Studies of the genus *Anthelephila* (Coleoptera: Anthicidae)

13. The species described by W. W. Saunders from India

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Introduction

In dealing with the habits of some Indian insects, Saunders (1834) described two anthicids, *Anthelephila mutillaria* Saunders, 1834 and *A. ruficollis* Saunders, 1834. Both species were described from an unstated number of specimens collected in April on the banks of the Hooghly River, a few miles south of Calcutta, and Saunders (1834) mentioned that they were ‘running about the roots of grass among sand in abundance.’

Both *Anthelephila mutillaria* and *A. ruficollis* are conspicuous solitary species, inhabiting predominantly lowland habitats near rivers. They appear to be rather widespread and clearly variable in some external characters (colouration, shape of head, punctuation). For each of these species I have failed to find any substantial intraspecific variation in male characters, even in specimens from far distant localities.

In the present paper, *Anthelephila mutillaria* and *A. ruficollis* are redescribed, and seven taxa are placed as junior synonyms, including the rather enigmatic *Formicomus uncinatus* Desbrochers, 1875 from Syria.
Material and methods

Specimens were examined with a Leica MZ 9.5 stereomicroscope; morphological measurements were taken with an ocular graticule. Male genitalia were examined after being cleared in a hot 10% KOH solution. Photographs were taken with a Nikon Coolpix 4500 digital camera attached to a Leica MZ 9.5 trinocular microscope; images of the same specimen at different focal planes were combined with Helicon Focus 5.2 Pro and edited with Adobe Photoshop 9.0.2. software.

As there are no doubts about the identity of both redescribed species, their redescriptions are based on additional male specimens originating from regions close to the type localities, and compared with the type specimens.

Exact label data are quoted for the type specimens only. Separate labels are indicated by a double slash (/). Author’s comments on the type material are found in square brackets. The following abbreviations are used in the text: [p] – printed; [h] – handwritten; env. – environs of; rec. – record from; lgt. – collected by; coll. – collection.

The following acronyms of collections are used (in round brackets):

- BMNH The Natural History Museum, London, United Kingdom
- MNHN Museum National d'Histoire Naturelle, Paris, France
- NHMB Naturhistorisches Museum, Basel, Switzerland
- NKME Naturkundemuseum Erfurt, Erfurt, Germany
- NMPC National Museum, Prague, Czech Republic
- OXUM Hope Entomological Collections, Oxford, United Kingdom
- DCDC Donald S. Chandler collection, Durham, New Hampshire, U.S.A.
- ZKDC Zbyněk Kejval collection, Domažlice, Czech Republic
- ZSMC Zoologische Staatssammlung München, Germany

Systematics

**Anthelephila mutillaria** Saunders, 1834
(Figs 1–7, 14–16)

*Anthelephila mutillaria* Saunders, 1834: 66, Pl. 7, Fig. 9: CHANDLER et al. (2008): 423 (catalogue, distribution).

*Formicomus mutillarius*: LAFERTÉ-SÉNECTÈRE (1849b): 3 (redescription, rec. Myanmar); PIC (1907): 339 (rec. Myanmar);

*Formicomus mutillarius* var. *tonkineus* Pic, 1899a: 105, *syn. nov.*


*Hirticomus fascifer* Uhmann, 1983: 200, Fig. 33, *syn. nov.*


**Formicomus mutillarius var. tonkineus:** SYNTYPE: ♀, bearing red, printed ‘TYPE’ label (coll. Pic, MNHN).


**Redescription** (male, Kottipale, ZKDC). Body length 5.2 mm. Head black, pronotum dark reddish to red, elytra largely black with reddish basal third; legs black, basal portion of femora reddish, antennae black, basal antennomeres with reddish tinge.

Head 1.1 times as long as wide, including eyes; base rather widely rounded, its outline moderately convex medially in dorsal view, tempora moderately narrowing posteriorly, posterior temporal angles rounded but distinct. Eyes medium-sized, strongly convex. Surface distinctly and rather evenly punctured dorsally; punctures conspicuously large, shallow, mostly rounded and narrowly spaced, at places (postero-laterally) contiguous, angular and forming cell-like sculpture. Setation conspicuous, with shorter, suberect and numerous longer erect bristly setae. Antennae moderately long, at most slightly enlarged in distal third; antennomere X 2.1 times, XI 2.9 times as long as wide.

Pronotum robust, 1.3 times as long as wide, moderately narrower than head including eyes, somewhat unevenly rounded anteriorly, only moderately impressed laterally in posterior half; prontal disc even shaped, its outline rather evenly convex in lateral view. Surface very distinctly punctate, including lateral sides (finer and sparser only near procoxal cavities); punctures on prontal disc somewhat smaller and mostly distinctly sparser than those on head, somewhat unevenly spaced; latero-basal impressions unwrinkled. Setation as on head, with numerous long bristly tactile setae.

Mesoventrite with moderately convex, laterally sharply delimited median bulge; metasternite simple.

Elytra 1.8 times as long as wide, conjointly rounded apically; humeri moderately protruding, omoplates and postbasal impression slightly indicated. Surface distinctly punctate; basal half punctures much smaller and largely sparser than those of head and prontal disc,
dot-like, somewhat unevenly spaced, slightly sparser in basal third, with 2–3 small paired patches of dense punctures near borderline of reddish basal and black middle third. Setation conspicuous, dense and coarse, mostly suberect, with numerous longer erect setae; setae mostly dark coloured, blackish, with contrasting whitish setae scattered latero-basally, especially on humeri, and forming two transverse bands, anterior band narrow and somewhat uneven (nearly subdecumbent setae originating from patches of dense punctures), posterior band much wider and sparser, situated in apical third.

Legs rather robust, conspicuously setose, with numerous long erect setae (especially on tibiae); profemora nearly simple, with slight edge on inner side; protibiae enlarged at mid-length and with smooth, moderately projecting lobe in distal half (Fig. 1); penultimate tarsomere widened / flattened distally, with terminal tarsomere dorsally articulated in all tarsi.

Abdominal characters as in Figs 2–7; sternum VIII shallowly impressed medially, its median process simple, curved, projecting from dorsal side close before margin of sternum; tergum VII with conspicuous apical notch; prongs of sternite VIII somewhat laterally flattened, each with two lobes dorsally near base, small ventral process, and two lobules on inner side of apical widened portion, margins of prongs medially with dense short, stiff setation; paired sclerites of tergite VIII with narrow median connection; aedeagus with apical portion of tegmen 0.4 times as long as basal piece.

Variation. Body length 3.7–5.2 mm. Most specimens from Nepal, Vietnam and Yunnan with both, basal and apical, thirds of the elytra reddish (typical form, Fig. 14); most specimens from Myanmar and Thailand (Soppong) with elytra largely or entirely black (Fig. 15); a specimen from Yunnan generally dark coloured, including brown black pronotum (Fig. 16). Base of the head in specimens from the Southeast Asia nearly evenly rounded, with indistinct posterior temporal angles and eyes somewhat less convex. The ventral process of prongs in males always well-developed, but less protruding in the specimen from Vietnam.

Female sternum VII simple, moderately produced postero-medially and rounded apically; female tergum VII nearly triangular, rounded apically.

Differential diagnosis. *Anthelephila mutillaria* is a very conspicuous, robust species, which can be easily recognized by the following combination of external characters: head and pronotum very coarsely punctate, body setation conspicuous, long and erect (including legs), elytra with setose bands. It differs clearly from all Oriental species in the morphology of male sternite VIII.

Distribution. Bangladesh, China (Yunnan), India (Andhra Pradesh, Assam, Orissa, Uttarakhand, West Bengal), Laos, Myanmar, Nepal, Pakistan, Thailand, Vietnam. New species to Pakistan.

Remarks. *Anthelephila mutillaria* varies considerably in colouration and thus Pic (1899a, 1913a) described: var. *tonkineus* from northern Vietnam (body entirely dark, including pronotum), var. *inapicalis* from Myanmar (elytra black, with reddish basal third / fourth, pronotum reddish), and var. *innotatipennis* from Myanmar (elytra entirely black, pronotum reddish). In the case of the variety *inapicalis*, Pic (1899a) just named ‘var. β’ of *Formicomus mutillarius* that had been described by Laferté (1849b). Its type material is thus of the same origin as that of var. *innotatipennis* – probably southern Myanmar, Tanintharyi Region (formerly Tenasserim), from the collection of J. V. Helfer.
Figs 1–7. Anthelephila mutillaria Saunders, 1834 (Kottipale, male): 1 – profemur and protibia; 2 – sternum VII; 3 – tergum VII; 4 – sternite VIII (half) in dorsal view; 5 – prong of sternite VIII in lateral view; 6 – tergite VIII; 7 – apical portion of aedeagus. Scales (0.5 mm): A – Fig. 2; B – Figs 4, 5; C – Figs 1, 6; D – Fig. 3; E – Fig. 7.
Although darker specimens of _A. mutillaria_ are known only from the southern part of its range, they do not seem to be confined to any particular geographical region and may occur together with typically coloured specimens (series from Sopppong and Yuanxian). The newly proposed synonymy is based mainly on the examination of male characters that were found rather stable (including setation and the finer structures of sternite VIII) within the examined material.

_UHMANN_ (1983) described _Hirticomus fascifer_ from a single female specimen collected in northern Vietnam (‘River Chay’ probably Há Giang Province). _TELNOV_ (1999) examined the holotype, proposed the new combination and provided a redescription as _Formicomus fascifer_, based on an additional male specimen from Hanoi. The male characters presented by _TELNOV_ (1999) fully agree with those of _A. mutillaria_. The newly proposed synonymy is further confirmed by examination of another male specimen from Vietnam (listed above).

_Anthelephila ruficollis_ Saunders, 1834

(Figs 8–11, 17)


_Anthelephilus ru fi collis_ (incorrect subsequent spelling): _PIC_ (1899b): 758 (rec. Indonesia).


_Formicomus ru fi collis_ var. _annamitus_ Pic, 1903a: 56, _syn. nov._

_Formicomus uncinatus_ Desbrochers, 1875: 42; _DES BROCHERS DES LOGES_ (1881): 152 (note on identity); _PIC_ (1898): 20 (note); _UHMANN_ et al. (2005): 11 (note); _syn. nov._

_Anthelephilus uncinata_ _CHANDLER_ et al. (2008): 424 (catalogue, distribution).

_Formicomus (Anthelephilus) inhumeralis_ Pic, 1903b: 644, _syn. nov._


_Formicomus ruficollis_ var. _annamitus_: _SYNTYPES_: 1 ♂, ‘Annam Phuc-Son Nov. Dez. H. Fruhstorfer [p; black frame] // type [h; yellowish label] // TYPE [p; red label] // v. annamitus Pic [h]’ (MNHN); 2♂ 2♀, bearing only identical 1st label (MNHN).

_Formicomus inhumeralis_: _SYNTYPES_: 1 ♂, ‘Manille Baer [p] // type [h; yellowish label] // TYPE [p; red label] // inhumeralis Pic [h]’ (MNHN); 1♂, ‘Manile [h; partly illegible] (MNHN); 1♂ 1♀, ‘Manile [h] // inhumeralis [h]’ (MNHN).

_Additional material. AFGHANISTAN: KUNDUZ PROVINCE: 1 ♂, Kunduz, 7.vii.1964, Nurolhak [lgt.] (NMPC). BANGLADESH: DHAKA DIVISION: 1♂ 3♀, Dhaka, 8.v–18.ix.1945 [different dates], D. Leston lgt. (BMNH);

Redescription (male, Biratnagar, ZKDC). Body length 4.2 mm. Head black, pronotum dark reddish, elytra black; antennae and legs black, base of femora reddish.

Head 1.2 times as long as wide, including eyes; base rather widely rounded, its outline moderately convex medially in dorsal view, tempora moderately narrowing posteriorly, posterior
temporal angles indistinct. Eyes small, moderately convex. Surface glossy, distinctly punctate dorsally; punctures mostly dense but well-spaced, distinctly sparser near base. Setation short, decumbent, with scattered long, erect tactile setae. Antennae moderately long, distinctly enlarged in distal third; antennomere X 1.5 times, XI 2.5 times as long as wide.

Pronotum robust, 1.4 times as long as wide, slightly narrower than head including eyes, nearly evenly rounded anteriorly, distinctly impressed laterally in posterior half; pronotal disc evenly shaped, its outline nearly evenly convex in lateral view. Surface glossy, distinctly punctate; punctures unevenly spaced, pronotal disc somewhat sparsely punctured postero-medially (glossy, unwrinkled), and dorso-laterally in posterior half with paired longitudinal strip of fine wrinkles and dense punctures; lateral surface largely impunctate and glossy, including latero-basal impressions. Setation similar to that of head, subdecumbent, with scattered long tactile setae.

Meso- and metaventrite simple.

Elytra 1.7 times as long as wide, convex, subtruncate apically; humeri slightly marked, omoplates and postbasal impression absent. Surface distinctly and rather evenly punctate, glossy. Setation conspicuous, mostly decumbent to suberect, with numerous, moderately longer erect tactile setae.

Legs robust; profemora with strong lobe-like process; protibiae with distinct, blunt protrusion in distal half; penultimate tarsomere widened and flattened distally, with terminal tarsomere articulated dorsally in all tarsi.

Abdominal characters as in Figs 9–13; prongs of sternite VIII lobed dorso-medially at about mid-length and densely setose medially and ventrally; apical portion of tegmen 0.6 times as long as basal piece.

**Variation.** Body length 3.2–4.6 mm. Pronotum usually reddish (Fig. 17), sometimes more or less darkened anteriorly (SE Asia). Specimens from the Philippines and Indonesia are nearly entirely black. The base of the head more or less evenly rounded.

Female sternum VII simple, slightly produced postero-medially; female tergum VII sub-triangular, rounded apically.

**Differential diagnosis.** *Anthelephila ruficollis* resembles *A. limaria* Kejval, 2006 from Nepal and Northern India in body form and colouration, but differs in lack of a distinct bluish reflection of the elytra, the semicircular to somewhat widely rounded head base, the simple mesoventrite (lacking any median edge and/or protrusion in both sexes), and the apically simply-rounded female tergum VII (strongly narrowed, with obtuse to slightly incised apex in *A. limaria*). Male characters of these two species are quite dissimilar.

**Distribution.** Afghanistan, Bangladesh, Bhutan, China (SE provinces), India (West Bengal, Andaman Islands), Indonesia (Bali, Lombok, Java, Sumatra, Sumba, Sulawesi), Japan, Laos, Malaysia, Myanmar, Nepal, Philippines, Syria, Thailand, Vietnam.

**Remarks.** PIC (1903a,b) described *Formicomus ruficollis var. annamitus* from Vietnam and *Formicomus (Anthelephilus) inhumeralis* from the Philippines (Luzon). Having examined the relevant types and numerous additional specimens from SE Asia, including the Philippines and Indonesia, I failed to find any substantial differences in male characters from *Anthelephila ruficollis*. Consequently both taxa are regarded as junior synonyms of this species.

DESBOUCHER DES LOGES (1881) described *Formicomus uncinatus* from an unstated number of specimens originating from Syria. This species is known only from Syria (PIC 1895, 1898;
Figs 8–13. *Anthelephila ruficollis* Saunders, 1834 (Biratnagar, male): 8 – profemur and protibia; 9 – sternum VII; 10 – tergum VII; 11 – sternite VIII (half) in dorsal view; 12 – tergite VIII; 13 – apical portion of aedeagus. Scales (0.5 mm): A – Fig. 13; B – Fig. 11; C – Figs 8, 9, 12; D – Fig. 10.
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Chandler et al. 2008), and its type material has never been examined. I failed to find any type specimens in MNHN and other major collections; nevertheless, the original description comprises several remarkable morphological characters revealing, in my opinion, its species identity: elytral humeri absent (‘épaules nulles’), elytral apices truncate (‘sommet des élytres largement tronqué’), and male profemoral process robust and apically hooked (‘une très-grande dent terminée par un crochet’). Combination of these three characters is rarely present within the genus; however, they are all shared by *Anthelephila ruficollis*, including the very similar colouration. Moreover, the record of *F. uncinatus* from Syria by Pic (1895) was found to be based on specimens of *A. ruficollis*, therefore *F. uncinatus* is regarded as a junior synonym of the latter species.

As already stated by Laferté-Sénéctère (1849a), *Anthelephila bengalensis* (Wiedemann, 1823) is very probably conspecific with *A. ruficollis*. It was described from the same region, probably Bangladesh (‘Bengalia’), and later recorded from Japan and Vietnam (Marseul 1876; Uhmann 1983, 1985; Chandler et al. 2008). At least some of the Uhmann’s records of *A. bengalensis* from Vietnam (Uhmann 1983) surely belong to this species.

*Anthelephila ruficollis* appears to be common and widespread species. Based on label data, part of the examined specimens were collected on beaches, from a rat carcass, by sifting...
litter, by treading mud next to water, or by means of attraction to cantharidin bait (Thailand, G. A. Shook lgt.).

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References


