

Linzer biol. Beitr.	47/2	1209-1216	30.12.2015
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## **A revision of the Habrocerinae of the world. VI. The first records of the subfamily from Vietnam (Coleoptera: Staphylinidae)**

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**A b s t r a c t :** *Habrocerus wunderlei* nov.sp. (North Vietnam: environs of Sa Pa) is described, illustrated, and distinguished from other species of the *H. schwarzi* group. Additional records of two species are reported from North Vietnam and Thailand. The subfamily Habrocerinae is reported from Vietnam for the first time. *Habrocerus* ERICHSON, 1839 is now represented by 18 and the Habrocerinae by 24 named species worldwide. A revised and updated world catalogue of subfamily is provided.

**K e y w o r d s :** Coleoptera, Staphylinidae, Habrocerinae, *Habrocerus*, Oriental region, Vietnam, Thailand, taxonomy, new species, new records, world catalogue.

### **Introduction**

The small subfamily Habrocerinae previously included 23 species worldwide, 17 of them in the genus *Habrocerus* ERICHSON, 1839. *Habrocerus* is represented by three species groups, the *H. capillaricornis* group, which comprises six species and whose native distribution is confined to the Palaearctic region, the *H. rougemonti* group (three species, one in the southern East Palaearctic and two in Thailand), and the *H. schwarzi* group, which is distributed in the East Palaearctic, Oriental, Nearctic, and Neotropical regions (ASSING 2014; ASSING & WUNDERLE 1995). The subfamily was previously unknown from Vietnam. An updated catalogue of the Habrocerinae of the world was provided by ASSING (2014), but the *Habrocerus rougemonti* group was confounded with the *H. capillaricornis* group, which is why a revised catalogue is presented in this paper.

Since the latest contribution (ASSING 2014), additional material of *Habrocerus* has been examined from Vietnam and Thailand, including one undescribed species and the first records of the subfamily from Vietnam.

### **Material and methods**

The material treated in this study is deposited in the following collections:

cAss..... Author's private collection

cWun.....Private collection Paul Wunderle, Mönchengladbach

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The image of the forebody was created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software. The photographs of other body parts were taken with a digital camera (Nikon Coolpix 995).

Body length was measured from the mandibles to the posterior margin of abdominal tergite VII, the length of the forebody from the mandibles to the posterior margin of the elytra. The terminology of morphological characters follows ASSING & WUNDERLE (1995); for an illustration of the terminology used for the male secondary sexual characters see figure 2 in ASSING & WUNDERLE (1995).

### Description and additional records

#### *Habrocerus wunderlei* nov.sp. (Figs 1-12)

**Type material:** Holotype ♂: "N-Vietnam - pass 8 km NW Sa Pa, 22°21'10"N, 103°46'01"E, 2010 m, second. forest, 12.VIII.2013, Wunderle [7b+2] / Holotypus ♂ *Habrocerus wunderlei* sp.n. det. V. Assing 2015" (cAss). Paratypes: 1 ♀ [teneral]: same data a holotype (cWun); 1 ♀: "N-Vietnam - 6 km NW Sa Pa, 22°21'39"N, 103°47'19"E, 1810 m, pasture margin, 7.VIII.2013, Wunderle [8+2]" (cWun); 2 ♀ ♀: "N-Vietnam - pass 8 km NW Sa Pa, 22°21'13"N, 103°46'01"E, 2030 m, forest margin, 9.VIII.2013, V. Assing [10+2]" (cAss).

**Etymology:** This species is dedicated to my long-time field companion Paul Wunderle (Mönchengladbach), who collected the holotype.

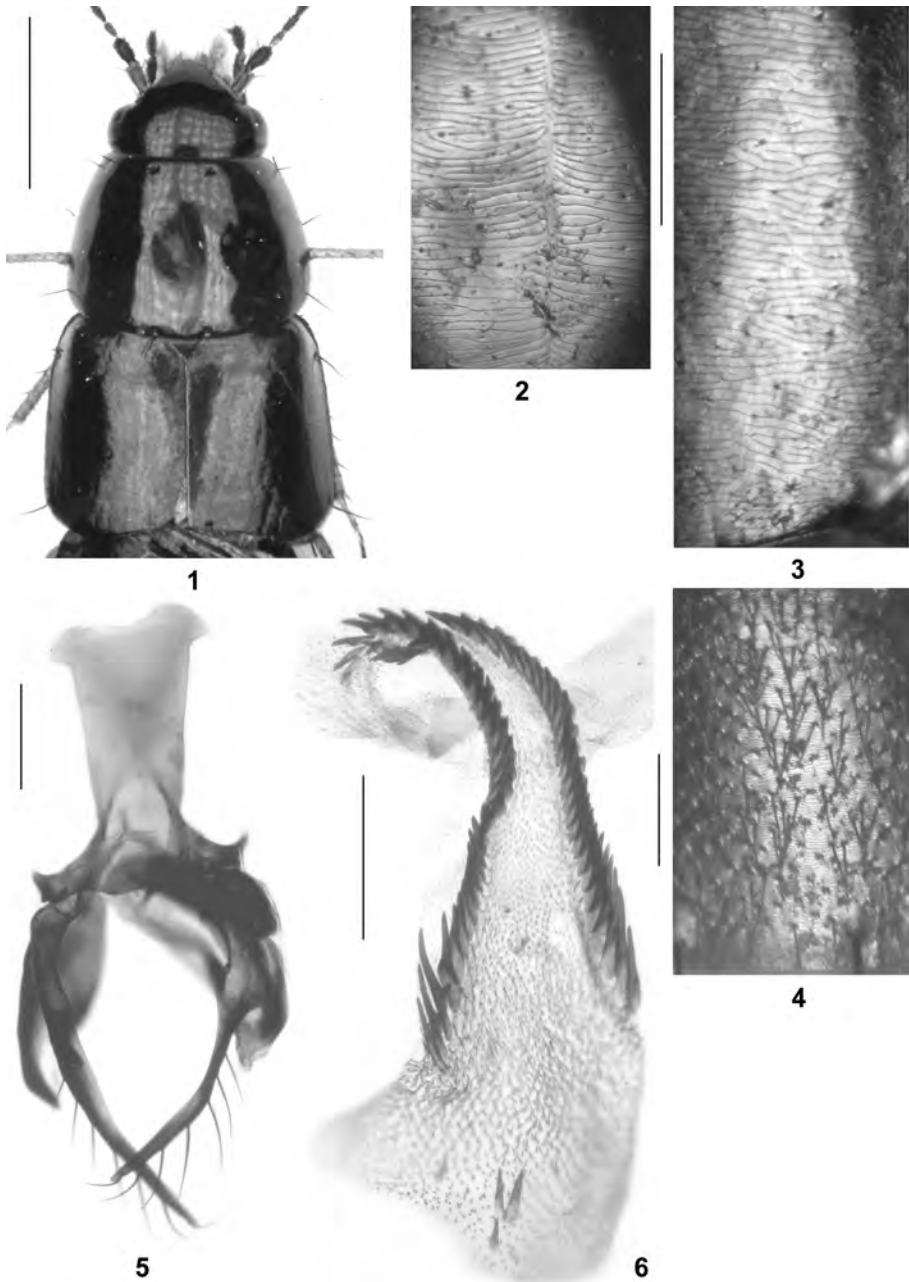
**Description:** Body length 3.5-4.2 mm; length of forebody 1.8-2.1 mm. Coloration: body black; legs dark-yellowish; antennae and maxillary palpi blackish.

Whole forebody with shallow, but distinct microsculpture composed of transverse striae (Figs 2-3). Pronotum (Fig. 1) 1.35-1.40 times as broad as long and approximately 1.5 times as broad as head; lateral margins each with three long black setae: one in anterior angle, one in posterior angle, and one approximately in the middle. Elytra (Fig. 1) 0.88-0.95 times as long as pronotum. Hind wings fully developed.

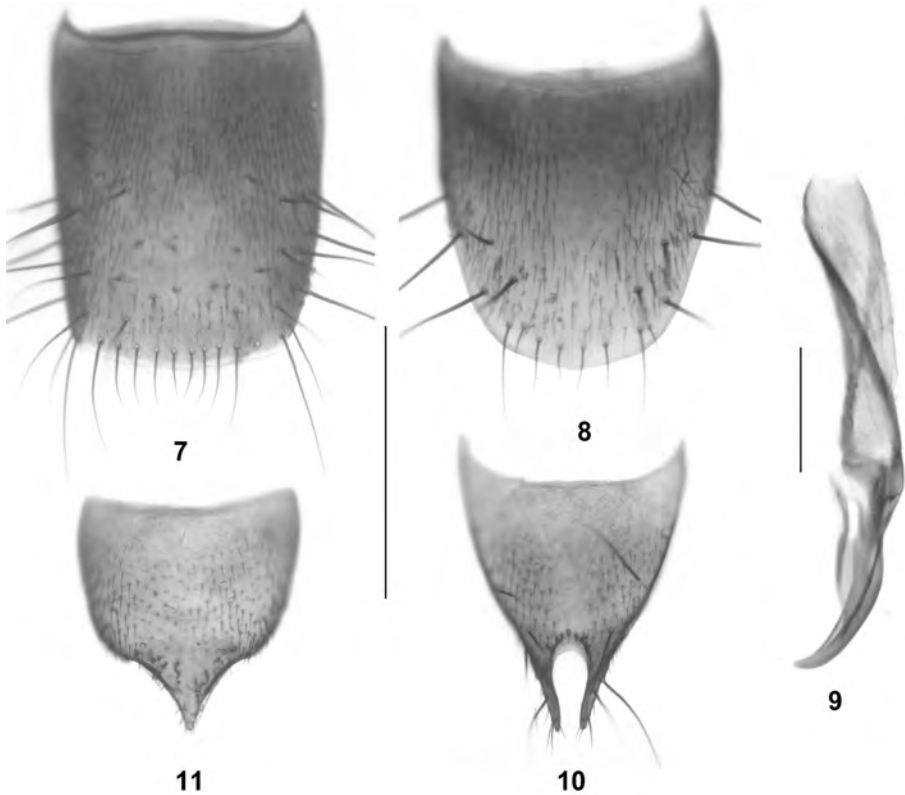
Abdomen with very dense and fine punctation, with short fine pubescence, and with very dense and fine transverse microsculpture (Fig. 4); posterior margin of tergite VII with palisade fringe.

♂: tergite VII (Fig. 7) and sternite VII (Fig. 8) with convex posterior margins; sternite VIII (Fig. 5) asymmetric; appendices of pleurites VIII long and slender, each with seven setae (Fig. 5); sclerites of segment IX distinctly asymmetric and of different lengths (Fig. 9); aedeagus (Fig. 6) with two series of numerous spines of different lengths and with three additional spines.

♀: tergite VIII (Fig. 10) posteriorly with a pair of long spine-shaped processes; sternite VIII (Fig. 11) with posterior margin acutely projecting in the middle.



**Figs 1-6:** *Habrocerus wunderlei* nov.sp.: (1) forebody of holotype; (2) median portion of pronotum; (3) sutural portion of left elytron; (4) median portion of tergite VI; (5) male sternite VIII and pleurites VIII in ventral view; (6) aedeagus in squeeze preparation. Scale bars: 1: 1.0 mm; 2-3, 5-6: 0.2 mm; 4: 0.1 mm.



**Figs 7-11:** *Habrocerus wunderlei* nov.sp.: (7) male tergite VII; (8) male sternite VII; (9) male segment IX in lateral view; (10) female tergite VIII; (11) female sternite VIII. Scale bars: 7-8, 10-11: 0.5 mm; 9: 0.2 mm.

**Comparative notes:** Based on the external (position of the antero-lateral setae of the pronotum; pronotum with pronounced microsculpture) and the modifications of the male sexual characters (genital sclerites asymmetric; anterior margin of sternite VIII anteriorly without median emargination and antero-laterally with distinct processes; appendices of pleurites VIII with more than two setae), *H. wunderlei* belongs to the *H. schwarzi* group. For characters constituting this group and a key distinguishing it from other species groups see ASSING & WUNDERLE (1995). The new species is distinguished from all the species of the *H. schwarzi* group by the shapes of the male genital sclerites, by the internal structures of the aedeagus, and by the conspicuous modifications of the female tergite and sternite VIII. Note, however, that the female secondary sexual characters of *H. schuelkei* ASSING & WUNDERLE, 1996 and *H. schillhammeri* ASSING & WUNDERLE, 1995 are unknown. Regarding the male sexual characters, *H. wunderlei* is most similar to *H. schuelkei*, whose known distribution is still confined to the type locality in the Chinese province Shaanxi, but differs by the more numerous long setae at the posterior margin of the male tergite VII, the distinctly longer and more slender appendices of pleurites VIII, the longer, more slender, and less strongly asymmetric male sternite VIII, and by the internal structures of the aedeagus (individual spines of the two

series more numerous, longer, more slender, and less strongly sclerotized; presence of three additional spines; absence of an additional V-shaped structure). For illustrations of *H. schuelkei* and other species of the *H. schwarzi* group see ASSING & WUNDERLE (1995, 1996).

**Distribution and bionomics:** The type material was collected in three close localities near a pass to the northwest of Sa Pa, Lao Cai region, North Vietnam. The specimens were sifted from leaf litter, roots, and debris at margins of secondary deciduous forests and among bushes at the margin of a pasture at altitudes of 1810-2030 m. The type locality is shown in Fig. 12. One of the paratypes is teneral.

***Habrocerus cf. indicus* ASSING & WUNDERLE, 1995**

**Material examined:** Vietnam: 1♀, 10 km NW Sa Pa, 22°22'N, 103°45'E, 1850 m, moist stream valley with deciduous trees, litter and roots between rocks sifted, 8.VIII.2013, leg. Assing (cAss).



**Fig. 12:** Type locality of *Habrocerus wunderlei*. Photo: Paul Wunderle.

**Comment:** The known distribution of *H. indicus*, which extends from the Himalaya (Nepal, North India) to the southeast of the Chinese province Yunnan, is mapped in ASSING (2014). The above record is based only on a female and should be considered tentative, but the recent male-based record from the environs of Pingbian in southeastern Yunnan is only some 60 km away.

***Habrocerus rougemonti* PACE, 1987**

**Material examined:** Thailand: 1♂, Doi Inthanon, Maeaum, N18°32' E098°31', 1560 m, along little river in dense vegetation, river bank, litter and debris sifted, 18.XII.2013, leg. Ob (cAss); 3♂♂, Doi Inthanon, 18°32'N, 98°30'E, 1600 m, moist primary evergreen forest, along stream, litter and debris sifted, 11.XII.2013, leg. Ob (cAss); 1♂, Doi Inthanon, Siribuhm Waterfall, 18°33'N, 98°31'E, 1330 m, in debris between plants, 9.I.2014, leg. Ob (cAss); 2♀♀, Doi Pha Hom Pok, road to summit, 20°00'N, 99°10'E, 1230 m, dry leaf litter of dipterocarp forest, 26.I.2014, leg. Ob (cAss); 1♀, Doi Pha Hom Pok, Kiew Lom, 20°03'N, 99°09'E, 1935 m, primary evergreen forest, leaf litter sifted, 22.I.2014, leg. Ob (cAss).

**Comment:** The known distribution of this species is confined to several localities in Thailand (ASSING 1998; ASSING & WUNDERLE 1995). The female-based records from Doi Pha Hom Pok in the extreme northwest of Thailand, very close to the border with Burma, should be considered tentative.

**World catalogue of Habrocerinae**

The articles in the references column are abbreviated as follows: A98 = ASSING (1998); A08 = ASSING (2008); A14 = ASSING (2014); App = ASSING (present paper); AW95 = ASSING & WUNDERLE (1995); AW96 = ASSING & WUNDERLE (1996). Articles containing descriptions and/or illustrations are underlined.

Taxon	Distribution	References
Genus <i>Habrocerus</i> ERICHSON, 1837		
<i>Habrocerus capillaricornis</i> species group		
<i>bisetosus</i> ASSING, 2014	China: Gansu	<u>A14</u>
<i>canariensis</i> ASSING & WUNDERLE, 1995	Canary Islands	A08, A14, <u>AW95</u> , AW96
<i>capillaricornis</i> (GRAVENHORST, 1806) = <i>nodicornis</i> (STEPHENS, 1832)	West Palaearctic; adventive in North America, South America (Colombia), New Zealand, and South Africa	A98, A08, A14, <u>AW95</u> , AW96
<i>cyprensis</i> ASSING & WUNDERLE, 1995	Cyprus; Greece: Rhodes; Turkey: Antalya	A08, <u>AW95</u> , AW96
<i>ibericus</i> ASSING & WUNDERLE, 1995	Atlanto-Mediterranean: Morocco; Iberian Painsinsula; Southwest France	A98, A08, A14, <u>AW95</u> , AW96

<b>Taxon</b>	<b>Distribution</b>	<b>References</b>
<i>pisidicus</i> KORGE, 1971	Ponto-Mediterranean, from Cyprus, Turkey, and Georgia westwards to Corsica and Sardinia	A98, A08, A14, <a href="#">AW95</a> , AW96
<i>simulans</i> ASSING & WUNDERLE, 1995	Israel, Lebanon, Turkey	A08, A14, <a href="#">AW95</a>
<i>splendens</i> ASSING, 2008	China: Yunnan	<a href="#">A08</a> , A14
<i>Habrocerus rougemonti</i> species group		
<i>indicus</i> ASSING & WUNDERLE, 1995	North India (West Bengal, Sikkim); Nepal; China: Yunnan	A08, <a href="#">A14</a> , App, <a href="#">AW95</a> , AW96
<i>neglectus</i> ASSING, 1998	Thailand	<a href="#">A98</a>
<i>rougemonti</i> PACE, 1987	Thailand	<a href="#">A98</a> , App, <a href="#">AW95</a>
<i>Habrocerus schwarzi</i> species group		
<i>costaricensis</i> ASSING & WUNDERLE, 1995	Costa Rica	A08, <a href="#">AW95</a>
<i>schillhammeri</i> ASSING & WUNDERLE, 1995	Indonesia: Sumatra	<a href="#">AW95</a>
<i>schuelkei</i> ASSING & WUNDERLE, 1996	China: Shaanxi	A14, <a href="#">AW96</a>
<i>schwarzi</i> HORN, 1877	North America: Canada; USA	A98, <a href="#">AW95</a>
<i>tichomirovae</i> (FILATOVA, 1981)	Russian Far East	<a href="#">AW95</a>
<i>tropicus</i> WENDELER, 1956	Brazil	A98, <a href="#">AW95</a>
<i>wunderlei</i> nov.sp.	North Vietnam	<a href="#">App</a>
<i>Genus Nomimocerus</i> COIFFAIT & SAIZ, 1965		
<i>conus</i> ASSING & WUNDERLE, 1996	Chile	<a href="#">AW96</a>
<i>longispinosus</i> ASSING & WUNDERLE, 1995	Chile	A98, A08, <a href="#">AW95</a>
<i>marginicollis</i> (SOLIER, 1849) = <i>rufescens</i> (SOLIER, 1849)	Argentina, Chile	<a href="#">AW95</a>
<i>parvispinosus</i> ASSING & WUNDERLE, 1995	Argentina, Chile	<a href="#">AW95</a>
<i>peckorum</i> ASSING & WUNDERLE, 1995	Chile	A98, A08, <a href="#">AW95</a>
<i>septentrionalis</i> ASSING, 1998	Chile	<a href="#">A98</a>

### Acknowledgements

I am indebted to Paul Wunderle for the generous gift of the holotype of *H. wunderlei*.

### Zusammenfassung

*Habrocerus wunderlei* nov.sp. (Nord-Vietnam: Umgebung von Sa Pa) wird beschrieben, abgebildet und von anderen Arten der *H. schwarzi*-Gruppe unterschieden. Weitere Nachweise von zwei Arten

werden aus Nord-Vietnam und Thailand gemeldet. Die Unterfamilie Habrocerinae wird damit erstmals aus Vietnam nachgewiesen. Weltweit sind derzeit 18 Arten in der Gattung *Habrocerus* ERICHSON, 1839 und 24 in der gesamten Unterfamilie bekannt. Ein revidierter Weltkatalog der Habrocerinae wird erstellt.

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