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Review of the genus *Acantholabus* Heinrich (Hymenoptera: Ichneumonidae)

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Abstract. The genus *Acantholabus* Heinrich, 1974 is reviewed. The three previously known species are re-described, and a new species, *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov., from Northwestern Yunnan, is described and illustrated. An identification key to the species of the genus is also provided.

Keywords. Darwin wasps, Eastern Himalaya, Three Parallel Rivers, Ichneumoninae, Platylabini.

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Introduction

Acantholabus Heinrich, 1974 is a small endemic Himalayan genus in the ichneumonine tribe Platylabini Berthoumieu, 1904 (Hymenoptera, Ichneumonidae, Ichneumoninae), comprising three previously known species described from Kachin State of Myanmar (Heinrich 1974) (Fig. 1A). Prior to this study, there

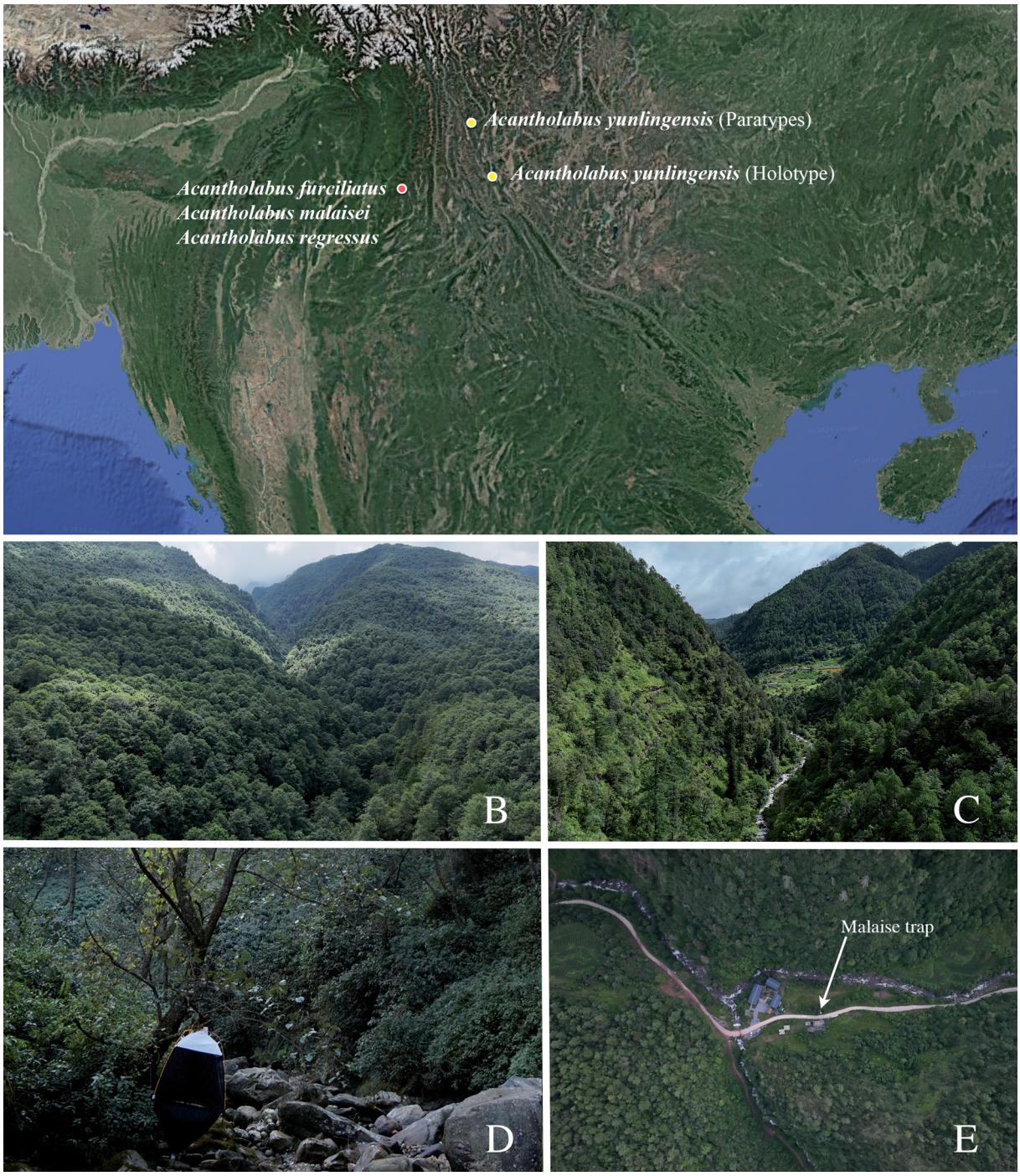

Fig. 1. A. *Acantholabus* distribution map, [yellow] = *A. yunlingensis* Reshchikov & Kikuchi sp. nov., [red] = *A. furciliatus* Heinrich, 1974, *A. malaisei* Heinrich, 1974, *A. regressus* Heinrich, 1974, available from ©Google Maps: https://www.google.com/maps/d/u/2/edit?mid=1L35S1cDTajUBSnR64heXj83fcetdPck&usp=sharing. **B**. Aerial photo of the type locality of *A. yunlingensis*, Heilong spring valley in the Cang Mountain foothills (2300 m a.s.l.) near Dali University. **C**. Aerial photo of the sampling site in the Chongjiang River valley at Mt Laojun. **D**. Malaise trap at the type locality of *A. yunlingensis*, Heilong spring in the Cang Mountain foothills (2300 m a.s.l.) near Dali University. **E**. Aerial photo of the sampling site in the Chongjiang River valley at Mt Laojun with Malaise trap.

were 76 Oriental species of Platylabini (Yu *et al.* 2016; Riedel 2017, 2023a), most of which are known from the Himalayan region (Heinrich 1974; Riedel 2017).

Within the Platylabini, *Acantholabus* resembles *Dentilabus* Heinrich, 1974, these genera sharing characteristics such as large and broad thyridia (each wider than the space between them), as well as elongate propodeal spiracles (Tereshkin 2009). Both *Acantholabus* and *Dentilabus* possess long propodeal apophyses, but the former can be distinguished from the latter by weak longitudinal impression between thyridia (distinct in *Dentilabus*), and flat horizontal part of scutellum, which is usually convex in *Dentilabus* (for details see remarks for the genus diagnosis).

Unfortunately, nothing is known about the biology of the genus. However, all species of *Acantholabus* (including the species described here) are restricted to the Eastern Himalaya and are found between 2100–2400 m above sea level (Fig. 1A). Other Platylabini are known as larval parasitoids of Drepanidae Meyrick, 1895 and Geometridae Leach, 1815 (Bradley 1978; van Veen 1981; Short *et al.* 2002; Riedel 2008; Riedel *at al.* 2013; Shaw *et al.* 2015).

The present publication describes a new species of *Acantholabus*, *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov. from the Yun Mountains Range, which forms a natural boundary between the Mekong and upper flow of the Yangtze Rivers, and is the part of the Three Parallel Rivers Region of Yunnan.

Material and methods

This work is based on material collected with Malaise traps during the "Darwin Wasps of the Eastern Himalaya" project. We operated 63 Malaise traps in northwestern Yunnan on a permanent basis from 2018 till 2023. We examined samples from 52 trap-years; despite the highly representative material, we found only three females of the new species of *Acantholabus*. These specimens were found in the samples from a site with deciduous broad-leaf forest (dominant species *Alnus nepalensis* D.Don and *Pinus yunnanensis* Franch.) at Heilong spring, in the foothills of Cang Mountain (2300 m a.s.l.) near Dali University (Fig. 1B, D), and a site at a farmland with *P. yunnanensis* along the Chongjiang River valley, on the foothills of Laojun Mountain (Yulong Naxi Autonomous County, Lijiang) (Fig. 1C, E).

Specimens were examined using a Motic SMZ171 stereo microscope. Images were acquired digitally using the CA005 microscopic imaging system and processed with Adobe Photoshop. Distribution maps were produced using Google Earth Pro.

Morphological terminology and wing venation nomenclature follow Broad *et al.* (2018) and aligned with the Hymenoptera Anatomy Ontology (HAO) (Yoder *et al.* 2010). Abbreviations and morphological terms used in the text are as follows:

OD = the longest diameter of a posterior lateral ocellus
OOL = the shortest distance between a posterior lateral ocellus and a compound eye
POL = the shortest distance between the posterior lateral ocelli
S1–S6 = refer to the metasomal sternites
T1–T7 = refer to the metasomal tergites 1–7

The specimens examined are deposited in the following institutions (curators in parentheses):

IEHBR = Institute of Eastern-Himalaya Biodiversity Research, Dali (Xian-Fu Li)
ISAS = Kunming Institute of Zoology, Kunming (Kaiqing Li)
NHRS = Swedish Museum of Natural History, Stockholm (Hege Vårdal)
ZSM = The Bavarian State Collection of Zoology, Munich, Germany (NA)

Results

Taxonomy

Class Insecta Linnaeus, 1758
Order Hymenoptera Linnaeus, 1758
Superfamily Ichneumonoidea Latreille, 1802
Family Ichneumonidae Latreille, 1802
Subfamily Ichneumoninae Latreille, 1802
Tribe Platylabini Berthoumieu, 1904

Genus ***Acantholabus*** Heinrich, 1974

Acantholabus Heinrich, 1974: 157–158. Type species: *Acantholabus malaisei* Heinrich, 1974 by original designation.

Diagnosis

Female antenna slender, bristle-shaped, with elongate basal flagellar segments, not widened beyond middle, with a white ring. Male antenna with distinct, elongate tyloids. Eye rather large. Gena short. Vertex abruptly sloping just behind ocelli. Temples short, sharply and roundly narrowed behind the eyes. Occipital carina with dorsal impression which does not reach level of eyes or hind ocelli. Clypeus strongly convex, weakly separated from middle field of face. Mandibles gradually narrowed, dorsally and ventrally carinated. Pronotum without carina interrupting transverse furrow. Upper margin of pronotum not thickened. Pronotal base gradually and uniformly curved. Mesoscutum rather strongly convex, almost as long as broad, very densely punctured. Notauli visible only at anterior third of mesoscutum. Mesoscutum matt. Subtegular ridge thick and sharp. Sternaulus weakly impressed at front half. Scutellum uniformly raised, laterally and apically carinate with high, sharp carinae, its horizontal part flat. Hind margin of metanotum with teeth. Horizontal part of propodeum in middle distinctly shorter than area petiolaris. Lateral propodeal carina indistinct, if present, situated at middle of area superomedia. Area dentipara short, with longer or short but distinct denticular apophysis. Juxtacoxal carina distinct. Propodeal spiracle relatively large, elongate, oval. Legs rather long and slender. Hind coxa elongate. Fore wing with areolet rather large, quadrangular, and symmetrical. Vein *R* straight and long. Vein *1cu-a* interstitial. T1 petiole thick, strongly flattened at base. Gastrocoeli weakly impressed and elongate. Thyridia large and broad, distant from base of T2, with rather narrow interval between them with weak impression. Hypopygium relatively large, roughly triangular in outline, without distinct longitudinal fold. Ovipositor sheath slightly projecting behind apex of metasoma.

Remarks

This genus resembles *Dentilabus*, but can be distinguished by the following characters: male flagellum with distinct tyloids (usually absent in *Dentilabus*); horizontal part of scutellum flat (usually convex in *Dentilabus*); T2 with weak median longitudinal impression between thyridia. *Dentilabus iyoensis* Kikuchi & Konishi, 2018 is an exception, as it shares these characteristics with *Acantholabus* (Kikuchi & Konishi 2018). The generic position of this species should be reconsidered in future studies.

Acantholabus furciliatus Heinrich, 1974
Figs 2–3

Acantholabus furciliatus Heinrich, 1974: 160.

Diagnosis

Can be easily distinguished from all the other species of *Acantholabus* by this combination of characters: (1) propodeal apophysis distinct, as long as basally wide in profile (Fig. 3D); (2) scutellum with apically

tooth-like lateral protrusions (Fig. 3D); (3) T1 with dorso-lateral carina (Fig. 3D); (4) body mostly dark coloured (Fig. 2); (5) T1–2 with broad ivory apical margins (Figs 2, 3C–D).

Type material

Holotype

MYANMAR • ♀; Kachin, Kan Paik Ti; 2100 m a.s.l.; 9 Jun. 1934; R. Malaise leg.; ZSM, Hym. 836.

"[White label] N.E. BURMA / Kambaiti 2000 m / 9.6.1934 Malaise // [White label] *Acantholabus* / *furciliatus* / det. Heinrich Hein // [Red label] Typus Nr. Hym. / 836 / Zoologische / Staatssammlung / München".

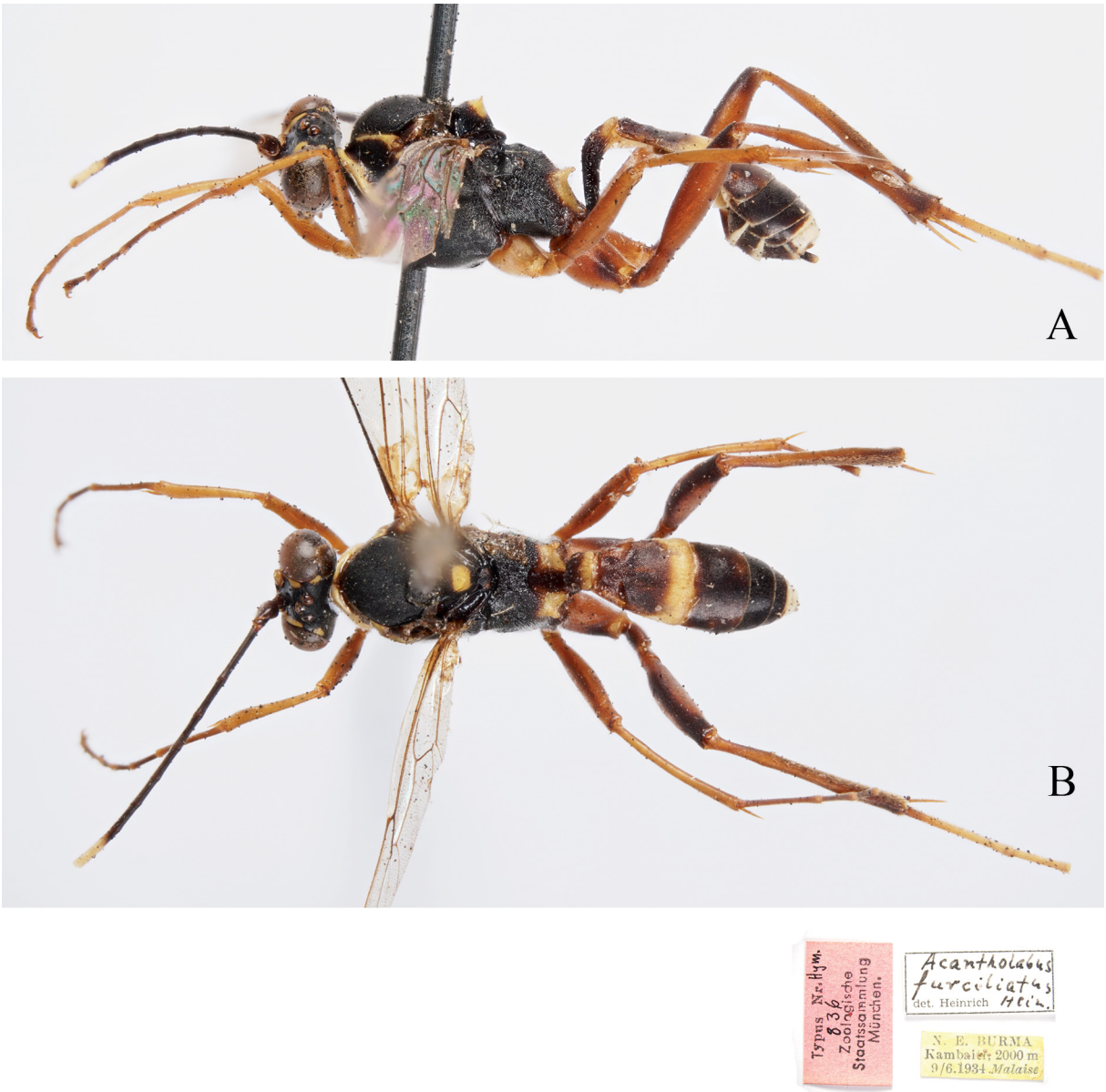

Fig. 2. *Acantholabus furciliatus* Heinrich, 1974, holotype, ♀ (ZSM Hym. 836). **A**. Habitus, in lateral view. **B**. Habitus, in dorsal view.

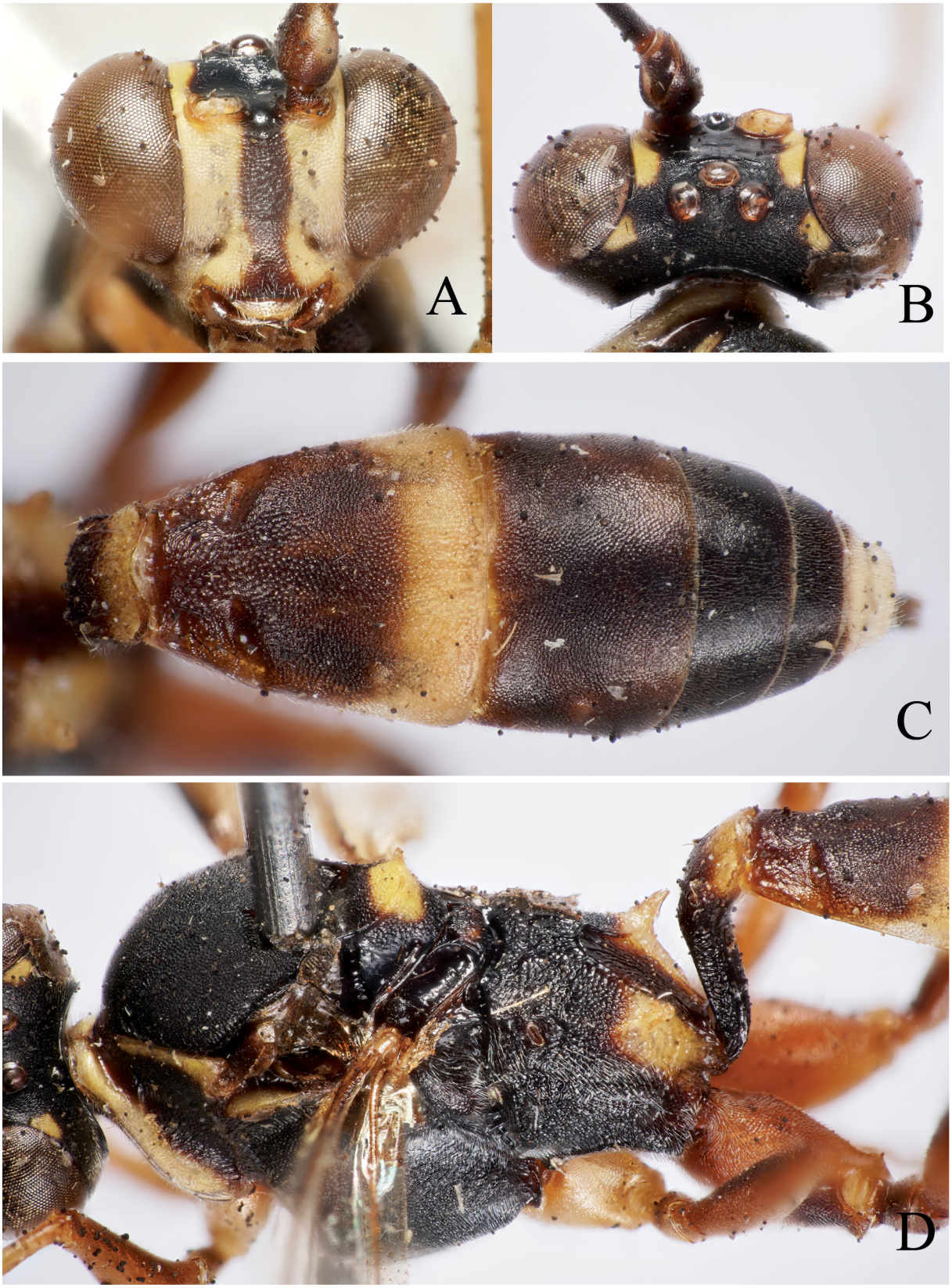

Fig. 3. *Acantholabus furciliatus* Heinrich, 1974, holotype, ♀ (ZSM Hym. 836). **A**. Face. **B**. Head in dorsal view. **C**. Metasoma in dorsal view. **D**. Mesosoma in dorso-lateral view.

Re-description

Female

Head. Body length 8 mm. Left flagellum with 8 basal flagellomeres, right flagellum missing. First flagellomere 7.8 × as long as broad at apex, all flagellomeres longer than wide (Fig. 2). Head rather transverse, 3.65 × as long as broad, strongly narrowed behind eyes, (Fig. 3B). POL : OD : OOL = 1.2 : 1 : 0.9. Vertex granulate. Eye large. Frons granulate, dull. Face 1.8 times as broad as high (Fig. 3A), granulate, dull. Clypeus moderately convex, 2.1 × as broad as high, granulate, its apical margin sharp, weakly rounded. Mandible moderately narrowed from base to apex, with dorsal and ventral carinae, its ventral tooth slightly shorter than dorsal tooth. Malar space 0.8 × as long as basal mandibular width.

Mesosoma. Notaulus weakly impressed at frontal 0.2 of mesoscutum. Mesoscutum finely punctulate, slightly longer than wide, dull. Mesopleuron including speculum and metapleuron finely granulate, dull. Sternaulus slightly impressed at frontal half of mesopleuron. Scutellum pyramidal, punctulate, lateral carina complete, with dentiform spine posteriorly (Fig. 3D). Propodeum finely rugose-punctate (Fig. 3D). Area basalis trapezoid, much wider than long. Area superomedia heart-shaped, slightly wider than long, with some longitudinal rugae; lateral propodeal carina indistinct. Posterolateral edge of area dentipara with long apophysis (2 × as long as basally wide) (Fig. 3D). Juxtacoxal carina present. Hind coxa 1.9 × as long as wide, granulate, without scopa. Hind femur 4.7 × as long as wide. Fore wing with areolet quadrangular, pointed anteriorly, *2m-cu* reaching its middle. Vein 1*cu-a* interstitial to *M&RS*.

Metasoma. Amblypygous (Fig. 2). T1 with lateral carina; petiole wider than high, 1.9 × as long as postpetiole. Postpetiole without median field, granulate. S2–4 with median folds. Gastrocoelus triangularly impressed, granulate (Fig. 3D). Thyridium oblique, ca 1.3 × as wide as interval between thyridia (Fig. 3D). Ovipositor sheath reaching slightly beyond metasomal apex.

Colour. Black (Fig. 2). Flagellum black, apical half of 7th flagellar segment and 8th segment ivory dorsally. Head black; palps, mandible except teeth, labrum, clypeus and face except central longitudinal black stripe, frontal orbit, stripe on gena and triangular spot of vertex ivory. Mesosoma black; frontal and upper margins of pronotum, subtegular ridge, central spot of scutellum, apophysis and area posteroexterna of propodeum yellow. Tergites blackish; apical half of postpetiole and apical band of T2 yellow. Apical bands of T6 and T7 mainly ivory. Fore and mid coxae ivory (mid coxa with some reddish suffusion); legs otherwise reddish; fore and mid tarsi black; hind femur infuscate in apical 0.2; hind tibia blackish, with subbasal reddish-brown ring; hind metatarsus and 2nd hind tarsomere ivory (following tarsomeres missing). Wings almost hyaline, pterostigma brownish.

Male

Unknown.

Host

Unknown.

Distribution

Myanmar.

Acantholabus malaisei Heinrich, 1974
Figs 4–5

Acantholabus malaisei Heinrich, 1974: 158–160.

Diagnosis

Can be easily distinguished from all the other species of *Acantholabus* by this combination of characters: (1) propodeal apophysis elongate, 2.8 × as long as broad in profile, and downcurved (Figs 4, 5D, 7E);

(2) scutellum apically without tooth-like lateral protrusions (Fig. 5D); (3) T1 with lateral carina (Fig. 5G); (4) body mostly dark coloured (Figs 4–5); (5) T1–2 without broad white apical margins (Fig. 5G).

Type material

Holotype

MYANMAR • ♀; Kachin, Kan Paik Ti; 2100 m a.s.l.; 20 May 1934; R. Malaise leg.; NHRS, NHRS-HEVA000018484.

"[White label] N.E. BURMA / Kambaiti 7000 ft / 20.V.1934 / R. MALAISE // [White label] *Acantholabus* / *malaisei* / ♀ Hir. / det. G. Heinrich // [Red label] Holotype // [Red label] 442 // [White label] NHRS-HEVA / 000018484".

Re-description

Female

Head. Antenna with 38 flagellomeres, slender, slightly broadened beyond middle, not flattened ventrally, with white ring dorsally (Fig. 4). Basal flagellomeres elongate, first flagellomere 6.8 × as long as broad at apex. Eye rather large (Fig. 5A–B). Face 1.6 × as broad as high (Fig. 5A), without punctures, shagreened, weakly protruding in profile (Fig. 5B). Space between scapes with impression (Fig. 5A). Clypeus separate from face with slight impression, rounded, slightly convex in profile (Fig. 5B), 1.9 × as broad as high (Fig. 5A), sculptured as face. Its apical margin sharp. Labrum visible. Mandible strongly narrowed from base to its apex, sharply carinated dorsally and ventrally (Fig. 5A–B). Malar space 0.9 × as long as basal mandibular width. Gena short, shagreened (Fig. 5B). Head rather transverse, strongly narrowed behind eyes, 0.3 × as long as broad (Fig. 5C). Vertex sloping down immediately behind ocelli (Fig. 5C), shagreened. POL : OD : OOL = 1.2 : 1 : 0.9. Occipital carina not impressed medially, lower end erased, not reaching base of mandible or hypostomal carina (Fig. 5B).

Mesosoma. Pronotal collar short. Mesoscutum rather strongly convex, slightly longer than broad, densely punctate with shagreened microsculpture, matt. Notauli weakly impressed in anterior third. Subtegular ridge defined. Speculum with wrinkled sculpture. Mesopleural fovea consisting of a short, deep horizontal groove. Sternaulus rather vestigial, visible at anterior part. Mesopleurae densely punctured, wrinkled, matt. Scutellum high, elevated above postscutellum, carinated laterally and apically by high sharp carina (Fig. 5D). Hind margin of metanotum with triangular projections opposite lateral longitudinal carinae. Propodeum tetrahedral in dorsal profile, horizontal part equal to area petiolaris (Fig. 5F). Propodeal carinae developed. Area basalis rather long. Area superomedia hexagonal, approximately as long as broad. Lateral propodeal carina present, joining area superomedia before its middle. Apophysis long (Fig. 5F). Juxtacoxal carina distinct. Propodeal spiracles elongate oval. Legs long and robust. Hind coxa 1.6 × times as long as broad. Hind femur 4.2 × as long as wide. Fore wing with areolet large, quadrangular, receiving vein 2m-cu at its middle. Pterostigma broad. Vein 1*cu-a* interstitial to *M&RS*. Hind wing with distal abscissa of *Cu* straight, *Cu* about 1.7 × as long as cu-a, these veins almost opposite (Fig. 4).

Metasoma. T1 with distinct lateral carina, petiole short, 1.6 × as long as postpetiole (in profile) (Figs 4, 5G–H). Gastrocoeli weakly impressed and elongate. Thyridia large and broad, distant from base of T2, with rather narrow interval between them with weak impression (Fig. 5G). Ovipositor sheath slightly projecting behind apex of metasoma (Fig. 4).

Colour. Body mostly blackish-brown (Fig. 4), except: palpi, face and clypeus laterally (Fig. 5A), spots at POL (Fig. 5C), collar, pronotal base and subtegular ridge (Fig. 5B), scutellum posteriorly (Fig. 5D), and propodeal apophysis (Fig. 5F) yellow; legs dorsally dark-red (Fig. 4); legs ventrally (Fig. 4), T1 postpetiole, and hind margin of T2 (Fig. 5G) orange-brown; flagellomeres 8–10, and T6–7 ivory (Fig. 4).

Fig. 4. *Acantholabus malaisei* Heinrich, 1974, holotype, ♀ (NHRS, NHRS-HEVA000018484). Habitus in lateral view.

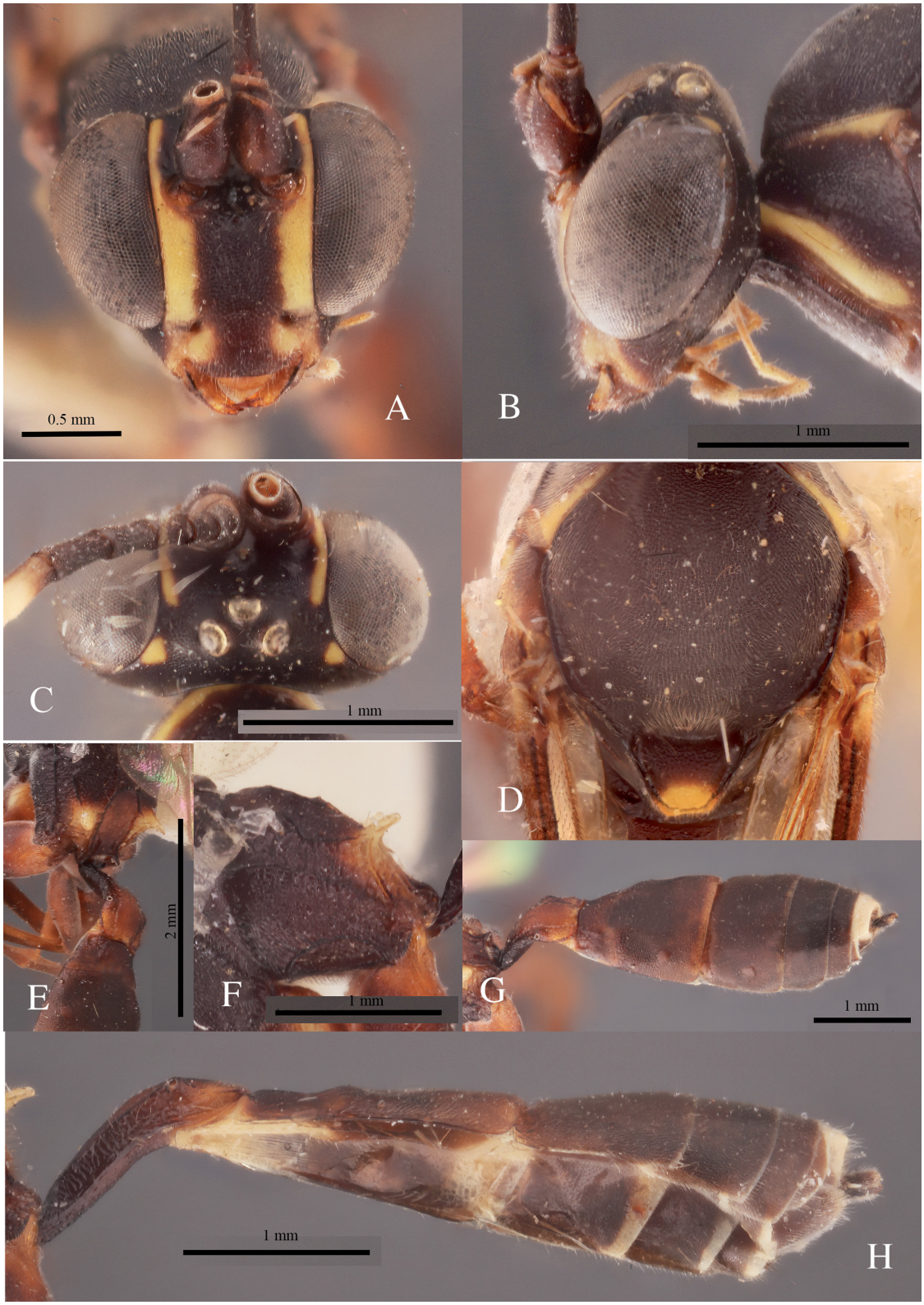

Fig. 5. *Acantholabus malaisei* Heinrich, 1974, holotype, ♀ (NHRS, NHRS-HEVA000018484). **A**. Face. **B**. Head in lateral view. **C**. Head in dorsal view. **D**. Mesoscutum in dorsal view. **E**. Propodeum and T1–2 in dorso-lateral view. **F**. Propodeum in lateral view. **G**. Metasoma in dorso-lateral view. **H**. Metasoma in lateral view.

Male

Antenna with 38 flagellomeres with distinct, elongate tyloids (on 8–20 flagellomeres), with white ring on flagellomeres 11–15. Face and clypeus mostly white, except only one black longitudinal band in their middle. Middle and hind coxae without black markings, fore and mid coxae white spotted. T5–6 with membranous, white hind margins, T7 with white apical marking. Hind tarsus yellowish. The rest as in female.

Host

Unknown.

Distribution

Myanmar.

Acantholabus regressus Heinrich, 1974
Figs 6–7

Acantholabus regressus Heinrich, 1974: 161.

Diagnosis

This species can be easily distinguished from all the other *Acantholabus* species by this combination of characters: (1) propodeum with short tooth-like protrusions not forming apophysis (Fig. 7E); (2) scutellum without tooth-like lateral protrusions (Fig. 7D); (3) T1 with lateral carina; (4) body mostly dark (Fig. 6); (5) T1–2 without broad white apical margins (Fig. 7G).

Type material

Holotype

MYANMAR • ♀; Kachin, Kan Paik Ti; 2100 m a.s.l.; 8 Jun. 1934; R. Malaise leg.; NHRS, NHRS-HEVA000018485.

"[White label] N.E. BURMA / Kambaiti 7000 ft / 8/6 R. MALAISE // [White label] *Acantholabus* / *regressus* / 1970 Hein. / det. G. Heinrich // [Red label] Holotype // [Red label] 331 // [White label] NHRS-HEVA / 000018485".

Re-description

Female

Head. Antenna with 31 flagellomeres, slender, weakly broaded beyond middle, not flattened ventrally, with white ring dorsally (Fig. 6). Basal flagellomeres elongate, first flagellomere 4.9 × as long as broad at apex. Eye rather large (Fig. 7A–B). Face 1.3 × as broad as high (Fig. 7A), flat, with sparse punctures, setose, shining, not protruding in profile (Fig. 7B). Space between scapes with impression (Fig. 7A). Clypeus separated from face by distinct impression, inverted trapezoid shape (Fig. 7A), slightly convex in profile (Fig. 7B), 1.6 × as broad as high (Fig. 7A), sculptured as face. Its apical margin sharp. Labrum visible. Mandible strongly narrowed from base to its apex. Malar space elongate, 1.5 × as long as basal mandibular width (Fig. 7A). Gena elongate (Fig. 7B). Head subquadrate, roundly narrowed behind eyes, 0.4 × as long as broad (Fig. 7C). Vertex sloping down behind ocelli (Fig. 7B), shagreened (Fig. 7C). POL : OD : OOL = 1.5 : 1 : 1.3.

Mesosoma. Pronotal collar short (Fig. 7D). Mesoscutum rather strongly convex (Fig. 6), slightly longer than broad (Fig. 7D), densely punctate on shagreened microsculpture, matt. Notauli absent (Fig. 7D). Subtegular ridge defined. Speculum coarsely punctate, strongly reticulate. Mesopleural fovea a short, shallow horizontal groove covered with setae. Sternaulus absent. Mesopleurae punctured with deep,

scattered punctures, shagreened, matt. Scutellum high, elevated above postscutellum, with high, sharp carinae laterally and apically, carina, at apex interrupted, forming lateral teeth-like structure. Propodeal carinae developed (Fig. 7E). Area basalis subquadrate. Area superomedia pentagonal, approximately as long as broad (Fig. 7E). Apophysis distinct. Propodeal spiracles elongate oval. Legs long and slender. Hind coxa elongate, 1.5× as long as broad. Hind femur 4.6× as long as wide. Ratio of length of hind tarsomeres 3 : 1.5 : 1 : 0.6 : 0.9. Claws elongate, slightly curved. Fore wing with areolet large, quadrangular, receiving vein *2m-cu* at its middle (Fig. 7H). Vein 1*cu-a* interstitial to *M&RS*. Hind wing with distal abscissa of *Cu* straight, *Cu* about 3.5 times as long as *cu-a*, these veins almost opposite (Fig. 7H).

Metasoma. T1 with lateral carina, petiole short, 1.6× as long as postpetiole (in profile) (Fig. 6). Gastrocoeli weakly impressed and elongate. Thyridia large and broad, distant from base of T2, with rather narrow interval between them with weak impression (Fig. 7G).

Colour. Body mostly black (Fig. 6), except: scapes ventrally, face and clypeus laterally, gena behind eye margin, upper part of propleuron, tegula, dorso-anterior corner of mesopleuron, fore and middle coxae and trochanters, mesoscutellum dorsally, hind margins of T4–7 yellow; flagellomeres 11–16 white; fore and middle legs, hind tarsus reddish-yellow; hind leg (except coxa) reddish; pterostigma and mesosoma brown (Figs 6–7).

Male

Unknown.

Host

Unknown.

Distribution

Myanmar.

Fig. 6. *Acantholabus regressus* Heinrich, 1974, holotype, ♀ (NHRS, NHRS-HEVA000018485). Habitus in lateral view.

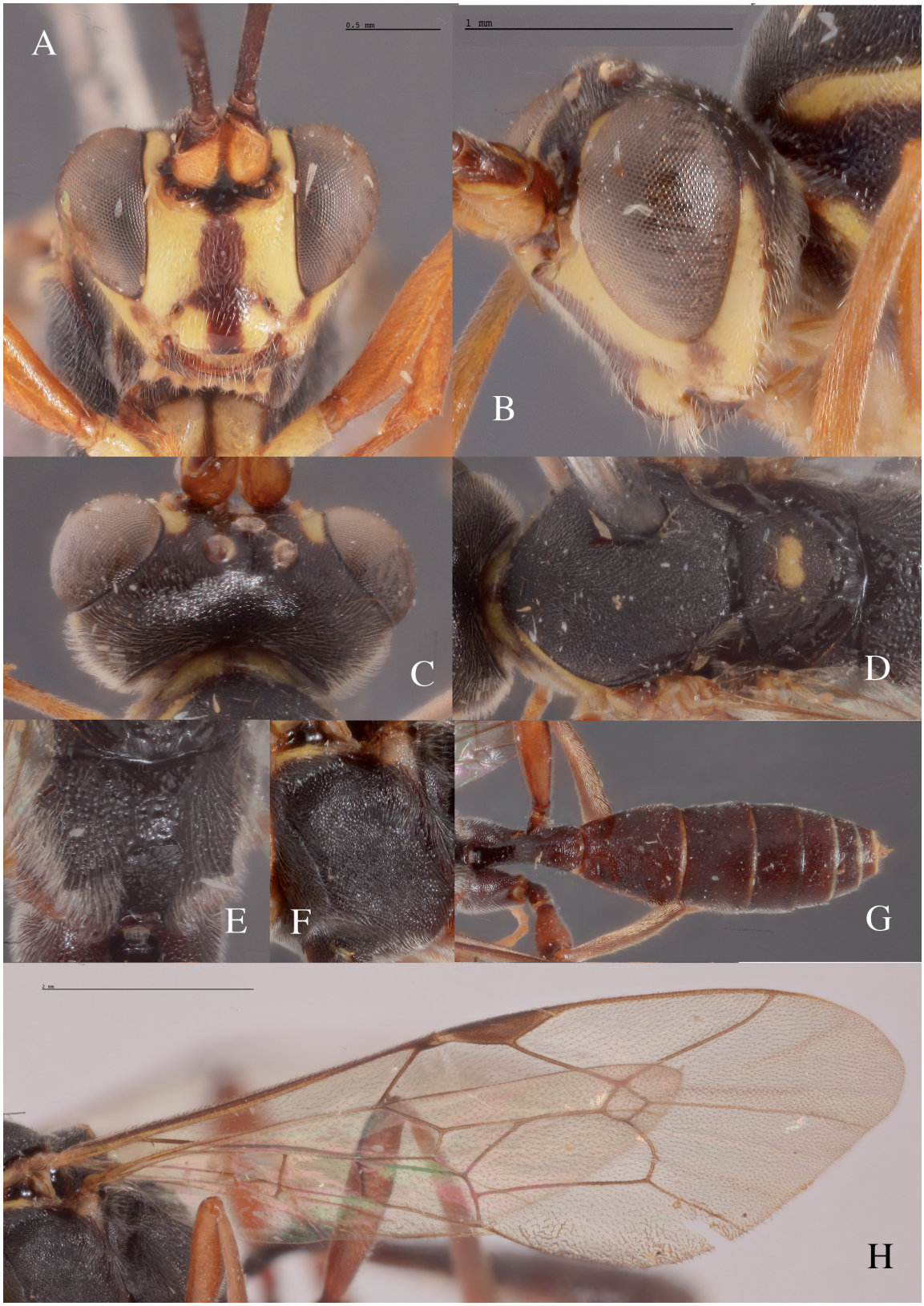

Fig. 7. *Acantholabus regressus* Heinrich, 1974, holotype, ♀ (NHRS, NHRS-HEVA000018485). **A**. Face, **B**. Head in lateral view. **C**. Head in dorsal view. **D**. Mesoscutum in dorsal view. **E**. Propodeum in dorso-lateral view. **F**. Mesopleuron in lateral view. **G**. Metasoma in dorsal view. **H**. Wings.

Acantholabus yunlingensis Reshchikov & Kikuchi sp. nov.
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Figs 8–9

Diagnosis

Can be easily distinguished from all the other *Acantholabus* species by the following combination of characters: (1) propodeal apophysis small and straight (Fig. 9E); (2) scutellum without tooth-like lateral protrusions (Fig. 9H); (3) T1 without dorso-lateral carina; (4) body mostly brown-yellow with dark charcoal mesoscutum (Fig. 8); (5) T1–2 without white colouration (Figs 8, 9C, I).

Etymology

The species epithet is an adjective, and refers to the Yun Mountains (Chinese 雲嶺 [Yun Ling], literally "Cloudy Peaks"), where this new species was discovered.

Type material

Holotype

CHINA • ♀; Yunnan, Dali, Mt Cang, Heilong spring; 25°40′02.0″ N, 100°08′51.4″ E; 2300 m a.s.l.; 29 Sep.–6 Oct. 2019; Malaise trap; Xia Yang leg.; IEHBR, DLU 15117.

Paratypes

CHINA • 1 ♀; Yunnan, Lijiang district, Mt Laojun; 26°45′50.6″ N, 99°40′04.3″ E; 2400 m a.s.l.; 27 Aug.–17 Sep. 2022; Malaise trap; Xia Yang leg.; IEHBR, DLU 17923 • 1 ♀; same data as for preceding; ISAS, DLU 17958.

Description

Female

Head. Antenna with 33 flagellomeres, slender, slightly broaded beyond middle, not flattened ventrally, with white ring dorsally (Fig. 8). Basal flagellomeres elongate, first flagellomere 5.5 × as long as broad at apex. Eye rather large (Fig. 9A–B, D). Face 1.8 × as broad as high (Fig. 9A), without punctures, shagreened, weakly protruding in profile (Fig. 9B). Space between scapes with impression (Fig. 9A). Clypeus separated from face by weak impression, rounded, slightly convex in profile (Fig. 9B), 1.9 × as broad as high (Fig. 9A), sculptured as face. Its apical margin sharp. Labrum visible (Fig. 9A). Mandible strongly narrowed from base to apex, sharply carinated dorsally and ventrally (Fig. 9A–B). Malar space 0.9 × as long as basal mandibular width. Gena short, shagreened (Fig. 9B). Head rather transverse, sharply narrowed behind eyes, 0.3 × as long as broad (Fig. 9D). Vertex sloping down right after ocelli (Fig. 9D), shagreened. POL : OD : OOL = 1.2 : 1 : 1.1. Occipital carina angularly impressed medially, lower end interupted, not reaching base of mandible or hypostomal carina (Fig. 9B).

Mesosoma. Pronotal collar short (Fig. 9B). Mesoscutum rather strongly convex, slightly longer than broad, densely punctate on shagreened microsculpture, matt (Fig. 9H). Notauli shallowly impressed at anterior third (Fig. 9H). Subtegular ridge defined. Speculum shagreened (Fig. 9G). Mesopleural pit consisting of short, deep horizontal groove (Fig. 9G). Sternaulus rather vestigal, visible at anterior part. Mesopleuron not punctured, shagreened, matt (Fig. 9G). Scutellum high, elevated above postscutellum, carinated laterally but interrupted at apex (Fig. 9H). Hind margin of metanotum with triangular projections opposite lateral longitudinal carinae. Propodeum tetrahedral in dorsal profile, its horizontal parts equal to area petiolaris (Fig. 9E). Propodeal carinae developed (Fig. 9F). Area basalis rather long. Area superomedia hexagonal, approximately as long as broad (Fig. 9B). Lateral propodeal carina present, joining area superomedia before its middle. Apophysis short but distinct (Fig. 9E). Juxtacoxal carina distinct. Propodeal spiracles elongate oval. Legs long and slender. Hind coxa elongate, 1.5 × as long as

broad. Hind femur 4.2× as long as wide. Basal portion of hind tibia slender, apical portion expanding evenly in profile. Ratio of length of hind tarsomeres (from base to apex) 2.1 : 1.2 : 1 : 0.5 : 0.6. Claws elongate, weakly curved. Fore wing with areolet large, quadrangular, receiving vein *2m-cu* distal to its middle (Fig. 9K). Pterostigma broad. Vein 1*cu-a* interstitial to *M&RS*. Hind wing with distal abscissa of *Cu* straight, *Cu* about 3.5 times as long as *cu-a*, these veins almost opposite (Fig. 9K).

Fig. 8. *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov., holotype, ♀ (IEHBR, DLU 15117). Habitus in lateral view.

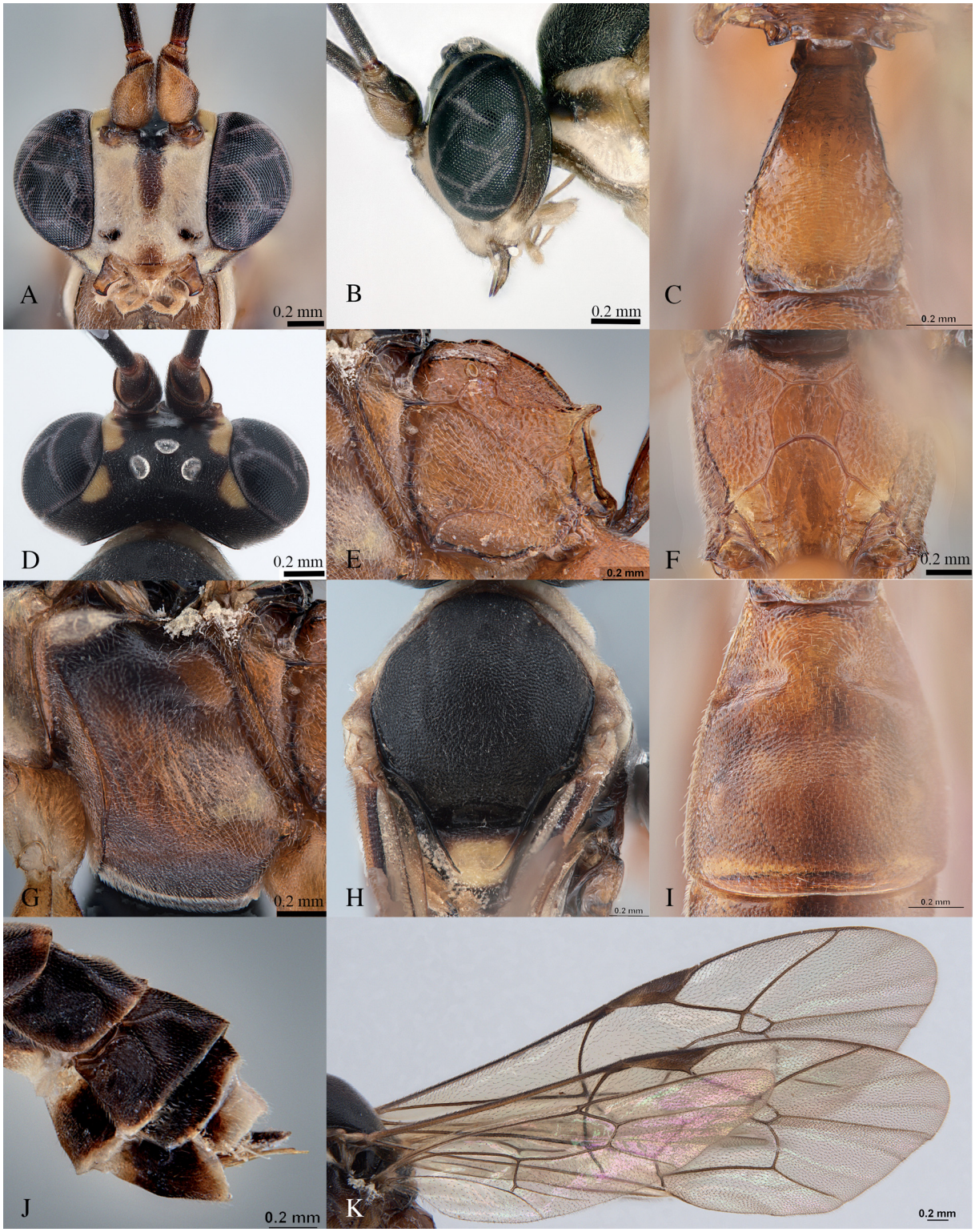

Fig. 9. *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov., holotype, ♀ (IEHBR, DLU 15117). **A**. Face. **B**. Head in lateral view. **C**. T1 dorsal view. **D**. Head in dorsal view. **E**. Propodeum in lateral view. **F**. Propodeum in dorsal view. **G**. Mesopleuron. **H**. Mesoscutum in dorsal view. **I**. T2 in dorsal view. **J**. T4–7 and ovipositor in lateral view. **K**. Wings.

Metasoma. T1 without lateral carina, petiole short (Fig. 9C), 1.6× as long as postpetiole (in profile) (Fig. 8). Gastrocoeli weakly impressed and elongate. Thyridia large and broad, distant from base of T2, with rather narrow interval between them with weak impression (Fig. 9I). Hypopygium triangular ventrally, without distinct longitudinal fold (Fig. 9J). Ovipositor sheath slightly projecting behind apex of metasoma (Fig. 9J).

Colour. Body mostly brown-yellow (Fig. 8), except: antenna (excluding scape ventraly and flagellomeres 7–11 dorsally), face medially (Fig. 9A), vertex (except lateral spots at eye orbit) (Fig. 9D), gena, pronotum dorsally, mesoscutum entirely, mesopleuron apically, T2–6 (except hind margin of T6), and hind tibia dark charcoal; flagellomeres 7–11 dorsally, face (except medial narrow band), fore coxa, pronotum ventrally and dorso-posteriorly, subtegular ridge, lower hind part of mesopleuron, hind margin of T6, T7 entirely, hind margin of S5, and hind margin of hypopygium ivory (Fig. 9J).

Variations. Female paratypes from Mt Laojun have darker metasoma with T2 mostly dark bean coloured (the hex code #330000) (Supp. file 1) and slightly longer apophysis (ratio of its dorsal length to its basal length 1.2× vs 0.9× in the holotype) (Supp. file 2).

Male

Unknown

Host

Unknown.

Distribution

China: Yunan.

Key to species of Acantholabus Heinrich, 1974

1. Propodeum with short tooth-like protrusions (Fig. 7E). Temple long, 0.7× as long as width of eye (Fig. 7B–C). Hind coxa black (Fig. 6). T5–7 with narrow white hind margins (Fig. 7G) .... ***A. regressus*** Heinrich, 1974
– Propodeum with elongate apophysis (Figs 3D, 5F, 9E). Temple short, 0.3–0.4× as long as width of eye (Figs 5B–C, 9B–C). Hind coxa reddish-brown (Figs 2, 3D, 4, 8). T6–7 with broad white hind margins (Figs 2, 3C, 5G–H) 2

2. T1–2 with broad ivory apical margins (Figs 2, 3C). Scutellum with tooth-like lateral protrusions (Fig. 3D). Area superomedia short ..... ***A. furciliatus*** Heinrich, 1974
– T1–2 without yellowish colouration (Figs 4, 5G–H, 8, 9C, I). Scutellum without tooth-like lateral protrusions (Fig. 5D). Area superomedia elongate (Fig. 5E) 3

3. Propodeum with large curved apophysis, slightly elongate (Fig. 5E–F). Sternaulus distinctly impressed (Fig. 4). T1 with lateral carina (Fig. 5G–H), petiole elongate, 1.9× as long as postpetiole (in profile). Body mostly dark (Fig. 4). Scape ventrally brownish-black (Fig. 5A). Face and clypeus black medially and yellowish laterally (Fig. 5A). Pronotum mostly black, with narrow ventral and dorsal margins (Fig. 5B) ..... ***A. malaisei*** Heinrich, 1974
– Propodeum with small straight apophysis, short (Fig. 9E). Sternaulus vestigial (Fig. 9G). T1 without lateral carina, petiole short (Fig. 9C), 1.6× as long as postpetiole (in profile). Body mostly pale (Fig. 8). Scape ventrally reddish-yellow (Fig. 9A). Face and clypeus mostly yellowish-white, (narrowly black medially) (Fig. 9A). Pronotum mostly white, with small dorsal-lateral pale reddish stripe (Fig. 9B) ..... ***A. yunlingensis*** Reshchikov & Kikuchi sp. nov.

Discussion

The new species is morphologically close to *A. malaisei*, the type species of the genus *Acantholabus*, in scutellar and propodeal structure (see Key). The genus has an Eastern Himalayan distribution (Fig. 1A) and all species were found between 2100–2400 m above sea level. Three species from Kachin State in northern Myanmar were collected by René Edmond Malaise (Malaise 1944). At both localities the new species was collected in autumn, Malaise's specimens between late April and early June (Heinrich 1974). *Pinus yunnanensis* is the dominant tree species at both localities and is broadly distributed across the Yun Range. The new species of *Acantholabus* seems to be rather rare, since we only found three specimens from over 50 years of Malaise trap samples. The Ichneumoninae collections in the Natural History Museum, London (NHMUK) and Florida State Collection of Arthropods, Gainsville (FSCA) were checked and no specimens of *Acantholabus* were found.

The biology of the genus *Acantholabus* is unknown; therefore, it is plausible to surmise that this genus also parasitizes larval Lepidoptera Linnaeus, 1758 (potentially Geometridae), given the habitat and the biology of other Platylabini. Considering the Himalayan diversity of the family Pinaceae Spreng. ex F.Rudolphi (Farjon 2017), we can also assume a high species diversity of geometrid moths based on coniferous plant diversity (Smetacek 2008; Ashton 2016; Sanyal *et al.* 2017) and a corresponding diversity of the members of Platylabini in the region. However, our discovery is only the fourth record of a member of the tribe from Yunnan Province, the others are *Ectopoides flavoverticalis* Riedel, 2017, *Linycus simulator* Heinrich, 1974, and *Pachyjoppa tibialis* Cameron, 1901 (Riedel 2017). Currently, only 29 species of the entire subfamily Ichneumoninae are known from Yunnan (Riedel 2023b; Yang *et al.* 2024). We hope that our new Darwin wasp discovery will encourage further studies of the insect fauna in the unique biodiversity hotspot of the Three Parallel Rivers Region of Yunnan.

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Supplelmentary files

Supp. file 1. *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov., paratype, ♀ (IEHBR, DLU 15117), metasoma dorsal view. https://doi.org/10.5852/ejt.2026.1052.3263.14423

Supp. file 2. *Acantholabus yunlingensis* Reshchikov & Kikuchi sp. nov., paratype, ♀ (IEHBR, DLU 15117), mesosoma lateral view. https://doi.org/10.5852/ejt.2026.1052.3263.14425