

## Two new *Yamatosa* species (Coleoptera, Carabidae, Rhysodini) from Laos

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### Taxonomy, description, new species *Coleoptera*, *Carabidae*, *Rhysodini*, *Yamatosa*, *Laos*

**Abstract.** Two new species *Yamatosa laotina* sp. nov. and *Yamatosa haucki* sp. nov., both from Laos, are described, illustrated and compared with the congeners.

### INTRODUCTION

The genus *Yamatosa* R. T. Bell et J. R. Bell, 1979 is a genus of Rhysodini known from South-Eastern Asia and comprises fifteen known species; about half of them occur in eastern and south-eastern part of the Palaearctic Region (from Japan to western China, northern India and Pakistan, Taiwan), the rest of species is known from the Oriental Region (Thailand, Vietnam, Malay Peninsula, Greater Sunda Islands) (Bell & Bell 1978, 1979, 1985, 1987, 1989, 2002, 2009; Hovorka 2010). The purpose of the present work is to describe two new species from Laos belonging to this genus.

### MATERIAL AND METHODS

This paper is based on studying the type material of the new species described below and specimens of related species from the author's collection. The specimens included in this study are deposited in the following institutional and private collections:

NMPC Národní muzeum, Praha, Czech Republic (Jiří Hájek);

OHPC Oldřich Hovorka private collection, Praha, Czech Republic;

SMRP Středočeské muzeum v Roztokách u Prahy, Roztoky u Prahy, Czech Republic.

Measurements were made with the MBS-10 stereoscopic microscope, at magnifications of 8x, 16x and 32x. Measurements of body parts and corresponding abbreviations used in the text are as follows:

EL = elytral length - length of left elytron measured along the suture from the basal border to the apex; EW = elytral width - maximal width of both elytra combined; HL = length of the head - measured from the clypeus apex to the posterior margin of the temporal lobe; HW = width of head - maximal width of the head (including eyes); PL = pronotal length - length of the pronotum measured along mid-line; PW = pronotal width - maximal width of the pronotum; TL = total length - length measured from the apex of the left mandible (mandibles closed) to the apex of the left elytron.

The morphological terms used in this study are adopted from Bell & Bell (1978, 1979).

All type specimens of the newly described species are provided with a red printed label:

"*Yamatosa laotina* sp. nov. (or *Yamatosa haucki* sp. nov.), HOLOTYPE (or ALLOTYPE or PARATYPE), det. O. Hovorka, 2015".

## DESCRIPTIONS

***Yamatosa laotina* sp. nov.**

(Figs. 1-5)

**Type material.** Holotype (♂) labelled: "LAOS, Hua Phan prov., 20°13'N, 103°59'E, 6.-18.v.2004, Ban Saluei, Phu Phan Mt. env., J. Bezděk leg., 1300-2000 m", (NMPC).

**Description.** Habitus - the new species is medium-sized, habitually very similar to its congeners. Body colour is dark (chestnut) brown, legs and antennae are brown-red, with femora darker than tibiae, and tarsi are brown-yellow. Palpomeres are yellow. Body elongate, narrow. TL 6.1 mm. Head only very slightly shorter than wide, HL:HW 0.98. Pronotum 1.1 times wider than head, distinctly longer than wide (PL:PW 1.56). Elytra elongate, EL:EW 2.6, widest near midlength.

Head (Fig. 1) relatively short, broad, with large eyes. Antennomeres I-X with ring of apical setae and few very small, hardly visible punctures, without pollinosity. Antennomeres V-X with narrow apical ring of minute setae. Antennomere XI longer than wide, with acute apex forming minute but distinct apical stylet. Anterior tentorial pits small, but distinct. Frontal and postclypeal grooves narrow and deep, antennal groove narrow, shallow but distinct. Median lobe short, with narrowly rounded, blunt tip, and few very minute punctures on surface. Frontal space narrow, elongate, deep. Temporal lobe elongate with median margin slightly emarginate, medial angles only very slightly separated; posterior medial margin concave, so that medial angles relatively sharp, occipital angle blunt but distinct; surface with about two dozens of microscopical, very fine punctures, almost regularly distributed on whole surface; temporal seta absent. Mentum and submentum without pollinosity (Fig. 2); mentum punctured, seta-bearing punctures arranged in several irregular transverse rows. One pair of postlabial setae, numerous prelabial setae and "beard" present.

Pronotum (Fig. 1) elongate, its sides slightly convex, widest point posteriad the middle, slightly narrowed at the base, more strongly at apex. Lateral pronotal margin slightly sinuate before hind angle, both lateral setae and angular seta absent. Marginal grooves complete. Median groove with both anterior and posterior median pit only slightly developed. Basal impression elongate, discal striola reaching anterior 0.43 pronotal length. Epipleuron of pronotum, prosternite and proepisternite without punctures and pollinosity. Precoxal carina absent. Prosternal process with longitudinal median impression and terminally with deep, transverse fovea.

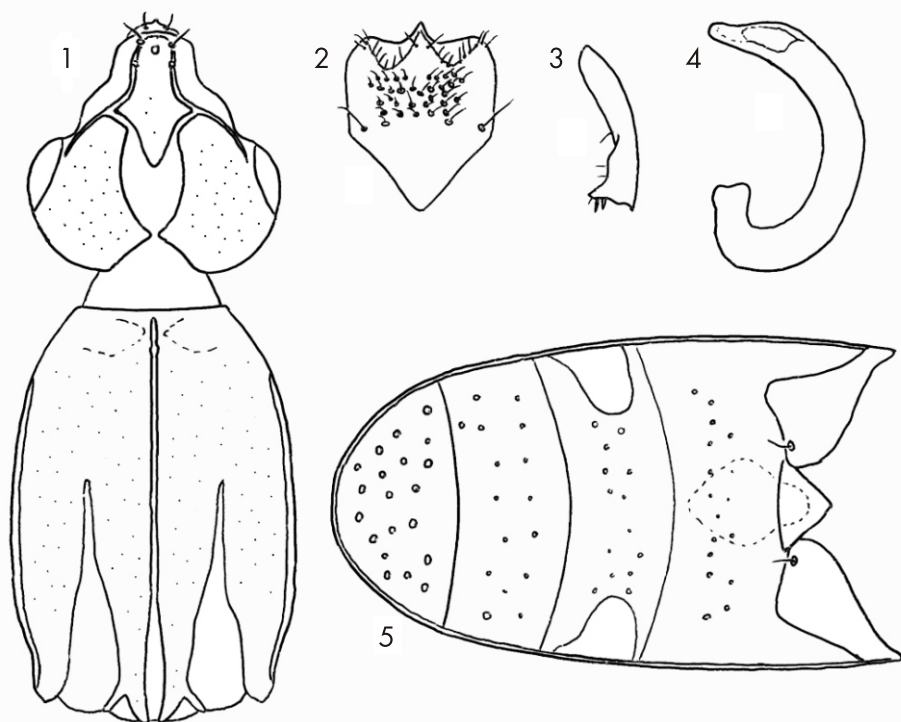
Punctures of elytral striae fine, slightly elongate in inner striae; striae II, III and V abbreviated at base; stria VI more reduced, starting near the 0.20 elytral length, stria VII near the 0.25 elytral length. Inner elytral striae deeply impressed, intervals convex. Humeral tubercle rounded, prominent. Elytral setae absent, only apical portion of elytral stria VII with row of 6-8 setae. Metasternum with irregular row of punctures along lateral margin and two punctures in anterior part of midline, in the middle with shallow longitudinal depression and fine transverse wrinkles. Abdominal sternites (Fig. 5) punctured, towards the middle punctures smaller and sparser. Abdominal sternite III with shallow central pit, abdominal sternite IV with deep lateral pits. Last visible sternite almost wholly punctured, laterally with large, pollinose punctures. Anterior femur with ventral tooth, male without modifications of anterior tibia. Hind calcar of male (Fig. 3) relatively large, its tip ± sharp. Hind tibia regularly and strongly curved, more than in any other species of *Yamatosa*. Median lobe of aedeagus as in Fig. 4.

**Differential diagnosis.** *Yamatosa laotina* sp. nov. is (together with the following species)

the first species of the genus known from Laos. The species differs from all congeners by the following combination of characters: pronotal marginal groove complete; prothoracic pleuron impunctate; discal striola of pronotum extends anteriorly 0.50 or less length of pronotum; prosternum without distinct precoxal carina; antennal segment XI with short, punctiform stylet; punctures of elytral striae I-IV elongate; hind calcar of ♂ pointed; pronotum strongly elongate (more than 1.5 times longer than wide); left paramere striate.

Most characters are shared with *Yamatosa kabakovi* R. T. Bell et J. R. Bell, 1985, *Y. niponensis* (Lewis, 1888) and *Y. phuka* R. T. Bell et J. R. Bell, 2009. *Y. kabakovi* differs from the new species by obtuse hind calcar of male and by wider and shorter frontal space, *Y. niponensis* and *Y. phuka* by rounded, not elongate elytral punctures, small hind calcar and not strongly curved hind tibia of male, *Y. niponensis* has moreover distinctly shorter pronotum in comparison with *Y. phuka*, *Y. kabakovi* and *Y. laotina*. The structure of male genitalia is also unique in *Y. laotina* sp. nov.

**Name derivation.** The species is named after the country of origin - Laos.



Figs. 1-5. *Yamatosa laotina* sp. nov.: 1- head and pronotum, dorsal view; 2- mentum and submentum; 3- posterior tibia of male; 4- median lobe of aedeagus, lateral view; 5- metasternum and abdomen. Scale bars 0.5 mm.

*Yamatosa haucki* sp. nov.

(Figs. 6-10)

**Type material.** Holotype (♂) labelled: "Laos NE, Hua Phan prov., Ban Saluei, Phu Phan Mt., 20°15'N, 104°02'E, 1500-2000 m, D. Hauck leg.; 26.iv.-11.v.2001", (OHPC). Allotype (♀): the same data as holotype, (OHPC). Paratypes: (1 ♂ 1 ♀): the same data as holotype, (SMRP, OHPC); (1 ♀) labelled: "LAOS, Hua Phan prov., 20°13'N, 103°59'E, 6.-18.v.2004, Ban Saluei, Phu Phan Mt. env., J. Bezděk leg., 1300-2000 m", "coll. general National Museum Prague, Czech Republic", (NMPC); (1 ♂ 1 ♀): "NE LAOS, Hua Phan Prov., Mt. Phu Phane, 900-1600 m, 10.-21.vi.2010, 20°12'N, 103°59'E, St. Ják and Lao collectors lgt.", (OHPC).

**Description.** Habitus - the new species is medium-sized, TL 5.7-6.3 mm in males, 5.2-6.6 mm in females. Body colour is dark brown to brown-red, legs and antennae are brown-red, with femora darker than tibiae, and tarsi are brown-yellow. Palpomeres are yellow. Body elongate, narrow. Head slightly longer than wide, HL:HW 1.04-1.11. Pronotum 1.19-1.24 times wider than head, distinctly longer than wide (PL:PW 1.33-1.38). Elytra elongate, EL:EW 2.28-2.36, widest near the midlength.

Head (Fig. 6) relatively short, wide, with large eyes. Antennomeres I-X with ring of large apical setae and few very small, hardly visible punctures, without pollinosity. Antennomeres V-X with narrow apical ring of minute setae. Antennomere XI longer than wide, with blunt, rounded apex, without apical stylet. Anterior tentorial pits small, but deep and distinct. Frontal and postclypeal grooves narrow and deep, antennal groove narrow, shallow, but distinct. Median lobe long, lanceolate, with rounded blunt tip, and few extremely minute punctures on surface. Frontal space relatively wide, heart-shaped, deep. Temporal lobe longer than wide with median margin strongly emarginate, medial angles only very slightly separated or touching; posterior medial margin straight or slightly concave, so that medial angles relatively sharp, occipital angle blunt but distinct; surface with about two dozens of microscopical, very fine punctures, almost regularly distributed on whole surface; temporal seta absent. Mentum and submentum without pollinosity (Fig. 7); mentum flat, depressed along midline, with few punctures medially. One pair of postlabial setae (omitted on Fig. 7) and 2-3 pairs of prelabial setae present.

Pronotum (Fig. 6) elongate, its sides slightly convex, widest point a little posteriad the middle, slightly narrowed at base, more strongly at apex. Lateral pronotal margin distinctly sinuate before hind angle, both lateral setae and angular seta absent. Marginal grooves absent. Median groove with anterior median pit only slightly developed, posterior median pit elongate, narrow. Basal impression elongate, discal striola short, not reaching pronotal midlength. Epipleuron of pronotum, prosternite and proepisternite without punctures and pollinosity. Precoxal carina absent. Prosternal process with longitudinal median impression and terminally with deep, transverse fovea.

Punctures of elytral striae fine, slightly elongate in inner striae; striae II, III and V somewhat abbreviated at base; stria VI more reduced, starting near the 0.15 elytral length, stria VII near 0.20 elytral length. Inner elytral striae deep, intervals convex. Humeral tubercle rounded, prominent. Elytral setae reduced, only one seta in fifth interval near end of stria IV present and apical portion of elytral stria VII with row of 5-6 setae. Metasternum with ± regular row of 8-9 punctures along lateral margin, in the middle with shallow longitudinal depression and fine transverse wrinkles. Abdominal sternites (Fig. 10) punctured, towards the middle punctures smaller and sparser or absent. Abdominal sternite III with only few punctures or smooth. Abdominal sternite IV with deep lateral pits, the largest, most lateral puncture in another, smaller and more shallow fovea; transverse row of punctures in the middle more or less distinctly interrupted. Last visible sternite almost wholly punctured, laterally with larger, pollinose punctures.

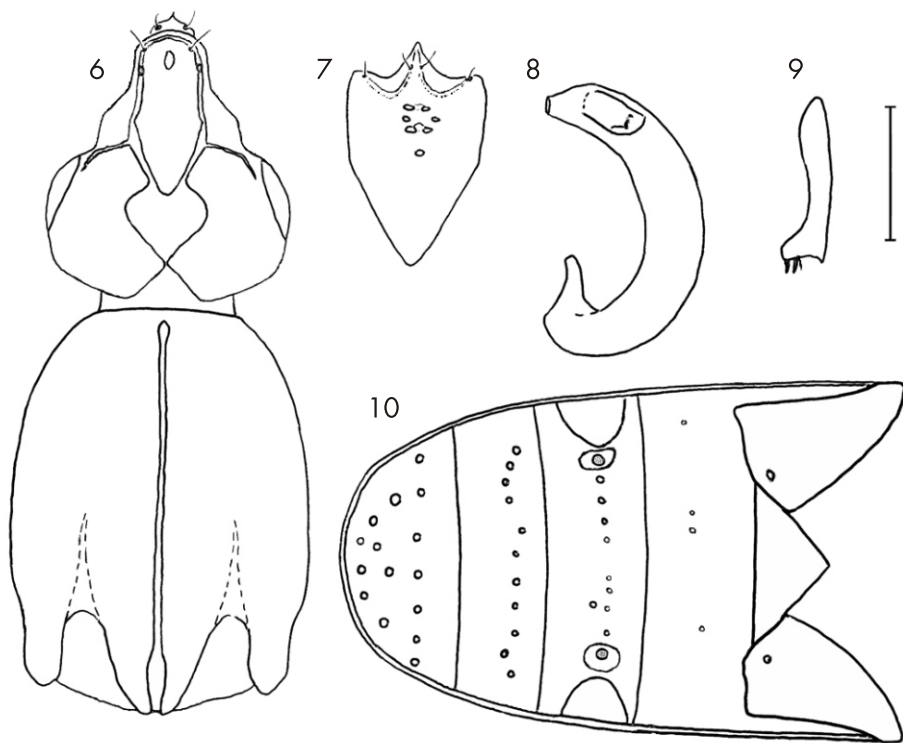
Anterior femur without ventral tooth, male without modifications of anterior tibia. Hind calcar of male (Fig. 9) relatively large, its tip rounded. Hind tibia almost straight. Median lobe of aedeagus as in Fig. 8.

**Sexual dimorphism.** The only found external morphological difference between both sexes is the absence of the metatibial spur in female.

**Differential diagnosis.** *Yamatosa haucki* sp. nov. differs from all the congeners by the following combination of characters: pronotal marginal groove absent; ultimate antennomere apically rounded; discal pronotal striola short, ending after the middle of the pronotum.

There are only three species of *Yamatosa* with reduced or absent marginal groove - *Y. reitteri* (R. T. Bell, 1977), *Y. schawalleri* R. T. Bell & J. R. Bell, 2002 and *Y. sinensis* R. T. Bell et J. R. Bell, 1987. The only species with the pronotal marginal groove absent is last named. *Y. sinensis* differs from *Y. haucki* sp. nov. by larger size (over 7 mm), by its terminal antennomere with a tip obtuse but not rounded, by longer discal pronotal striola, by the absence of discal elytral setae, by more abundant abdominal punctation etc. The species are, on the other hand, similar in some aspects, like the shape of the median lobe and frontal space, or the shape of the tibial calcar in male, and are probably closely related.

**Name derivation.** The species is named in honour of David Hauck, collector of the large part of type series of the new species.



Figs. 6-10: *Yamatosa haucki* sp. nov.: 6- head and pronotum, dorsal view; 7- mentum and submentum; 8- median lobe of aedeagus, lateral view; 9- posterior tibia of male; 10- metasternum and abdomen. Scale bars 0.5 mm.

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