

Clinopalpus hanae, a new genus and species
of ripiphorid beetle from Malaysia
(Coleoptera: Ripiphoridae: Pelecotominae)

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Abstract. A new genus and species, *Clinopalpus hanae* gen. & sp. nov. (Coleoptera: Ripiphoridae: Pelecotominae), is described from the Cameron Highlands, Malaysia. *Clinopalpus* gen. nov. is compared with all known genera of the subfamilies Pelecotominae, Hemirhipidiinae, Ptilophorinae and Micholaeminae and found to share some characters with the first two subfamilies. The genus is characterised by the following combination of characters: four-segmented maxillary palpi with palpomeres 3 and 4 enlarged, oval eyes distinctly incised anteriorly in upper half, 11-segmented antennae with antennomeres 1–3 simple and antennomeres 4–11 bearing long flattened rami anteriorly, pronotum trilobed at base, completely developed elytra, tibial spur formula 0-0-1, and tarsal claws bidentate apically.

Key words. Coleoptera, Ripiphoridae, Pelecotominae, Ptilophorinae, Hemirhipidiinae, Micholaeminae, new genus, new species, Oriental Region, Malaysia

Introduction

The subfamily Pelecotominae contains 10 described genera with more than 80 species distributed worldwide. They are characterised by having uniflabellate antennae in males and serrate or unipectinate in females, completely developed elytra and oval eyes without incision (with exception of the genera *Sharpides* Kirkaldy, 1910 and *Euctenia* Gerstaecker, 1855, see Discussion). Host associations of immature stages are known for the genera *Allocinops* Broun, 1921, *Clinops* Gerstaecker, 1855, *Pelecotoma* Fischer von Waldheim, 1809 and *Rhipistena* Sharp, 1878, and all are associated with larvae of wood-boring Coleoptera (Anobiidae and Cerambycidae) (HUDSON 1934, WATT 1983, KUSCHEL 1990, ŠVÁCHA 1994, BATELKA 2005).

When examining unidentified material of the Ripiphoridae in the collection of the Naturhistorisches Museum in Basel, I found one specimen of Pelecotominae that could not be classified in any existing genus. This specimen is described and illustrated below and compared with all genera of the subfamilies Pelecotominae, Ptilophorinae, Hemirhipidiinae and Micholaeminae, with a brief discussion on its possible affinities.

Material and methods

The figures of the holotype were taken using an Olympus Camedia C-5060 digital camera attached to an Olympus SZX9 binocular microscope. Differently focused images were combined using Helicon Focus 3.20.2.Pro software.

The holotype is deposited in the Naturhistorisches Museum, Basel, Switzerland (Michel Brancucci). Label data are cited as follows: Lines on one label are separated by a single slash (/), different labels are separated by a double slash (//). My comments appear in square brackets.

Taxonomy

Clinopalpus gen. nov.

Type species. *Clinopalpus hanae* sp. nov., here designated.

Diagnosis. Body long and slender. Head subglobular, occiput protruded shortly over apex of pronotum. Mandibulae short, strongly curved; labial palpi short; maxillary palpi long, four-segmented, with palpomeres 3 and 4 cylindrically enlarged, the last segment narrow anteriorly. Eyes large and oval, distinctly incised anteriorly in upper half. Antennae inserted in front of anterior lobes of eyes, consisting of 11 antennomeres, antennomeres 1–3 simple, antennomeres 4–11 with long, anteriorly placed, compressed rami. Pronotum trilobed at base. Elytra completely developed, covering whole abdomen, without lateral costae, rounded on apices. Legs long, slender, tibial spur formula 0-0-1, all claws bidentate apically.

Etymology. The name of the genus is derived from the Pelecotominae genus *Clinops* and the Latin noun *palpus*. The name is masculine in gender.

Clinopalpus hanae sp. nov.

(Figs. 1–2)

Type material. HOLOTYPE: ♂, MALAYSIA: 'Malaysia, Pahang, 2003 / Cameron Highlands, / Tanah Rata, 1500 – 1700 / P. Pacholátko leg. 24.–31.i. [printed label] // *Clinopalpus hanae* / gen. & sp. nov. / HOLOTYPE / Jan Batelka det. 2008 [red printed label]'

Description (male holotype). Body black, subshining, covered by short erect golden pubescence, all appendages dark brown. Head dark brown, testaceous around antennal sockets.

Head sparsely punctate. Eyes finely faceted. Antennal socket partly rimmed by a weak carina. Antennae consisting of 11 antennomeres. Antennomere 1 2.7× longer than antennomeres 2 and 3 combined, slightly curved, two times as wide at apex as at base. Antennomere 2 short, cylindrical, antennomere 3 short, triangular, widest at apex. Antennomeres 4–11 with long compressed rami, ramus of antennomere 4 about 0.8× as long as ramus of antennomere 5.

Pronotum as long as wide at base, tapering anteriorly, almost triangular, densely punctate.

Scutellar shield minute, angulate apically, almost hidden under median lobe of pronotum. Elytra parallel-sided, slightly convex dorsally at midlength, 4.8× as long as pronotum.

Legs long, slender, tibiae slightly widening apically, tarsi slender, longer than tibiae, tarsomeres cylindrical, hind tarsomere 1 as long as tarsomeres 2 and 3 combined. Claws with two distinct apical teeth, inner one shorter.

Body length. 7 mm.

Etymology. The species is dedicated to my wife Hana for her continuous patient support of my research and travelling activities and interest in my results, ideas and dreams.



Figs. 1–5. 1–2 – *Clinopalpus hanae* gen. & sp. nov.: 1 – habitus of holotype, dorsal view; 2 – detail of the head. 3–4 – *Heteromeroxylon ruficeps* Pic, 1939, male: 3 – detail of head; 4 – habitus, lateral view. 5 – *Hemirhipidius nigroapicalis* Heller, 1921, habitus of holotype, lateral view.

Table 1. Selected diagnostic characters and distribution of the Pelecotominae, Ptilophorinae, Hemirhipidiinae and Micholaeminae genera.

Genus	Tibial spurs formula	Enlarged maxillary palpi	Incised eyes	Pronotum trilobed at base	Distribution
Pelecotominae					
<i>Allocinops</i> Broun, 1921	1-2-2*	no	no	yes	New Zealand
<i>Clinopalpus</i> gen. nov.	0-0-1	yes	yes	yes	Malaysia
<i>Clinops</i> Gerstaecker, 1855	0-2-2	no	no	yes	West Palaearctic, South Africa
<i>Elytroxystrotus</i> Manfrini de Brewer, 1963	2-2-2	no	no	yes	Argentina
<i>Euctenia</i> Gerstaecker, 1855***	2-2-2	no	yes	yes	Australia
<i>Geoscopus</i> Gerstaecker, 1855	2-2-2	no	no	yes	South Africa, Sri Lanka (?)
<i>Micropelecotoides</i> Pic, 1910	2-2-2	no	no	yes	Oriental Region
<i>Pelecotoma</i> Fischer von Waldheim, 1809	1-1-1	no	no	almost	Europe, Japan, North America
<i>Rhipistena</i> Sharp, 1878	2-2-2*	no	no	yes	New Zealand
<i>Sharpides</i> Kirkaldy, 1910	2-2-2*	no	yes	yes	New Zealand
<i>Trigonodera</i> Dejean, 1834	2-2-2	no	no	yes	worldwide
Ptilophorinae					
<i>Ptilophorus</i> Dejean, 1834	2-2-2	no	yes	yes	Old World, Australia
<i>Toposcopus</i> Leconte, 1868	2-2-2	no	yes	yes	U.S.A. (Arizona, Texas, North Mexico)
Hemirhipidiinae					
<i>Hemirhipidius</i> Heller, 1921	1-1-1**	no	yes	no	Australia
<i>Heteromeroxylon</i> Pic, 1939	0-0-1*	no	yes	yes	Malaysia, Ryukyu Islands
<i>Nephrites</i> Shuckard, 1838	1-1-1**	no	yes	no	Australia, China (Lan Hsu Island), Tokama, Ryukyu Islands
<i>Sitarida</i> White, 1846	1-1-1**	no	yes	variable	Australia
Micholaeminae					
<i>Ancholaemus</i> Gerstaecker, 1855	0-1-2	yes	no	yes	Central and South America
<i>Micholaemus</i> Viana, 1971	0-1-2	yes	no	yes	Argentina

Discussion

Members of the family Ripiphoridae are currently classified in six subfamilies. The most derived subfamily seems to be the Ripidiinae, whose representatives parasitize the Blattodea and have wingless larviform females (undoubtedly an apomorphy). The subfamily currently includes also the tribe Eorhipidiini whose representatives have ‘non-riphorid’ filiform antennae in males and the placement of the Ripidiinae within the family is thus questionable for several reasons (BATELKA & HÁJEK 2009). The subfamily Ripiphorinae, whose members are parasitoids of wasps and bees (Hymenoptera: Aculeata), is well defined by a single morphological apomorphy, i.e. phoretic first instar larvae with tarsal claws replaced by an adhesive structure called ‘leaf-shaped pulvillus’ (TOMLIN & MILLER 1989: Fig. 4) or ‘inflatable lobe’ (ŠVÁCHA 1994: Fig. 54). The classification of the remaining four subfamilies (Pelecotominae, Hemirhipidiinae, Ptilophorinae and Micholaeminae) is rather problematic. They all probably belong to the basal groups of the family. Although phylogenetical analysis of this group is not available, some plesiomorphies could be proposed: unilabellate antennae in males (in all genera), fully developed elytra (with some exceptions), complete tibial spur formula 2-2-2 in many taxa (with the exception of Hemirhipidiinae, Micholaeminae and three genera of Pelecotominae; see Table 1) and, as far as known, parasitisation of xylophagous beetles with the females laying eggs directly in the wood infected by larvae of the host; non-phoretic first larval instar has been described in *Pelecotoma* (ŠVÁCHA 1994). The reduction of tibial spurs (known formulas listed in Table 1 cannot be arranged into a single series of gradual reductions) and possibly also the shortening of elytra occur independently more than once in the family, may represent a common tendency within the family. Moreover, the emarginate vs. entire eyes and serrate vs. bidentate tarsal claws may have originated repeatedly, but the plesiomorphic states cannot be proposed without a detailed analysis of the entire Tenebrionoidea. Some of the four subfamilies might even be paraphyletic.

The new genus described in this paper differs from all remaining Pelecotominae in having a 0-0-1 tibial spurs formula and enlarged maxillary palpomeres 3 and 4. Both characters are apomorphic. In addition, it can be distinguished from all Pelecotominae except the New Zealand genus *Sharpides* by the eyes distinctly incised anteriorly. *Sharpides* possesses emarginate eyes and slightly shortened elytra (features characteristic for all Hemirhipidiinae), but otherwise it is similar to two other New Zealand endemic Pelecotominae genera, *Allocinops* and *Rhipistena*, for example by the non-reduced 2-2-2 tibial spur formula and trilobed pronotal base, and does not seem to be closely related to the Australian and South-eastern Asian representatives of the Hemirhipidiinae.

* – Character that I have revised in type specimens.

** – 0-0-1 is mentioned as tibial spur formula of *Hemirhipidius* in the original description (HELLER 1921). However, RIEK (1973) who considered *Hemirhipidius* as a synonym of *Nephrites*, stated for the genera *Nephrites* and *Sitarida* that ‘hind, as well as fore and middle, tibiae with one spur (spur sometimes indistinct on fore and middle tibiae)’. The holotype of *Hemirhipidius nigroapicalis* Heller, 1921, the type species of the genus *Hemirhipidius*, lacks both middle legs but the fore tibiae possess one small spur that is bent inward and hind tibiae have one long spur that is longer and straight (Olaf Jaeger, pers. comm.).

*** – A genus of uncertain systematic position, classified in Pelecotominae by SELANDER (1957) but sharing some intermediate features with Ptilophorinae (pers. observ.).

Up to now, the Hemirhipidiinae have been characterised by emarginate eyes and abbreviated elytra in both sexes and by slightly curved tips of the flattened antennal rami and laterally compressed posterior tibiae and femora in males; a detailed, but partly outdated diagnosis of the subfamily is available in SELANDER (1957) and RIEK (1973). Some of the diagnostic characters of the Hemirhipidiinae are also present in *Clinopalpus* gen. nov.: the emarginate eyes are shared with all hemirhipidiine genera and the reduced 0-0-1 tibial spur formula with the genus *Heteromeroxylon* (BATELKA 2006). However, the Hemirhipidiinae differ from *Clinopalpus* gen. nov. by the non-enlarged maxillary palpomeres and much deeper eye incision (compare Figs. 2 and 3).

Clinopalpus gen. nov. might be an intermediate between the two subfamilies as currently accepted, sharing some, probably plesiomorphic characters of the Pelecotominae (fully developed elytra and unmodified posterior tibiae and femora) and some characters of the Hemirhipidiinae (incised eyes, reduced tibial spur formula and flattened antennal rami; at least the latter two are probably apomorphic). Moreover, as far as known, both subfamilies with the exception of the genus *Pelecotoma* are parasitoids of cerambycid larvae (HUDSON 1934, WATT 1983, TÔYAMA & HATAYAMA 1985, KUSCHEL 1990, ŠVÁCHA 1994, BATELKA 2005).

The new genus occurs together with the genus *Heteromeroxylon* in the Cameron Highlands in Malaysia.

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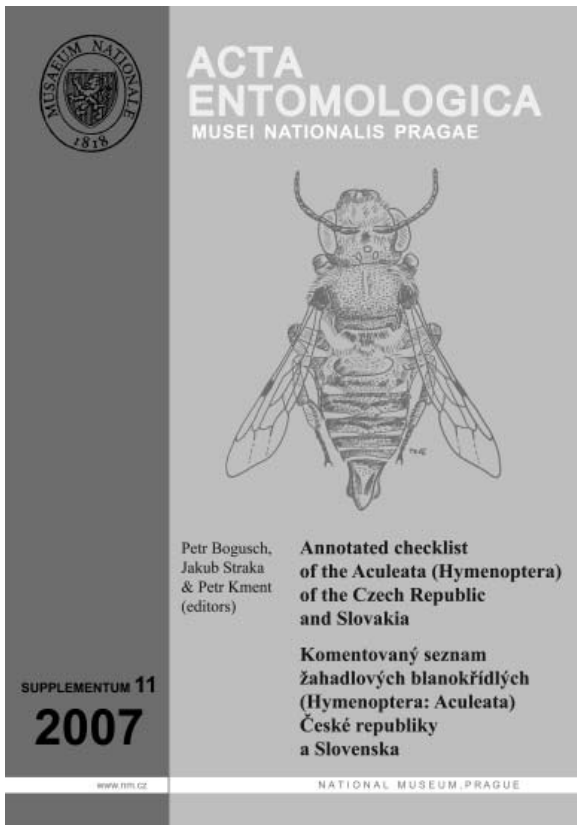
References

- BATELKA J. 2005: New synonym of the genus *Clinops* (Coleoptera: Ripiphoridae) with bionomical and distributional notes on *C. spectabilis*. *Folia Heyrovskyana, Series A* **13**: 27–34.
- BATELKA J. 2006: New synonymies in the family Ripiphoridae (Coleoptera) from Malaysia. *Folia Heyrovskyana, Series A* **13** (2005): 195–199.
- BATELKA J. & HÁJEK J. 2009: A taxonomic review of the genus *Eorhipidius* (Coleoptera: Ripiphoridae: Ripidiinae), with description of three new species from Asia. *Acta Entomologica Musei Nationalis Pragae* **49**(2): in press.
- HELLER K. M. 1921: Neue Rhipiphoriden (Coleoptera). *Tijdschrift voor Entomologie* **1920**: 168–175.
- HUDSON G. V. 1934: *New Zealand Beetles and their Larvae. An Elementary Introduction to the Study of our native Coleoptera*. Fergusson and Osborn, Wellington, 236 pp + 17 pls.
- KUSCHEL G. 1990: *Beetles in a suburban environment: a New Zealand case study. The identity and status of Coleoptera in the natural and modified habitats of Lynfield, Auckland (1974 – 1989)*. DSIR Plant Protection Report 3., 119 pp + 230 figs.

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- RIEK E. F. 1973: Rhipiphorid beetles of the subfamily Nephritinae (Coleoptera: Rhipiphoridae). *Journal of the Australian Entomological Society* **12**: 261–276.
- SELANDER R. B. 1957: The systematic position of the genus *Nephrites* and the phylogenetic relationships of the higher groups of Rhipiphoridae (Coleoptera). *Annals of the Entomological Society of America* **50**: 88–103.
- ŠVÁCHA P. 1994: Bionomics, behaviour and immature stages of *Pelecotoma fennica* (Paykull) (Coleoptera: Rhipiphoridae). *Journal of Natural History* **28**: 585–618.
- TOMLIN A. D. & MILLER J. J. 1989: Physical and behavioral factors governing the pattern and distribution of Rhipiphoridae (Coleoptera) attached to wings of Halictidae (Hymenoptera). *Annals of the Entomological Society of America* **82**: 785–791.
- TÔYAMA M. & HATAYAMA T. 1985: Occurrence of the Rhipiphorid Subfamily Hemirhipidiinae in Japan and Taiwan (Coleoptera, Rhipiphoridae). *Gekkan-Mushi* **176**: 18–24.
- WATT J. C. 1983: The huhu *Prionoplus reticularis* (Cerambycidae) and other Coleoptera in Acacia. *New Zealand Entomologist* **7**: 364–365.

Annotated checklist of the Aculeata (Hymenoptera) of the Czech Republic and Slovakia

BOGUSCH P., STRAKA J. & KMENT P. (eds.) 2007: Annotated checklist of the Aculeata (Hymenoptera) of the Czech Republic and Slovakia. Komentovaný seznam žahadlových blanokřídých (Hymenoptera: Aculeata) České republiky a Slovenska. *Acta Entomologica Musei Nationalis Pragae, Supplementum 11*: 1–300 (in English and Czech).



The volume was prepared in the collaboration of 11 authors and summarizes the contemporary knowledge on the aculeate Hymenoptera of the Czech Republic and Slovakia. The first chapter brings data on the phylogeny of the Aculeata, basic characteristics of the studied areas, and the history of the study of aculeate Hymenoptera in both the Czech Republic and Slovakia. The remaining text is divided into 12 parts based on individual taxonomic groups (usually families): Bethyliidae, Chrysididae, Dryinidae and Embolemidae, Tiphiiidae, Mutillidae, Sapygidae, Pompilidae, Formicidae, Scoliididae, Vespidae, Spheciformes, and Apiformes. All 12 chapters have a uniform structure: introduction and information sources, followed by the list of species with marked presence in the traditionally recognized geographic areas (Bohemia, Moravia, Slovakia). Comments on newly found and taxonomically

problematic species follow after the list. They contain data that were unpublished or published only after the previous checklist, clarifications of nomenclatural changes, correction of previous errors, and reasons for the exclusion of some species from the checklist. The whole checklist is bilingual, written in English and Czech.

The volume can be ordered from the Department of Entomology, National Museum, Prague, Czech Republic (irena_chalupova@nm.cz) at CZK 250 (ca. € 10) + postage.