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Three new Oriental species of *Hesperus* FAUVEL (Coleoptera: Staphylinidae)

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Abstract

Three new species of *Hesperus* FAUVEL, 1874 (Coleoptera: Staphylinidae: Staphylininae) are described from South-east Asia: *Hesperus kovaci* (W-Malaysia), *H. temburong* (E-Malaysia) and *H. wemmeri* (Myanmar). The aedeagi of all new species, and of *H. malayanus* CAMERON are illustrated. A habitus illustration of *H. wemmeri* as well as photographs of *H. kovaci* in its natural environment are provided. The bionomics of *H. kovaci* are described in detail.

Key words: Coleoptera, Staphylinidae, Staphylininae, Staphylinini, Philonthina, *Hesperus*, new species, taxonomy, systematics, bionomics.

Introduction

The genus *Hesperus* FAUVEL, 1874 is distributed worldwide with the major bulk of species described from the Oriental Region and the island of New Guinea. Currently, this genus is a dumping ground for species matching a particular set of characters which can hardly suffice to justify a monogeneric treatment. At the moment it is certainly better to stick to this concept; the splitting of this genus should be carried out only within a revision covering at least the Palearctic and Oriental realms.

The new species described below belong to two different species groups. *Hesperus kovaci* sp.n., which we owe to the marvellous field studies of Damir Kovac on the fauna associated with Oriental species of bamboo (see e.g. KOVAC 1994), cannot be placed near any of the known Asian species at the moment. The remaining two new species belong to a well delimited species group, hitherto known only from the Sunda region and from Myanmar, including *H. borneensis* BERNHAUER, 1915, *H. birmanus* CAMERON, 1932, *H. malayanus* CAMERON, 1932a, and *H. javanus* CAMERON, 1937. The group is characterized by the subserrate antennae with asymmetrically extended segments 5 – 10, and by the large number of peg-setae fringing the lateral margin of the apical portion of the paramere.

Acknowledgement and abbreviations

The material treated in this paper is deposited in the Naturhistorisches Museum, Wien (NMW), the Senckenberg Museum, Frankfurt (SMF) and the Biodiversity Museum of the Forest Department at Hlawga Park, Yangon (MBM). I thank Damir Kovac (SMF) for providing the fotographs and the highly interesting "bamboo beetles". I am indebted to Aleš Smetana for reviewing the manuscript. My particular gratitude goes to Christen Wemmer for his overall mental and diplomatic support in my Myanmar endeavours. In addition, I am greatful to W. Zelenka for the habitus painting of *H. wemmeri*.

Fig. 1: Habitat of *Hesperus kovaci*; exposed phytotelma of bamboo [Foto: D. Kovac].

Fig. 2: *Hesperus kovaci* in typical hunting position [Foto: D. Kovac].

Fig. 3: *Hesperus kovaci* has caught a culicid larva [Foto: D. Kovac].

Hesperus kovaci sp.n.

Holotype ♂: "W-MALAYSIA: Ulu Gombak, FSC, 21.8.1995, leg. D. Kovac (6/63) \ Photo A 30" (SMF).

Paratypes (5 exs.): 1 ♂: "W-MALAYSIA: Ulu Gombak FSC, 6.7.91, leg. D. Kovac (27) \ caught Nitidulidae larva" (SMF); 1 ♀: "W-MALAYSIA: Ulu Gombak FSC, 21.8.1995, leg. D. Kovac (70)" (NMW); 1 ♂: "W-MALAYSIA: Ulu Gombak, FSC, 24.8.1995, leg. D. Kovac, (6/72) \ Photo A37" (NMW); 1 ♀: "W-MALAYSIA: Ulu Gombak FSC, 18.9.1995, leg. D. Kovac (6/53) \ Photo A 16" (SMF); 1 ♂: "W-MALAYSIA: Ulu Gombak FSC, 13.8.1998, leg. D. Kovac \ Photo B 27" (NMW).

DESCRIPTION: 14.0 – 16.5 mm long (6.5 – 8.2 mm, abdomen excluded). – Body entirely bright reddish-yellow to reddish in live specimens (dead specimens usually a bit darker), elytra slightly paler; abdominal segment VII with variably broad, transverse, black, iridescent band, front margin of segment narrowly reddish, posterior margin slightly broader yellowish; antennal segments 1 and 2 reddish-testaceous, segments 3 – 8 black with very narrow reddish base (except segment 3 with basal third reddish), segments 9 – 11 pale creamy yellow; mandibles reddish-brown with blackish medial margin; legs pale reddish-yellow.

Head rounded quadrangular to trapezoid, 1.11 – 1.23 times as wide as long; eyes usually slightly protruding (except in very large specimens), of rather constant length, tempora subparallel to distinctly convergent, length directly proportional to body length (eyes : tempora = 0.76 – 1.20 : 1 in males, 1.32 – 1.34 : 1 in females); surface of head densely punctate, in addition to long black macro-setae with variable number of longer black and shorter yellow setae; with impunctate midline, broad on vertex, narrow behind large and flat antennal grooves; tempora densely punctate and pubescent with fine yellow setae; antennae with segments 4 – 6 distinctly, segments 7 and 8 less distinctly oblong, segments 9 and 10 inconspicuously oblong, segments 4 – 10 slightly depressed; pronotum strongly transversely convex, about as wide as head, 1.06 – 1.09 times as long as wide, widest close to large lateral seta, sides narrowed toward base in long concave arc; hind angles rounded but well marked; disc of pronotum finely, moderately densely punctate, with impunctate midline, punctation slightly denser close to midline than sublaterally,

with very fine and dense golden-yellow pubescence along lateral margin and on a large triangular area at front angle; scutellum finely and densely punctate, with golden-yellow pubescence; elytra much wider than pronotum, slightly wider than head, densely punctate and pubescent, pubescence golden-yellow, becoming exceedingly fine and dense at base of elytra, very base of elytra impunctate, shiny; sides of elytra with very long humeral, subhumeral and lateral macro-seta, with numerous additional black setae of variable length; base of elytra with row of 3 – 4 long black setae between humeral and scutellar seta; first one or two visible tergites with two basal lines (that on second visible tergite often incomplete or lacking), elevated area between basal lines with variable punctation, usually impunctate on first visible tergite, sparingly punctate on second visible tergite – holotype (very large male) with a few punctures on first visible tergite; with numerous large punctures between first basal line and rudimentary second basal line; remaining portion of tergites with moderately dense and rather coarse punctation, becoming less dense and much finer toward posterior margin; from third visible tergite to apex of abdomen with increasing number of larger, black macro-setae, usually arranged in transverse line at about midlength of tergite; posterior margins of first four visible tergites with long, alternating black and yellow setae; posterior margin of tergite VII with whitish seam of palisade fringe; male sternite VIII with moderately deep medio-apical emargination, without semi-membranous extension, posterior margin with dense row of long setae, disc and sides with numerous macro-setae; male sternite IX with asymmetrical basal portion, apex deeply emarginate, each lobe with one long terminal seta.

Aedeagus (Fig. 5) with very long, rod-like median lobe, apex moderately sharply pointed; paramere exceedingly long, parallel-sided, face adjacent to median lobe without peg-setae.

DIAGNOSIS: Among the species from the Asian mainland, *H. kovaci* is outstanding because of its almost entirely reddish colouration.

DISTRIBUTION: The species is at present known only from the type locality in Peninsular Malaysia.

BIONOMICS (Kovac, pers. comm.): All specimens of this new species have been collected from phytotelmata of rather young and soft bamboo shoots, where they preferably hunt for larvae of Culicidae. However, unlike some other staphylinids (e.g. *Hesperomimus* CAMERON), neither adults nor larval stages of *H. kovaci* have ever been observed in closed internodes. The bamboo shoots have been cut near the ground (Fig. 1), exposing the phytotelma and thus attracting the species. The specialization on this kind of food is evident by the fact that *H. kovaci* has never been observed at older bamboos, the phytotelmata of which being much lower in nutrient contents and thus very poor in culicid larvae.

The insect lurks head downwards above the water surface (Figs. 2, 3), mandibles wide open (like a trap-jaw), their tips slightly dipped into the water and the antennae bent backwards. Being seldom successful in hunting from the water surface, *H. kovaci* has been repeatedly observed to venture into the water hunting actively for mosquito larvae. This species may therefore be regarded as Facultative Water Beetle sensu JÄCH (1998).

ETYMOLOGY: The species is named in honor of its collector Damir Kovac. His close-focussed studies on the internodal fauna of Asian bamboo species have already revealed a fair number of novelties, including some staggering insights into the behaviour and ecology of these specialized life forms.

Hesperus temburong sp.n.

Holotype ♂: "BORNEO, Brunei; Temburong, Kuala Belalong, KBFSC; 11.III.1995, leg. Borcherding" (NMW).

DESCRIPTION: 14.0 mm long (6.4 mm, abdomen excluded). – Head including furrow of neck black; pronotum orange-red; each elytron with broad, transverse black band, narrowly extending anteriad medially along scutellum, but not reaching basal depression; posterior margin broadly pale yellow, extending anteriad along dark reddish-brown suture; with large, triangular pale yellow humeral spot, merged with yellow posterior margin laterally; basal depression of elytra reddish-testaceous; scutellum reddish-testaceous; first four visible abdominal segments reddish-testaceous with reddish-yellow posterior margins, segments VII and VIII black with very narrow reddish base, styli of tergite IX and entire tergite X pale yellowish; mandibles reddish-brown, palpi pale yellowish basally, becoming darker reddish apically; segment 1 of antennae pale yellowish, segments 2 and 3 reddish, the latter with blackish distal quarter, segments 4 – 9 black, segment 10 dark reddish-brown with blackish hue, segment 11 pale creamy yellow; legs pale yellow, segment 5 of tarsi reddish.

Head slightly trapezoid, strongly transverse (ratio 1.66); eyes large, weakly prominent, slightly shifted toward dorsal surface of head apically, 1.27 times as long as tempora; tempora broadly rounded, slightly convergent behind eyes; punctation rather sparse, punctural sockets sunk into rather deep, almost pit-like grooves, setae very long, erect or semi-erect, black to dark grey; disc broadly impunctate along midline, tempora with a few shorter golden setae; mandibles exceedingly long, sickle-shaped; antennae with segment 1 much longer than segments 2 and 3 combined, segment 4 slightly oblong, segment 5 about as long as wide, remaining segments becoming increasingly broader and more asymmetrical, almost serrate, segment 11 oblong; pronotum slightly wider than long (ratio 1.04), widest between front angles and large lateral seta, narrowed toward base in almost straight line, with inconspicuous sinuation at about midlength, lateral margin regularly convexly confluent with base; punctation and setation as on head but grooves slightly less deep, surface also with broad impunctate midline; elytra at posterior margin about as wide as pronotum, only slightly widened posteriorly, carinate laterally, carina occupying approximately posterior half of elytral length; suture distinctly elevated; punctation moderately dense, punctures separated by about 4 – 5 puncture diameters in transverse direction, setae rather long, erect, black; deflexed portions of elytra with countless long and stout setae, almost as long as large subhumeral seta; lateral and posterior margins with dense row of shorter (lateral margin) or longer (posterior margin) golden setae; scutellum with large number of densely packed fossulate punctures, concentrated medially, bearing moderately long golden setae; first three visible abdominal tergites with two basal lines, elevated area between basal lines with two groups of a few admedian punctures on first visible tergite with conspicuous but irregular transverse row of about 20 punctures on second and third visible tergites; second basal line on first visible tergite bending apicad before reaching spiracle and vanishing at about half length of tergite; second basal lines of second and third visible tergites more or less straight, reaching spiracle; remaining portions of first four visible tergites sparsely punctate, punctation somewhat denser basally, apically and at midlength, basal punctures much finer than remaining ones; tergites VII and VIII with almost uniform punctation, punctures forming longitudinal grooves on tergite VII; male tergite X entire, with a pair of long dark apical setae.

Aedeagus (Fig. 7) with flame-shaped median lobe and paramere, both with rather sharply pointed apex; paramere (Fig. 10) with dense row of numerous peg-setae fringing margin of apical portion.

DIAGNOSIS: The species is almost identical with *H. malayanus* in coloration and body shape, but differs by less convergent tempora, wider pronotum (1.02 – 1.04 times as long as wide in *H. malayanus*), denser and coarser punctation of scutellum. Aedeagus similar to that of *H.*

malayanus (Figs. 6, 9) but longer and with slenderer median lobe; paramere more distinctly dilated subapically. There are also slight differences in the morphometry of head, eyes and tempora; however, these largely depend on body size and cannot be interpreted from such limited material.

DISTRIBUTION: At present the species is known only from the type locality in Brunei (Borneo).

ETYMOLOGY: The specific epithet is the name of the type locality in apposition.

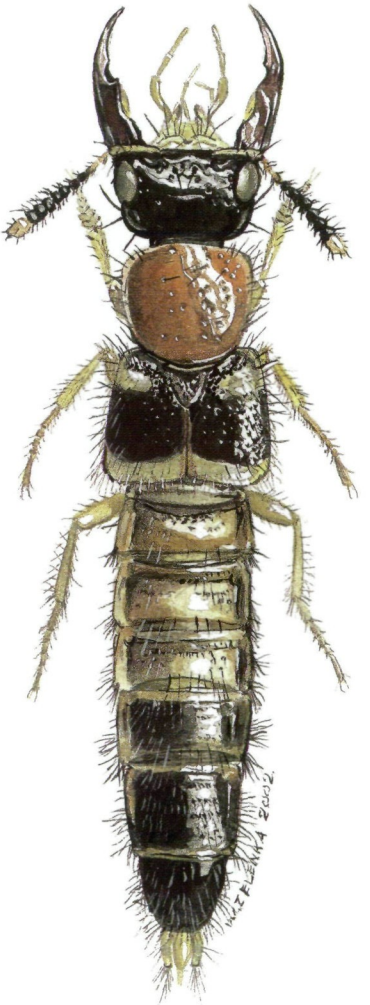


Fig. 4: Habitus of *Hesperus wemmeri*.

Hesperus wemmeri sp.n.

Holotype ♂: "MYANMAR: Sagaing Division, Chatthin Wildlife Sanctuary, ca. 200 m, 5. – 17.10.1998, F.I.T., leg. Schillhammer (3)" (NMW).

Paratypes (5 exs.): 3 ♂♂, 1 ♀: same data as holotype (NMW, 1 ♂ MBM); 1 ♀: "MYANMAR: Sagaing Division, Chatthin Wildlife Sanctuary, 23°33.017'N 95°34.851'E, Kinsan Camp, 210 m, 13.10.1998, leg. Schillhammer (13)" (NMW).

DIAGNOSIS: Habitus Fig. 4. - The species is so similar to *H. malayanus* and *H. temburong*, that a detailed description is not necessary. From both these species, *H. wemmeri* differs by the coloration of the elytra and the abdomen: black portion of elytra more extensive at base, occupying almost entire basal depression, black and yellow colour more sharply delimited against each other laterally; fourth visible segment of abdomen with broad, transverse black band, reaching basal line anteriorly or leaving only very narrow reddish portion between basal line and black portion, posterior margin more broadly yellowish. In addition, it differs from both by the slightly (compared to *H. temburong*) or distinctly (compared to *H. malayanus*) broader pronotum. Measurements: 11.2 – 13.5 mm long (5.0 – 6.0 mm, abdomen excluded); head 1.73 – 1.85 (large males) or 1.47 – 1.60 (small male and females) times as wide as long; eyes : tempora = 1.00 – 1.17 : 1 (large males), 1.26 : 1 (small male), 1.50 – 1.62 : 1; pronotum: length : width = 1.06 – 1.09 : 1 (large males), 0.97 – 1.01 : 1 (small male and females).

Aedeagus (Fig. 8) similar to that of *H. malayanus* (Figs. 6, 9), but with slenderer and more acutely pointed apical portion of median lobe; paramere (Fig. 11) slenderer, apex more obtusely pointed, peg setae more irregularly arranged toward base.

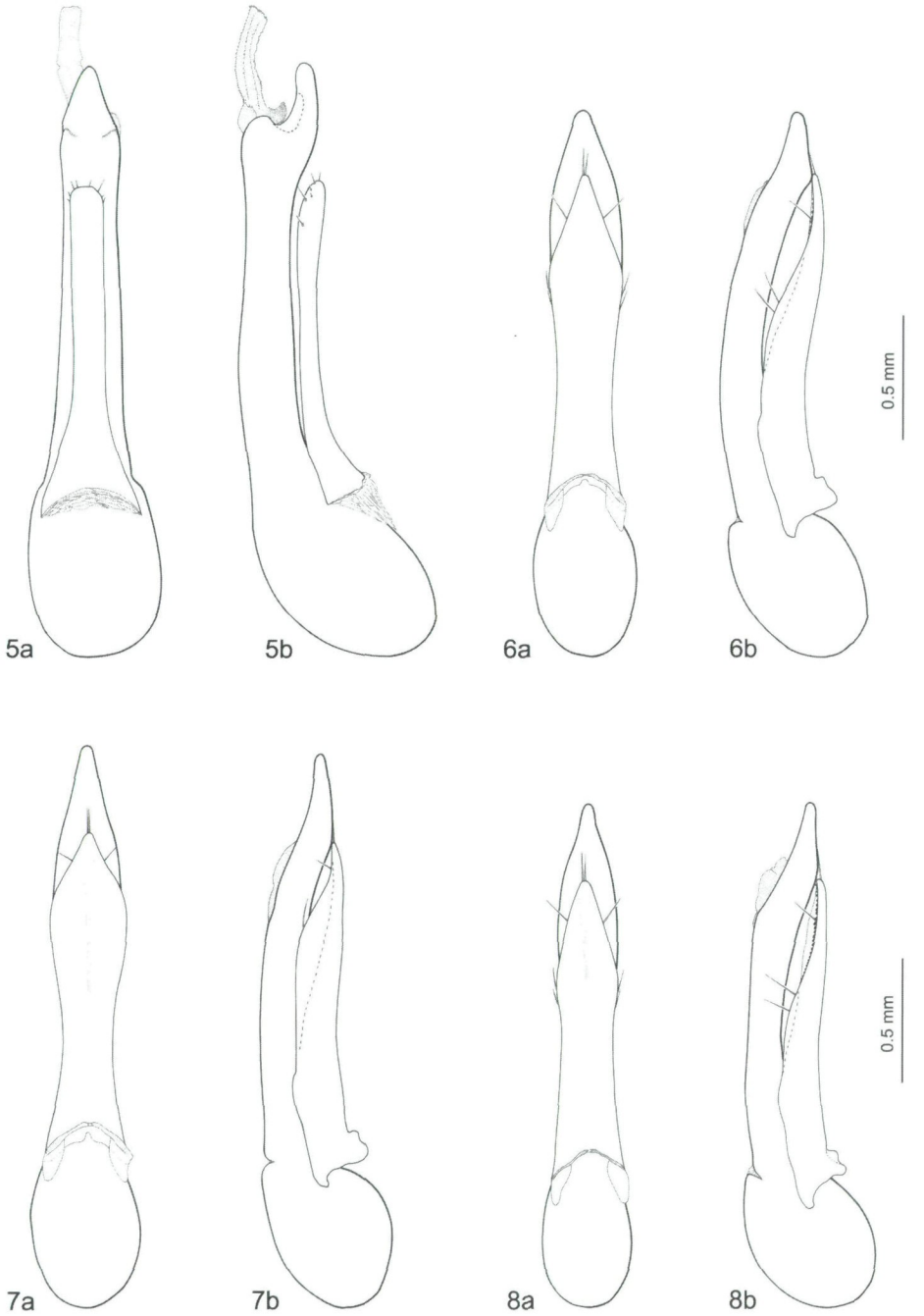
DISTRIBUTION: The species is at present known only from the type locality in Upper Myanmar. A single female from further north (Kachin State: Indawgyi Lake) might also belong to this species, but differs too considerably to be included in the type series.

BIONOMICS: The type locality is an Indaing (*Dipterocarpus tuberculatus*) forest in the Upper Dry Zone of Myanmar. The specimens were caught by using a flight interception trap set up in a moister portion of the forest along a dried up creek, with denser and more verdant undergrowth.

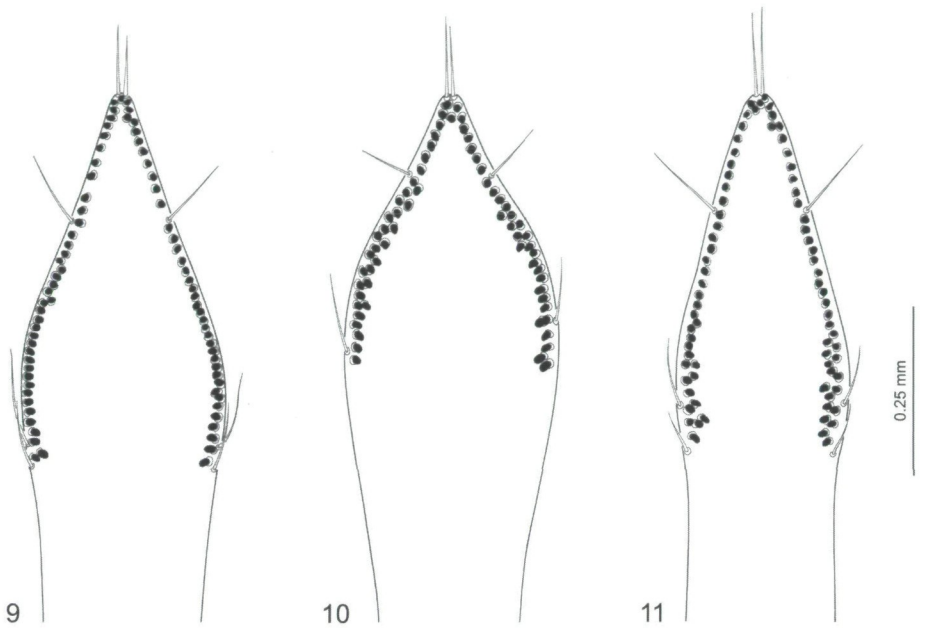
ETYMOLOGY: I am glad to dedicate this species to Christen Wemmer, Associate Director of the Conservation and Research Centre of the Smithsonian Institution (Front Royal, Virginia, USA), a deer specialist and one of the main promotors of conservation work in Myanmar. By inviting me to teach local people during the "Arthropod Inventory Course" in 1998 he gave the initial spark for my research and training work in this country of enchanting people and enthralling nature.

Zusammenfassung

Drei neue Arten der Gattung *Hesperus* FAUVEL, 1874 werden aus Südost-Asien beschrieben: *Hesperus kovaci* (W-Malaysia), *H. temburong* (O-Malaysia) und *H. wemmeri* (Myanmar). Die Aedoeagi aller neuen Arten und von *H. malayanus* CAMERON, sowie der Habitus von *H. wemmeri* werden abgebildet. Die Lebensweise von *H. kovaci* wird beschrieben. Farbfotos zeigen die Art in ihrem Lebensraum.



Figs. 5 - 8: Aedeagi of 5) *Hesperus kovaci*, 6) *H. malayanus*, 7) *H. temburong*, 8) *H. wemmeri*. - a) ventral view, b) lateral view.



Figs. 9 - 11: Parameres of 9) *Hesperus malayanus*, 10) *H. temburong*, 11) *H. wemmeri*.

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