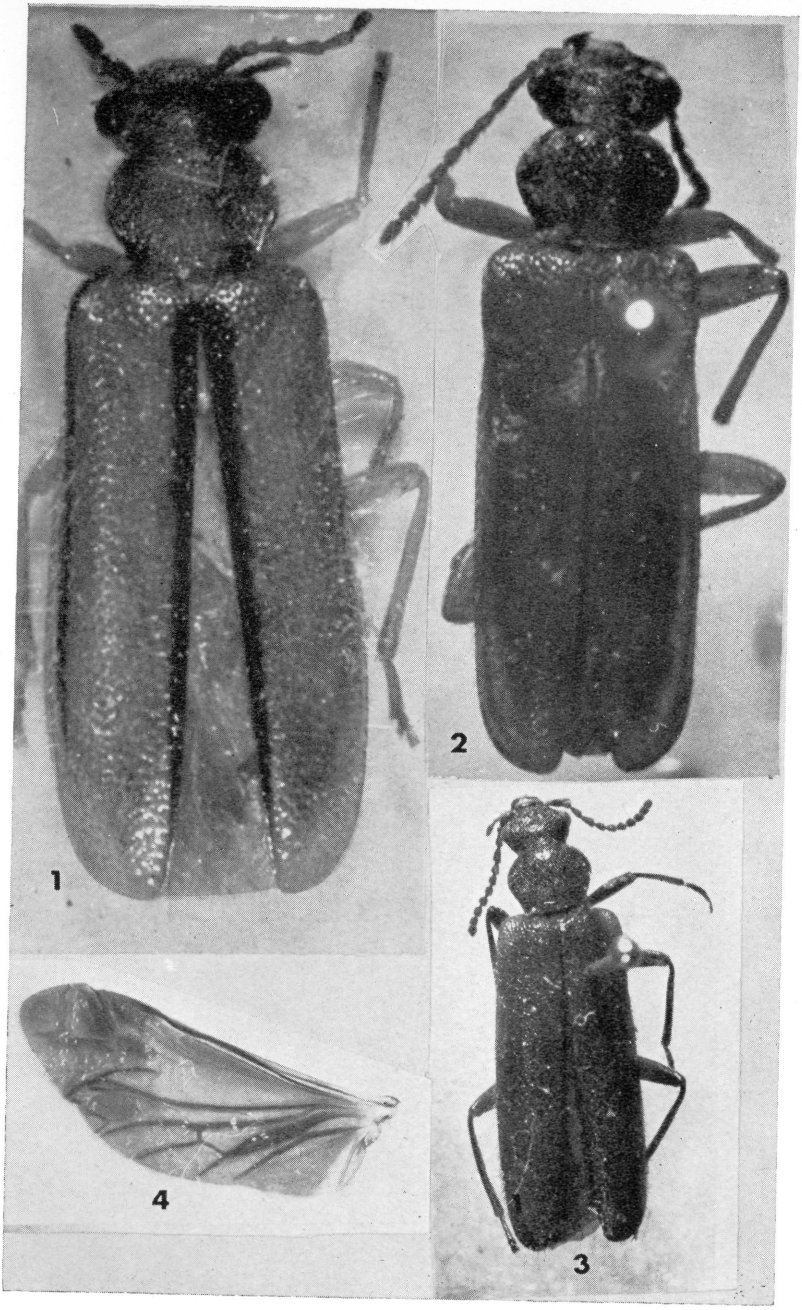

MADAGASCAN PYROCHROIDAE

Figs. 1–4.—1, *Incollogenius lineatus* Pic, lectotype, ♂; 2, *I. testaceipennis*, Pic, holotype, ♂; 3, *I. humeralis* Pic, holotype, ♀; 4, *I. humeralis* Pic, holotype, hind wing. (Photographs not to scale.)

A REVISION OF THE MADAGASCAN GENUS *INCOLLOGENIUS* PIC, WITH REMARKS ON THE PRIMITIVE AND ADVANCED CHARACTERS OF THE FAMILY PYROCHROIDAE (COLEOPTERA)*

BY MOHAMMAD ABDULLAH

The Madagascan *Incollogenius* was regarded as a genus of Pedilid beetles by earlier coleopterists. After examining the types of the three known species of *Incollogenius* Pic, I transfer it from Pedilinae (Anthicidae) to the family Pyrochroidae as defined by me so as to include forms with simple as well as appendiculate tarsal claws (Abdullah, 1965). The genera of Pyrochroidae with appendiculate tarsal claws are: *Exocalopus* Broun (New Zealand), *Incollogenius* Pic (Madagascar), *Palaeopyrochroa* Abdullah (Baltic amber), *Pilipalpus* Fairmaire (Chile) and *Techmessa* Bates (New Zealand). *Incollogenius* resembles *Exocalopus*, *Pilipalpus*, *Techmessa* and *Techmessodes* Broun (New Zealand) in the shape of the head which is rather transverse across the eyes; it further resembles the New Zealand genera in having the two penultimate tarsal segments lobed below.

On the whole, *Incollogenius* is a very primitive genus of Pyrochroidae —perhaps the most primitive one known so far. After considering the above-mentioned primitive genera as well as the derivative genera (*e.g. Pyrochroa* Geoffroy, and allies), I have presented my conclusions on the primitive and advanced characters of the family Pyrochroidae in Table I.

Table 1.—The primitive and advanced characters of the family Pyrochroidae.

Primitive Characters	Advanced Characters
Eyes entire, small, widely separated above	Eyes emarginate, large, approximate or not widely separated above.
Antennae filiform or moniliform, eleven-segmented.	Antennae serrate, subpectinate or plumose, twelve-segmented.
Head transverse across eyes; gula wide.	Head not transverse across eyes; gula narrow.
Prothorax without side borders.	Prothorax with side borders.
Two penultimate tarsal segments lobed below	One penultimate tarsal segment lobed below.
Tarsal claws appendiculate.	Tarsal claws simple.
Wing with closed radial and anal cells.	Wing without radial and anal cells.
Metendosternite (fig. 1) with the anterior tendons arising on the arms, much above its junction with the laminae; laminae (comparatively) reduced.	Metendosternite with the anterior tendons just on the arms, near its junction with the laminae; laminae well-developed (as in *Pyrochroa*).
Parameres separate at apices (figs. 5, 11).	Parameres fused.

In view of the facts that in such Anthicid genera as *Pedilus* Fischer and *Steropes* Steven the front coxal cavities are open externally as well as internally, the metendosternite has a slender stalk (in *Steropes*) with the

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anterior tendons arising on the arms, the tarsal claws are appendiculate, radial and anal cells are present in the wing, the parameres are separate apically and the styli are borne on the second segment of the coxites in the ovipositor, I am inclined to believe that the families Pyrochroidae and Anthicidae are closely related and that the latter may have evolved from Pyrochroid ancestors. Crowson, on the basis of certain similarities of larval characters, considers it possible that *Hemipeplus* may be related to both Pyrochroidae and Cucujidae; he also thinks that the genus *Pytho* Latreille (Pythidae) has affinities to *Pyrochroa* (Crowson, 1955). The larvae of Pyrochroidae and Pythidae are very similar, and the larvae of *Techmessa* and *Techmessodes* are more *Pytho*-like than is that of *Pyrochroa* (Crowson, *in litt.*). In the imaginal characters, all Pythidae (*sensu* Crowson) could be separated from Pyrochroidae (*sensu mihi*) by the prosternum which is long in front of the procoxae and by the tarsal segments which are not lobed in the former. But the adults of the primitive genera of Pyrochroidae and the primitive genera of Anthicidae (*e.g. Pedilus* and *Steropes*) could be less easily separated. As far as the adults are concerned, the differences between Pythidae and Pyrochroidae might be regarded as adaptions to different modes of life, the Pyrochroids being mainly floricolous while Pythids normally occur on decayed trees, fungi etc.; the similarities can hardly be considered as convergent in the usual sense, given that the adult habits are usually different in the two families (Crowson, *in litt.*). The Pyrochroidae themselves seem to have evolved from a common ancestor with Pythidae. It appears that the family Pyrochroidae has real affinities to both the families Anthicidae and Pythidae as has the family Anthicidae to Pyrochroidae and Meloidae, or the family Meloidae has to Anthicidae and Cephaloidae.

Genus *Incollogenius* Pic

Incollogenius Pic, 1916: 17–18.

Vestiture: sparse. *Punctures:* coarse on head, pronotum and elytra.

Head wider than long or nearly equal in length and width; widest across eyes, width here nearly same as or slightly less than that of pronotum at its widest part; constricted behind eyes, forming a wide neck. Tempora reduced. Clypeolabral sulcus distinct. Mandible with incisor lobe bifid, prostheca reduced. Apical (=fourth) segment of maxillary palp dilated, triangular-elongated, weakly securiform to subcultriform. Apical (=third) segment of labial palp slightly thickened. Gula wide. Eyes lateral, convex, entire, small, widely separated above, finely-faceted. Antennae filiform to weakly moniliform, apical (=eleventh) segment twice or less as long as tenth segment.

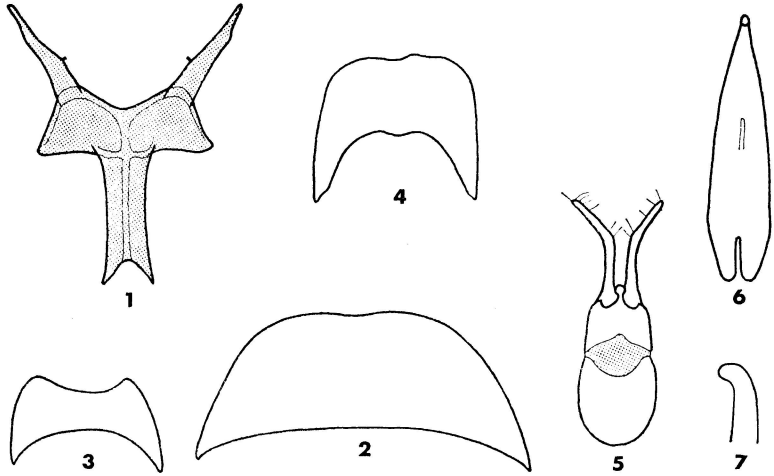
Thorax. Pronotum wider than long, widest subapically just above middle; not constricted at apex; weakly margined at base; narrower than elytra at base. Wing with closed radial and anal cells; fourth anal vein present. Metendosternite (fig. 1) with anterior tendons arising on arms, much above its junction with laminae; laminae (compared with *Pyrochroa*) reduced. Hind coxae not contiguous. Tibial spurs short. Two penultimate tarsal segments lobed below; tarsal claws appendiculate.

Abdomen. Seventh (=fifth visible) sternite emarginate in male (figs. 2, 8) and entire in female (fig. 12). In male, aedeagus with tegmen and median lobe lateral in orientation; parameres separate at apices (figs, 5, 11); median lobe narrowed and weakly hooked at apex (fig. 7), median struts short (fig. 6). In female, styli borne on second segments of coxites (fig. 14).

Type of genus: *I. testaceipennis* Pic.

KEY TO THE SPECIES OF *Incollogenius* PIC

1. Elytra black, rufous along humeral margin; (also figs. 12–14) *I. humeralis* Pic
— Elytra brown or with black stripes 2
2. Elytra brown; seventh and eighth sternites more deeply emarginate (figs. 8, 9); parameres nearly parallel (fig. 11) ..... *I. testaceipennis* Pic
— Elytra brown with black stripes along sutural margins and near lateral margins; seventh and eighth sternites less deeply emarginate (figs. 2, 3); parameres widely separate at apices (fig. 5) ..... *I. lineatus* Pic



Figs. 1–7.—*Incollogenius lineatus* Pic, hololectotype, ♂: 1, metendosternite; 2, seventh abdominal sternite; 3, eighth sternite; 4, eighth tergite; 5, tegmen, ventral view; 6, median lobe, ventral view; 7, apex of median lobe, lateral view.

Incollogenius lineatus Pic (Pl. 3, fig. 1; text-figs. 1–7)

Incollogenius lineatus Pic, 1953: 263.

Lectotype. Male (author's no. 658), MADAGASCAR, 'Mt. Tsaratanana, 1,500 m., forêt de mousses', in the Muséum National d'Histoire Naturelle, Paris (*ex coll.* Pic).

Colour: brown; each elytron with a black stripe along sutural margin and one near lateral margin; head dark brown. *Vestiture:* light brown to yellow hairs, generally short and decumbent, longer erect to suberect hairs present along tempora and margins of pronotum and elytra.

Head wider than long, nearly as wide as pronotum at its widest part. Apical segment of maxillary palp subcultriform. Antennal segments I–IV filiform, rest missing.

Abdomen. Seventh sternite emarginate at apex (fig. 2). Seventh tergite entire at apex. Eighth sternite emarginate at apex (fig. 3). Eighth tergite with apex irregular (fig. 4), in other members of population probably broadly, weakly emarginate. Parameres widely separate at apices, shape and arrangement of hairs as in fig. 5. Median lobe as in fig. 6.

Total length 5.5 mm.; maximum width 1.5 mm.

Remarks. I have not examined the other cotype of Pic. The paralectotype is supposed to be in the Muséum National d'Histoire Naturelle, Paris.

Incollogenius testaceipennis Pic (Pl. 3, fig. 2; text-figs. 8–11)

Incollogenius testaceipennis Pic, 1916: 18; Pic, 1917: 10.

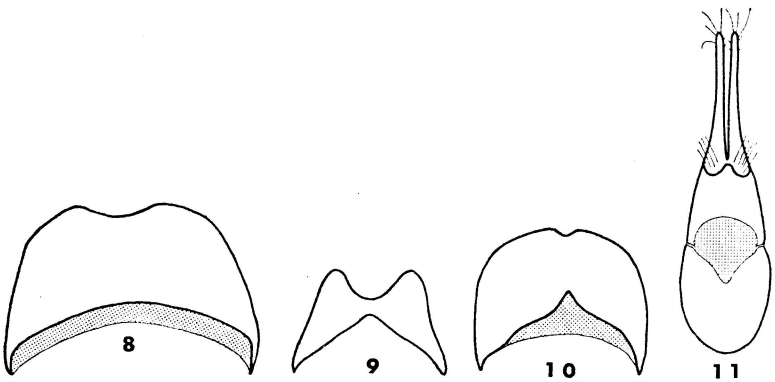
Holotype. Male (author's no. 659), MADAGASCAR, '? Tananarive', in the Muséum National d'Histoire Naturelle, Paris (*ex coll.* Pic).

Colour: head and pronotum black, abdominal sternites piceous, rest brown. *Vestiture:* as in *I. lineatus* but flying hairs absent along tempora and pronotum.

Head nearly as long as wide, very slightly narrower than pronotum at its widest part. Apical segment of maxillary palp dilated. Antennal segments I–VI filiform, VII–XI weakly moniliform.

Abdomen. Seventh sternite deeply emarginate at apex (fig. 8). Seventh tergite entire at apex. Eighth sternite deeply emarginate at apex (fig. 9). Eighth tergite weakly, narrowly emarginate at apex (fig. 10). Parameres nearly parallel, shape and arrangement of hairs as in fig. 11. Median lobe as in *I. lineatus* but longer and wider at apex.

Total length 6.5 mm.; maximum width 1.65 mm.



Figs. 8–11.—*Incollogenius testaceipennis* Pic, holotype, ♂: 8, seventh abdominal sternite; 9, eighth sternite; 10, eighth tergite; 11, tegmen, ventral view.

Incollogenius humeralis Pic (Pl. 3, figs. 3–4; text-figs. 12–14)

Incollogenius humeralis Pic. 1917: 10.

Holotype. Female (author's no. 660), MADAGASCAR, Tananarive, in the Muséum National d'Histoire Naturelle, Paris (*ex coll.* Pic).

Colour: black; labrum, clypeus (portion) and humeral angles of elytra rufous to brown. *Vestiture:* hairs black, as in *I. lineatus* but sparser.

Head nearly as long as wide, distinctly narrower than pronotum at its widest part. Apical segment of maxillary palp weakly securiform. Antennal segments I–IV filiform, V–IX moniliform.

Abdomen. Seventh sternite entire at apex (fig. 12). Seventh tergite entire at apex (fig. 13). Apex of ovipositor as in fig. 14.

Total length 9 mm.; maximum width 3 mm.

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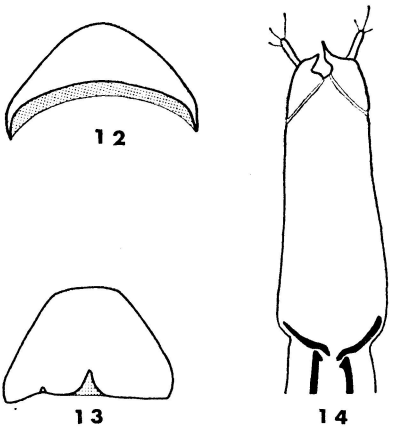
I wish to express my thanks to the following: Dr. Guy Colas of the Paris Museum for the specimens; Dr. M. Ian Crichton and Prof. Alastair Graham of this Department, and Dr. Roy A. Crowson of the University of Glasgow for their kind interest in my work; and the Research Board of the University of Reading for a Postgraduate Studentship award.



Figs. 12–14.—*Incollogenius humeralis* Pic, holotype, ♀: 12, seventh abdominal sternite; 13, seventh tergite; 14, apex of ovipositor, ventral view (surface densely hairy—not shown).

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Further spread of Lathridius bifasciatus Reitter (*Col., Lathridiidae*).—In 1961 (*Ent. mon. Mag.*, **97**: 210) I summarised the spread of this Australian immigrant since it was first observed in Surrey, in 1950. At the same time Crowson & Crowson (*idem,* 230) noted its occurrence in the open on the bank of Duddingston Loch, though it had been taken indoors in nearby Edinburgh some years previously. This year I have encountered it frequently, and am able to add two vice-counties to its recorded range, viz. Buckinghamshire (V.C. 24): Littleworth Common, 12.viii.64, single examples on *Cirsium vulgare* (Savi) Ten., and *Galeopsis tetrahit* agg., and Hampshire, South (V.C. 11): beside the Beaulieu River, near Beaulieu, 15.xi.64 in an old moorhen's nest, 22 examples, and by sweeping reeds, 4 examples. The species undoubtedly prefers damp localities.—A. M. EASTON, 173 Lower Road, Great Bookham: *February* 19*th*, 1965.