, Y. G. (6 ex. , MM); Bélouve, 1400 m, 22. iv. 72, sieving under bark and moss

along forested track, Y. G. (20 ex., MM); Bras Panon, Bassin de la Paix, 31. i. 72, sieving dead leaves, Y. G. (1 ex., MM); Plaine des Chicots, 1800 m, 19. iv. 73, sieving old tree trunks with decomposing toadstools near gîte, Y. G. (4 ex., MM); same locality, c. 1800 m, sieving under calumets with stump and toadstools below gîte, Y. G. (5 ex., MM); heights of St. Denis, Morne des Patates à Durand, 1120 m, 2. xii. 71, sieving soil and stump, Y. G. (15 ex., MM); Grande Chaloupe, 430–590 m, 11. i. 75, primitive endemic forest, P. S. (3 ex., MG); Basse-Vallée, 700 m, 13. i. 73, endemic forest, P. S. (12 ex., MG). – *Mauritius*: Forêt des Macchabées, 700 m, 26. xii. 74, P. S. (1 ex., MG); Mare aux Vacoas. 500 m, 10. i. 71, sieving Pinus, Y. G. (1 ex., MM).

Bionomics. Subtropical to temperate, silvicolous species of the mountains (400–1800 m), very rarely in the tropical zone. In decaying trees; also amongst dead stumps/humus, and in litter. Season: I, IV, V, X–XII.

Status. Endemic to Reunion and Mauritius.

Remarks. The male secondary sexual characters of this species are highly abberrant and unique.

Acrotrichis (s. str.) blandula n. sp. Figs 108, 113.

Length 0.62–0.64 mm. Head and pronotum pale brown, elytra slightly darker; antennae yellowish-brown, two basal segments paler and brighter. Head shining, with scattered fine points, reticulation fine; antennae long, 0.38 mm, middle segments about four times as long as broad. Pronotum broadest behind middle, breadth 0.36–0.37 mm; sides rounded; side-edge almost moderately curved; surface with distinct reticulation, meshes irregular, granulation not apparent. Elytra as broad as pronotum, sides slightly curved. Pygidium with apex truncate, lateral teeth prominent.

♂. Front femora with circular patch of dense and long silvery pubescence in apical half close to coxae, below; ventrite 6 with front margin excavated in middle (only apparent on dissection), apical excavation preceded by smooth and semicircular zone (Fig. 108); aedeagus: figure 113*.

♀. Unknown.

Holotype ♂ (MG): Mascarenes – *Mauritius*: Macabe Forest, 600–700 m, 19. I. 71, sieving trunks, Y. G.

Paratype: Mascarenes – *Mauritius*, same data as holotype (1 ♂, MM).

Bionomics. Tropical, silvicolous species of the mountains (600–700 m). In decaying trees. Season: I.

Status. Endemic to Mauritius.

Remarks. Similar to *bidentata* in shape, but very distinct in all other features.

Acrotrichis (s. str.) britteni Johnson Figs 104, 118.

Acrotrichis britteni Johnson, 1969, Rev. Zool. Bot. Afr. 79: 235.
Acrotrichis ovatula; Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 91 (misidentification: not Motschulsky, 1868).

Length 0.59–0.62 mm. Body narrow. Reddish-brown to brownish-black; antennae yellowish-brown, two basal segments pale and bright. Head broad, somewhat dull, coarsely and closely granulate, reticulate; antennae short, 0.29–0.30 mm, middle segments upto two and a half times as long as broad. Pronotum subparallel in basal half (Fig. 104), breadth 0.34–0.35 mm; side-edge weakly curved, almost straight basally; surface coarsely and rather closely granulate, reticulate. Elytra about as broad as pronotum, sides slightly curved.

♂. Unknown.

♀. Spermatheca: figure 118*.

Material: Mascarenes – *Reunion*: near St. Paul, 26. V. 69, old mango tree, H. F. (1 ex., HF); St. Philippe, Baril, 15. II. 71, sieving, Y. G. (5 ex., MM); Bras Panon, Bassin de la Paix, 31. I. 71, sieving dead leaves, Y. G. (3 ex., MM); Plaine des Grègues, 650 m, 23. II. 72, sieving under vétyver, Y. G. (3 ex., MM); St. Paul, 100 m, sieving litter under Inga dulcis on steppe, 17. I. 73, Y. G. (1 ex., MM). – *Mauritius*: Carreau Esnouf, 17. VII. 70, sieving, C. M. C. (2 ex., MM).
Seychelles – *Mahé*: Cascade Estate, 800'+, 1908/09, P. S. T. E. (holotype ♀, BMNH); same locality but 1000', -II. 1909, swept from fern on cultivated land near edge of forest, P. S. T. E. (1 ex., not located).

Wider distribution. Only known originally from the Seychelles holotype. However, I have since seen many additional specimens from various parts of tropical Asia.

Bionomics. Tropical, mainly anthrophophilic and parthenogenetic species. Amongst dead leaves, litter, dead wood etc. Season: I, II, VII.

Status. Immigrant oriental species.

Remarks. The discovery of additional material has permitted an amplification of the original description. All the Seychelles and Mascarene specimens are females. I have only seen possible males from the West Bengal area of India, but that fauna needs detailed study before this can be verified.

Acrotrichis (Flachiana) cursitans (Nietner) Figs 102, 109, 114, 116.

Trichopteryx cursitans Nietner, 1856, Journ. Asiatic Soc. Bengal 25: 527. – Nietner1857, Ann. Mag. Nat. Hist. (1856) 19: 378.
Acrotrichis brunnea Britten, 1926b, Trans. Linn. Soc. Lond., Zool. 19: 91.
Acrotrichis cursitans; Johnson, 1969, Rev. Zool. Bot. Afr. 79: 250.

Length 0.80–0.91 mm. Body moderately broad. Dark brown; antennae similar, two basal segments slightly paler. Head with close points, reticulation indistinct; antennae short, 0.34–0.37 mm, middle segments twice as long as broad. Pronotum strongly domed, broadest close to base (Fig. 102), breadth 0.51–0.56 mm; side-edge very weakly curved, often rather straight basally; surface finely and rather closely granulate, reticulation strong, weak metallic lustre occasionally present. Elytra narrower than pronotum, strongly narrowed apically.

Ventrite 6 with apical emargination shallow, bearing a basal fold and an extensive fringe of short coarse setae in apical region (Fig. 109); aedeagus with parameres (Fig. 114*).

Spermatheca: figure 116.

Material: Mascarenes – *Reunion*: St. Paul, Bernice, 26. III. 66, from rotten trunk, Y. G. (1 ex., MM); Ste. Suzanne, Cascade du Niagara, 19. I. 72, sieving rotting vegetables, Y. G. (2 ex., MM); St. André, 29. XII. 71, sieving under rotting fruit, Y. G. (2 ex., MM); heights of St. Paul, La Petite France, 1100 m, 29. X. 72, sieving debris from perfume plants, Y. G. (29 ex., MM); Plaine des Grègues, 650 m, 23. II. 72, sieving under vétyver, Y. G. (30 ex., MM); Plaine des Chicots, c. 1800 m, 19. IV. 73, sieving old trunks with decomposing toadstools near the gîte, Y. G. (9 ex., MM). – *Mauritius*: Souillac, 17. I. 70, under seaweed on Gris-Gris Beach, Y. G. (2 ex., MM). Seychelles – *Mahé*: near Morne Blanc, c. 800′, -X. -XI. 1908, P. S. T. E. (1 ex.); Cascade Estate, -III. 1909, P. S. T. E. (3 ex.); same locality and data but swept from fern in cultivated land near edge of forest, P. S. T. E. (4 ex.; studied: 2 ex., MM); Morne Blanc, 667 m, 8–25. VIII. 72, endemic forest, P. L. G. B. & J. J. V. M. (1 ex., MRAC). – *Silhouette*: near Mont Pot-à-Eau, c. 1500′, -VIII. 1908, forest, P. S. T. E. (3 ex.); Mare aux Cochons, c. 1200′, -IX. 1908, plateau or nearby forest, P. S. T. E. (1 ex.).

Wider distribution. Sri Lanka, Madagascar, South Africa, Ivory Coast, Nigeria (Johnson, 1969, 1984); Philippine Islds. (Johnson, 1971).

Bionomics. Tropical to temperate, mainly anthropophilic species, but also occurring in natural microhabitats in the silvicolous zones. In diverse microhabitats, including decaying trees and litter, decaying plant and vegetable debris. Season: I–IV, X, XII.

Status. Immigrant palaeotropical species.

Genus **Chirostirca** n. gen.

Type species: Chirostirca gomyi n. sp.

Body elongate, rather broad, little convex (Fig. 119); punctate; pubescent. Head moderately broad, not margined at sides; eyes present. Antennae 11-segmented

Pronotum broader than long; sides curved, margins with a broad and upturned border; front margin almost straight; hind margin sinuate laterally; hind angles produced rearwards.

Elytra ± quadrate, subtruncate apically, exposing upto four abdominal segments behind; humeri not toothed; epipleura not developed, carina indistinct. Scutellum large, triangular. Wings as in most Ptiliids.

Prosternum rather narrow in front of procoxae, about a third of a coxal diameter in width; front margin straight; procoxae contiguous; pleura concave.

Mesosternum (Fig. 120) short; front angles toothed; hind angles obtuse, at body sides; hind margin straight, strongly oblique; disc with a short longitudinal carina behind; mesocoxae almost contiguous; collar strongly developed, delineated and sinuate behind, extending across pleura, side arms bent.

Metasternum (Fig. 120) about as long as mesosternum; episterna not developed; hind margin toothed mesad of coxae; metacoxae rather widely separated by about a half of the metasternal width; coxal plates moderately large.

Ventrite 1 without femoral lines. Pygidium large and triangular, composed of tergites 9 and 10 completely fused together, apex lacking distinct teeth (Fig. 121). Male unknown. Female with well-developed spermatheca.

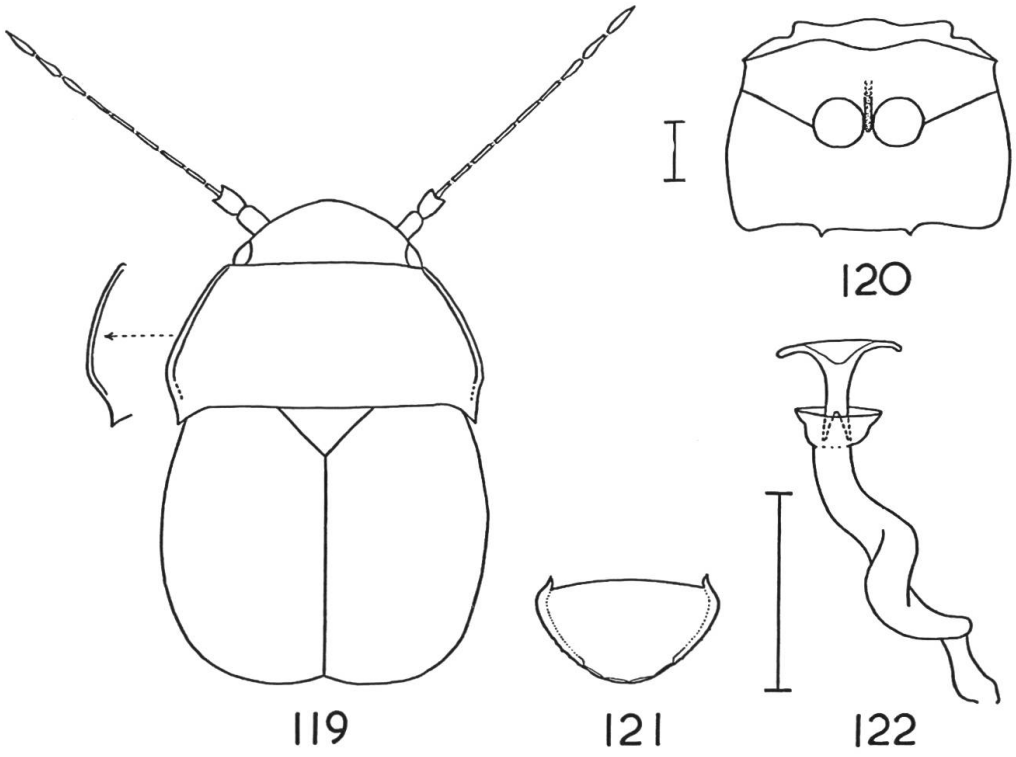
Systematic position. The short elytra, pygidial structure, form of the sterna and pronotum show this genus to be closely allied to *Acrotrichis*. It differs from that genus as follows: pronotal side border broad and upturned; sculpture punctate, not granulate; hind margin of mesosternum strongly oblique; metacoxal separation wider, coxal plates smaller.

Derivation. An anagram of the allied genus *Acrotrichis*.

Distribution. Palaeotropical. Undescribed species are known to me from East Africa and south east Asia.

Chirostirca gomyi n. sp. Figs 119–122.

Length 0.80–0.85 mm. Body rather broad and somewhat convex; very shining; dorsum sparsely covered with pale, recumbent pubescence. Black, head and hind margin of pronotum with a reddish tint; antennae pale brown, two basal segments reddish-brown. Head smooth and shining, without obvious microsculpture; antennae very long, 0.51–0.54 mm, middle segments about five times as long as broad.



Figs 119–122: *Chirostirca gomyi* n. sp.: 119, dorsum, including pronotal side-edge obliquely from side. 120, mesosternum and metasternum. 121, pygidium, female. 122, spermatheca.

Pronotum broadest a little behind middle where sides are subangulate (Fig. 119), thence narrowed to the acute hind angles; breadth 0.48–0.51 mm; surface very shining, microsculpture indistinct; pubescence sparse, arising from minute points, hairs c. 0.025 mm long, separated by nearly twice their length from their adjacent hairs. Elytra barely broader than pronotum, breadth 0.51–0.54 mm, broadest a little behind middle, sides rounded; surface coarsely, deeply punctate, less so apically; pubescence as long or very slightly longer than on pronotum, hairs about a length apart; scutellum coarsely punctured, puncturation

similar to that on elytra, with 12–20 punctures. Mesosternum strongly reticulate; metasternum rather coarsely punctate, reticulation strong, surface uneven.

♂. Unknown.

♀. Spermatheca: figure 122*.

Holotype ♀ (MG): Mascarenes – *Mauritius*: Mt. Cocotte, 600–700 m, 19. I. 70, sieving humus, Y. G.

Paratypes. Mascarenes – *Mauritius*: same data as holotype (2 ♀, MM).

Bionomics. Tropical, silvicolous species of the mountains (600–700 m). Probably associated with decaying stumps or forest litter. Season: I.

Status. Endemic to Mauritius.

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