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## On the Staphylinidae of Socotra Island, Yemen (Insecta: Coleoptera)

V. ASSING

**A b s t r a c t :** A study of material of Staphylinidae collected in the Yemenite island Socotra and in the south of mainland Yemen yielded approximately 50 species, 27 of which were identified at species level. Six of them, all from Socotra, are described and illustrated: *Octavius curtissimus* nov.sp., *Edaphus hlavaci* nov.sp., *E. socotranus* nov.sp., *Pinophilinus socotranus* nov.sp., *Pseudomedon macer* nov.sp., and *Brachida socotrana* nov.sp. Of the previously described species, eight species are reported from Socotra for the first time, nine species represent new country records for Yemen, and one Afrotropical species is reported from the Palaearctic region for the first time.

**K e y w o r d s :** Coleoptera, Staphylinidae, Palaearctic region, Yemen, Socotra, taxonomy, new species, new records.

### Introduction

With an area of nearly 3,670 km<sup>2</sup>, Socotra is the largest island of a small archipelago in the Arabian Sea. It is situated some 370 km to the south-southeast of Yemen and approximately 240 km to the east-northeast of the Horn of Africa (Somalia). Politically, the island belongs to Yemen.

According to SMETANA (2004) and an unpublished update (end of 2011) of this catalogue (SCHÜLKE unpubl.), the staphylinid fauna of Yemen comprises 115 species. Four named species have been recorded from Socotra: *Aleochara trivialis* KRAATZ 1859, *Oxytelus pharaonum* KOCH 1934, *Gabrius adelae* HROMÁDKA 2011, and *Philonthus turbidus* ERICHSON 1840 (HROMÁDKA 2011, WRANIK 2003).

Recently, Peter Hlaváč (Košice) and Jiří Hájek (National Museum of Natural History, Praha) forwarded a total of 756 specimens of Staphylinidae to me for study, which had been collected during three field trips to Socotra in 2001, 2003, and 2010 (658 specimens) and to the mainland of Yemen in 2010 (98 specimens). This material comprised approximately 50 species. However, a positive identification at species level was not possible for part of the species for several reasons. Some were represented only by females, some belonged to genera or species groups that are currently in a state of taxonomic confusion, and some are probably undescribed. Nevertheless, so little is known about the Staphylinidae of Socotra that it seems worthwhile to report at least those species that could be identified with some confidence. In addition, descriptions of six species are provided.

## Material and Methods

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

MNHUB..... Museum für Naturkunde der Humboldt-Universität, Berlin (J. Frisch)  
 NMNHP..... National Museum of Natural History, Praha (J. Hájek)  
 OÖLL..... Oberösterreichisches Landesmuseum, Linz (F. Gusenleitner)  
 cAss..... author's private collection  
 cPut..... private collection Volker Puthz, Schlitz  
 cSch..... private collection Michael Schülke, Berlin

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). A digital camera (Nikon Coolpix 995) was used for the photographs.

Head length was measured from the anterior margin of the labrum to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagus.

## Results

In all, 21 previously described species were positively identified at species level, eleven from the mainland of Yemen and eleven from Socotra. An additional six species from Socotra are described for the first time. Another species (*Cilea* sp.) from Socotra will be described by SCHÜLKE (in prep.). The unidentified and doubtfully identified *Scopaeus* species will be treated by FRISCH (in prep.).

Only one of the identified species, *Philonthus turbidus*, was recorded from both Socotra and the mainland. Except for this species, *Oxytelus pharaonum*, *Gabrius adela* and *Aleochara trivialis*, all the identified species from Socotra represent new island records. In all, eight species are reported from Socotra for the first time, nine species represent new country records for Yemen, and one Afrotropical species is reported from the Palearctic region for the first time.

The Staphylinidae fauna of Socotra is composed of various zoogeographic elements. At least four of the newly described species, *Octavius curtissimus*, *Edaphus hlavaci*, *E. socotranus*, and *Pinophilinus socotranus*, are undoubtedly endemic to the island, as can be inferred from adaptive reductions such as reduced elytra and hind wings, and the absence of a palisade fringe at the posterior margin of the abdominal tergite VIII. Three species, *Pseudomedon macer*, *Gabrius adela*, and *Brachida socotrana*, are currently known only from Socotra, but are fully winged and may be more widespread.

Some species such as *Carpelimus atomus*, *Pseudobium sinaicum*, *Scopaeus asirensis*, and *Cryptomanum omanicum* are distributed in the Middle East and probably colonised Socotra from the Arabian Peninsula. Others, like *Acanthoglossa hirta*, *Philonthus mivutanus*, and *Aleochara trivialis*, have vast distributions including much of the Afrotropical and the Oriental regions. The origin of the Socotran population, therefore, is unclear. The same applies to *Philonthus turbidus* (Oriental, Afrotropical, southern West Palearctic, Nearctic regions), *Astenus nigromaculatus* (Afrotropical, southern West

Palaeartic), and *Oxytelus pharaonum*. The latter species was originally described from Egypt as a subspecies of *O. varipennis* KRAATZ 1859, a species with a vast distribution in the southern East Palaeartic and Oriental regions. However, both *O. pharaonum* and *O. varipennis* are very active, probably long-distance flyers, which renders the hypothesis that both should represent subspecies highly unlikely. Moreover, according to SCHÜLKE (pers. comm.), who studied material of *O. varipennis* and *O. pharaonum*, the former is subject to extreme intraspecific variation, the distinguishing characters indicated by KOCH (1934) are unsuitable for a clear distinction of these taxa, and *O. pharaonum* may eventually prove to be conspecific with *O. varipennis*. Therefore, the treatment of *O. pharaonum* as a valid species should be considered tentative.

*Stenus rorellus rorellus* is listed in the Palaeartic catalogue neither for Yemen nor for the Palaeartic region, but was reported from four localities in Yemen and Oman by PUTHZ (2011).

**Tab. 1:** Staphylinidae (exclusive of Pselaphinae, Scydmaeninae, Dasycerinae and Scaphidiinae) collected in the mainland of Yemen (localities 1 and 2) and in Socotra (localities 3-34). New country records from the Palaeartic region sensu SMETANA (2004), from Yemen, and new island records from Socotra are given in the new record ("nr") column as "P", "Y", and "S", respectively. In the localities column, the number of specimens is given in parentheses behind the locality number.

**Localities:** mainland Yemen: **1:** Sana'a gov., Beni Mansour vill. env., 15°06'N, 43°53'E, 1520-1550 m, sifted near stream, 3.-5.XI.2010, leg. Hlaváč; **2:** Al Hudaydah gov., Jabal Bura valley forest NP, 14°52'N, 43°25'E, 240-350 m, light, 4.XI.2010, leg. Hlaváč.

Socotra: **3:** Dixam plateau, Firmihin, 12°29'N, 54°01'E, 490 m, *Dracaena* forest, 15.-16.XI.2010, leg. Batelka, Bezděk, Hlaváč & Purchart; **4:** Dixam plateau, 12°31'N, 53°59'E, 810 m, 1.-2.XII.2003, leg. Kabátek; **5:** Dixam plateau, Wadi Esgego, 12°28'N, 54°01'E, 300 m, 2.-3.XII.2003, leg. Farkač, Kabátek & Král; **6:** Dixam plateau, Wadi Zeeriq, 12°31'N, 53°59'E, 750 m, 3.XII.2003, leg. Král; **7:** Dixam plateau, Wadi Zeeriq, 12°30'N, 53°59'E, 12.VI.2010, leg. Hula & Niedobová; **8:** Dixam plateau, Sirihin area, 12°31'N, 53°59'E, 810 m, 1.-2.XII.2003, leg. Farkač; **9:** Firmihin, 12°29'N, 54°00'E, 400-500 m, 18.-19.VI.2010, leg. Hula & Niedobová; **10:** Firmihin, 12°28'N, 54°00'E, 400-500 m, 6.-7.II.2010, leg. Purchart & Vybíral; **11:** Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, sifted, 12.-13.XI.2010, leg. Hlaváč, Batelka, Bezděk, Hájek & Purchart; **12:** Al Haghier Mts., Wadi Madar 12°33'N, 54°00'E, 1180-1230 m, 12.-14.XI.2010, leg. Batelka, Bezděk, Hájek & Hlaváč; **13:** Al Haghier mts., Skant area, 12°36'N, 54°00'E, 1240 m, 2.XII.2003, leg. Král; **14:** Hadiboh env., 12.65°N, 54.02°E, 10-100 m, 21.XI.-12.XII.2003, leg. Farkač, Kabátek & Král; **15:** Noged plain, Qaareh (waterfall), 12°20'N, 53°38'E, 50 m, 5.-6.XII.2003, leg. Farkač, Kabátek & Král; **16:** Noged plain, Wadi Ireeh, 12°23'N, 54°00'E, 100 m, 6.-7.XII.2003, leg. Farkač; **17:** Noged plain, Sharet Halma vill. env., 12°22'N, 54°05'E, sand dunes, 20 m, 10.-11.XI.2010, leg. Bezděk, Hájek & Purchart; **18:** Noged plain, Sharet Halma vill. env., 12°22'N, 54°05'E, 20 m, sand dunes, at light, 10.-11.XI.2010, leg. Bezděk; **19:** Khayrha mts., Qalansiyah env., 12°39'N, 53°28'E, 85-590 m, 9.-10.XII.2003, leg. Kabátek & Král; **20:** Homhil protected area, 12°34'N, 54°19'E, 360 m, 28.-29.XI.2003, leg. Kabátek & Král; **21:** Qaariah env., 12°38'N, 54°13'E, 10 m, 28.XI.2003, leg. Kabátek; **22:** Qualentiah env., 5 km SE Quaysoh, 12°40'N, 53°27'E, 4.-5.VI.2010, leg. Hula & Niedobová; **23:** Ba'a vill., 12°32'N, 54°11'E, 230 m, 5.XII.2003, leg. Kabátek; **24:** Ayri valley, 10.VI.2010, leg. Hula & Niedobová; **25:** Momi-Homhil, 2.VI.2010, leg. Hula & Niedobová; **26:** Deiqub cave env., 10.VI.2010, leg. Hula & Niedobová; **27:** Wadi Ayhaft, 12°37'N, 53°59'E, 190 m, 24.-26.XI.2003, leg. Kabátek & Král; **28:** Wadi Ayhaft, 12°37'N, 53°59'E, 200 m, 7.-8.XI.2010, leg. Batelka, Bezděk & Hájek; **29:** E Suq, 12°40'N, 54°04'E, 20-170 m, 22.XI.2003, leg. Král; **30:** Wadi Kesso, 1.IV.2001, leg. Bejček & Stastný; **31:** Qalansiyah, Khayrha mts., N-slopes, 12°39'N, 53°28'E, 90-590 m, 9.-10.XII.2003, leg. Farkač; **32:** Hallah Arhar (spring), 12°33'N, 54°28'E, 15 m, 11.XI.2010, leg. Bezděk & Hájek; **33:** Alloove area, Hassan vill. env., 12°31'N, 54°07'E, 220 m, 9.-10.XI.2010, leg. Bezděk.

| species   | nr | localities   |
|---|----|--|
| <i>Carpelimus atomus</i> (SAULCY 1865)                            | S  | 3(2), 18(2), 22(1)   |
| <i>Oxytelus pharaonum</i> KOCH 1934                               |    | 3(6), 4(7), 5(8), 6(17), 9(2), 11(8), 12(99), 13(45), 14(88), 15(2), 19(1), 20(1), 27(1), 29(5), 33(1) |
| <i>Bledius</i> spp. (3+ spp.)                                     |    | 17(4), 18(7), 23(2), 24(3)   |
| <i>Octavius curtissimus</i> nov.sp.                               |    | 11(36)   |
| <i>Edaphus hlavaci</i> nov.sp.                                    |    | 11(13)   |
| <i>Edaphus socotranus</i> nov.sp.                                 |    | 11(2)  |
| <i>Stenus rorellus rorellus</i> FAUVEL 1907                       |    | 1(12)  |
| <i>Stenus cameratus arabicola</i> PUTHZ 1967                      |    | 1(16)  |
| <i>Pinophilinus socotranus</i> nov.sp.                            |    | 11(2)  |
| <i>Oedichirus</i> sp. ♀   |    | 3(1)   |
| <i>Astenus nigromaculatus</i> (MOTSCHULSKY 1858)                  | YS | 14(1)  |
| <i>Astenina</i> gen.sp. ♀   |    | 11(2)  |
| <i>Paederus sabaesus</i> ERICHSON 1840                            | S  | 2(1)   |
| <i>Pseudolathra</i> cf. <i>villiersi</i> (CAMERON 1950) ♀         |    | 28(1)  |
| <i>Pseudobium sinaicum</i> (FAUVEL 1904)                          | S  | 5(15), 6(3), 16(2), 28(1), 30(1)   |
| <i>Pseudobium richteri</i> (SCHEERPELTZ 1961)                     | Y  | 2(2)   |
| <i>Scopaeus filiformis</i> WOLLASTON 1867                         |    | 2(5)   |
| <i>Scopaeus punctatellus</i> FAUVEL 1905                          |    | 2(1)   |
| <i>Scopaeus asirensis</i> FRISCH 2007                             | YS | 5(2), 15(2)  |
| <i>Scopaeus</i> cf. <i>sinaicus</i> COIFFAIT 1970                 |    | 2(8), 11(6), 12(9)   |
| <i>Scopaeus</i> sp.   |    | 11(5)  |
| <i>Pseudomedon macer</i> sp. n.                                   |    | 4(1), 11(1), 12(1), 15(1)  |
| <i>Lithocharis mateui</i> COIFFAIT 1968                           | Y  | 1(8)   |
| <i>Lithocharis</i> sp. aff. <i>mateui</i> COIFFAIT 1968           |    | 3(4), 4(1), 5(5), 6(1), 9(1), 14(17), 15(1), 17(1), 18(1), 21(1), 22(1), 28(19)                        |
| <i>Acanthoglossa hirta</i> KRAATZ 1859                            | YS | 5(3), 15(4)  |
| <i>Cryptomanum omanicum</i> (COIFFAIT 1981)                       | YS | 5(10), 14(1), 29(1), 31(1)   |
| <i>Gabronthus maritimus</i> (MOTSCHULSKY 1858)                    | Y  | 1(20)  |
| <i>Gabronthus</i> cf. <i>alluaudanus</i> JEANNEL & PAULIAN (1945) |    | 3(1), 7(1), 14(1), 20(1), 25(1), 26(1)   |
| <i>Gabrius adelaes</i> HROMÁDKA 2011                              |    | 4(1), 11(38), 12(17), 27(2), 28(2)   |
| <i>Philonthus turbidus</i> ERICHSON 1840                          |    | 1(3), 6(1)   |
| <i>Philonthus bisignatus</i> BOHEMAN 1848                         | PY | 1(16)  |
| <i>Philonthus mivutanus</i> TOTTENHAM 1962                        | YS | 5(1), 8(1), 13(1), 27(2)   |
| <i>Philonthus</i> sp.   |    | 12(1)  |
| <i>Hesperus</i> sp.   |    | 9(1), 19(1)  |
| <i>Atanygnathus</i> sp.   |    | 32(2)  |
| <i>Cilea</i> nov.sp.  |    | 11(3)  |
| <i>Coproporus</i> sp.   |    | 10(1)  |
| <i>Brachida socotrana</i> nov.sp.                                 |    | 11(41)   |
| <i>Atheta</i> sp. aff. <i>coriaria</i> (KRAATZ 1856)              |    | 3(1), 11(27), 12(1)  |
| <i>Aleochara lineatocollis</i> BERNHAUER 1930                     |    | 1(2)   |
| <i>Aleochara trivialis</i> KRAATZ 1859                            |    | 11(1)  |
| Aleocharinae gen.sp. (3 spp.)                                     |    | 2(1), 11(1), 12(2), 17(1)  |

## Descriptions of New Species

### *Octavius curtissimus* nov.sp. (Figs 1-4)

**Type material:** Holotype ♂: "Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, sifted, 12.-13.XI.2010, leg. Hlaváč / Holotypus ♂ *Octavius curtissimus* sp. n. det. V. Assing 2012" (NMNHP). Paratypes: 16♂♂, 18♀♀: same data as holotype (MNHUB, OÖLL, cAss, cPut); 1 ex.: same data, but leg. Hájek (NMNHP).

**E t y m o l o g y :** The specific epithet (superlative of the Latin adjective *curtus*: short) refers to the conspicuously short elytra.

**D e s c r i p t i o n :** Body length 1.6-1.9 mm; length of forebody 0.8-0.9 mm. Habitus as in Fig. 1. Coloration: forebody dark-reddish, often with the elytra slightly paler; abdomen with the base (segments III-V) blackish-brown to blackish and the apex more or less extensively reddish to reddish-brown; legs dark-brown with yellow tarsi, tibiae often yellowish-brown; antennae yellowish.

Head transversely wedge-shaped; punctation coarse, dense, rugose, and largely confluent (Fig. 2). Eyes slightly shorter than postocular region in dorsal view. Antennae short, not reaching posterior margin of head.

Pronotum strongly transverse, approximately 1.5 times as broad as long and 1.2 times as broad as head; posterior margin convexly produced in the middle; on either side of middle with narrow longitudinal impression posteriorly forming an oval pit; lateral portion separated from median portion by extensive impression; punctation coarse, rugose, and largely confluent (Fig. 2); dorsal surface almost matt.

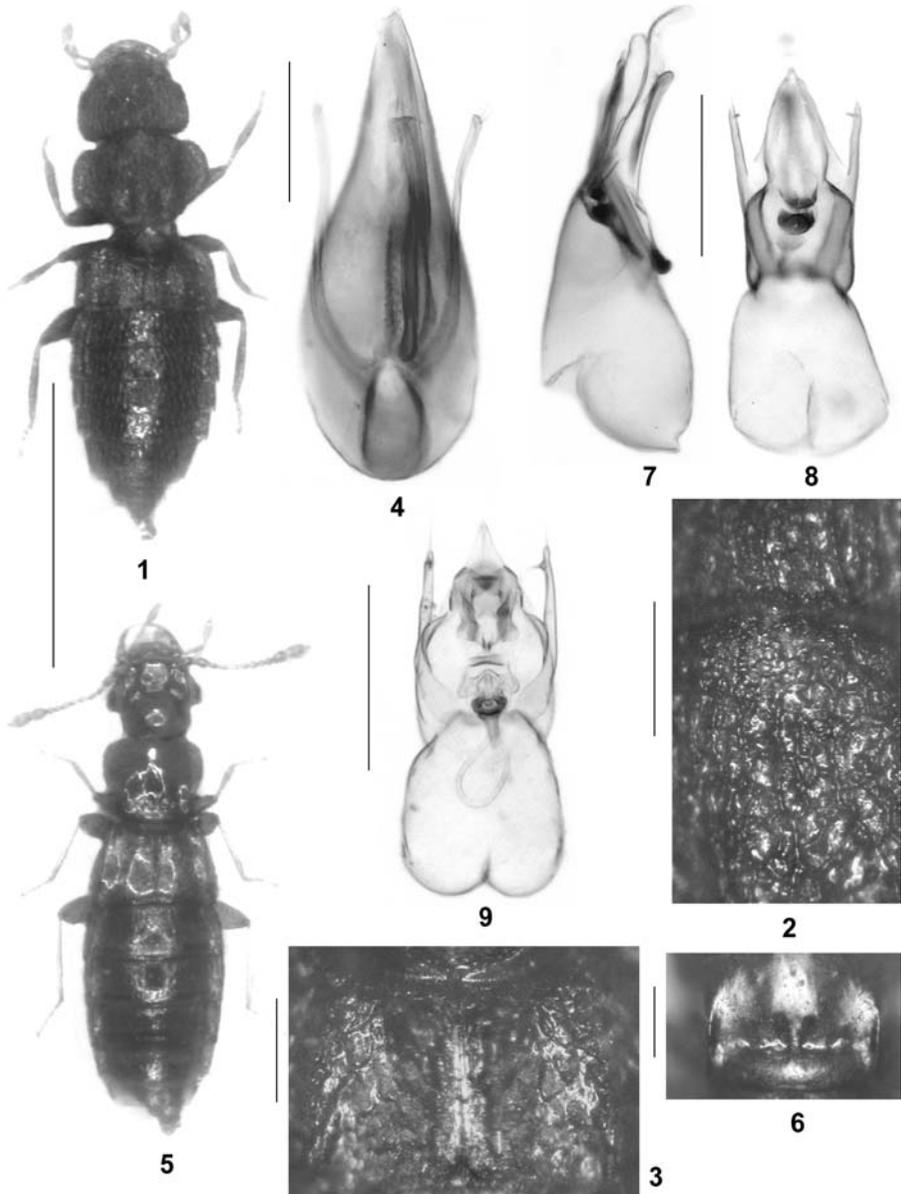
Elytra extremely short, less than half as long as pronotum; each elytron with three folds and laterally sharply edged; punctation somewhat rugose and weakly defined (Fig. 3). Hind wings completely reduced.

Abdomen approximately as broad as elytra; punctation moderately dense and granulose; interstices with shallow, but distinct microsculpture; posterior margin of tergite VII without palisade fringe.

♂: sternite VIII with moderately deep, broadly V-shaped posterior excision; aedeagus approximately 0.33 mm long and apically very acute in ventral view (Fig. 4).

**C o m p a r a t i v e n o t e s :** According to PUTHZ (pers. comm.), the new species is allied to *O. flavescens* (KISTNER 1961) and related species. It is distinguished from the Afrotropical representatives of this group by the shorter elytra and by the morphology of the aedeagus.

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The species is currently known only from one locality in the Haghier mountain range, Socotra, where it is probably endemic, as is suggested by the extremely reduced elytra and hind wings. The specimens were sifted from leaf litter and soil at an altitude of 1450 m, together with two undescribed species of *Edaphus* MOTSCHULSKY 1856.



**Figs 1-9:** *Octavius curtissimus* nov.sp. (1-4), *Edaphus hlavaci* nov.sp. (5-8), and *E. socotranus* nov.sp. (9): (1, 5) habitus; (2) posterior median portion of head and median portion of pronotum; (3) elytra; (4, 8, 9) aedeagus in ventral view; (6) posterior portion of pronotum; (7) aedeagus in lateral view. Scale bars: 1,5 : 1.0 mm; 2-4, 6-9: 0.1 mm.

***Edaphus hlavaci* nov.sp.** (Figs 5-8)

**Type material:** Holotype ♂: "Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, sifted, 12.-13.XI.2010, leg. Hlaváč / Holotypus ♂ *Edaphus hlavaci* sp. n. det. V. Assing 2012" (NMNHP). Paratypes: 6♂♂, 4♀♀: same data as holotype (OÖLL, cAss, cPut); 2 exs.: same data, but leg. Hájek (NMNHP).

**E t y m o l o g y :** This species is dedicated to my friend and colleague Peter Hlaváč, to whom I owe numerous Staphylinidae from Socotra, including the type material of several species described in the present paper.

**D e s c r i p t i o n :** Body length 1.5-1.9 mm; length of forebody 0.8-0.9 mm. Habitus as in Fig. 5. Coloration: forebody pale yellowish brown; abdomen brown with yellowish apex; legs, antennae, and mouthparts yellowish. Whole forebody without appreciable punctation, smooth and glossy.

Head transverse; frons deeply and sharply impressed, laterally and posteriorly sharply delimited; impression separated from lateral portions by distinct and curved elevation. Eyes small, almost extending to posterior margin of head posteriorly. Antennae moderately slender, extending approximately to middle of pronotum.

Pronotum approximately 1.1 times as broad as long and about as broad as head; lateral margins distinctly sinuate near posterior angles; on either side with sharp postero-lateral carina of approximately 1/3 the length of pronotum extending anteriorly from posterior angle; near posterior margin with short median keel, on either side of this keel with a large and occasionally with an additional small fovea (Fig. 6).

Elytra short, approximately 0.7 times as long as pronotum; laterally with shallow longitudinal impression, laterad of this impression somewhat elevated; humeral angles with distinct and almost sharp elevation. Hind wings completely reduced.

Abdomen slightly broader than elytra; tergite III without median keel; tergites with distinct microsculpture and much less glossy than forebody; punctation not noticeable at magnification of 60 x; posterior margin of tergite VII without palisade fringe.

♂: sternite VIII with rather deep and U-shaped posterior excision; aedeagus (Figs 7-8) approximately 0.24 mm long and apically very acute in ventral view; paramere subapically with setose projection.

**C o m p a r a t i v e n o t e s :** According to PUTHZ (pers. comm.), *E. hlavaci* is distinguished from all impunctate, microphthalmous, and micropterous Afrotropical *Edaphus* species with a flat frons and with a humeral elevation, e.g., *E. luberoensis* PUTHZ 1992 from Congo, by the morphology of the aedeagus, particularly also the subapical setose projections of the parameres.

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type locality, the hypothesised distribution, and the circumstances of collection are identical to those of *Octavius curtissimus* (see above).

***Edaphus socotranus* nov.sp.** (Fig. 9)

**Type material:** Holotype ♂: "Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, sifted, 12.-13.XI.2010, leg. Hlaváč / Holotypus ♂ *Edaphus socotranus* sp. n. det. V. Assing 2012" (NMNHP). Paratypes ♀: same data as holotype (cAss).

**E t y m o l o g y :** The specific epithet is an adjective derived from Socotra, where this species is probably endemic.

**Description:** Minute species; body length 1.1-1.2 mm; length of forebody 0.6 mm. Coloration: whole body dark-yellowish; legs, antennae, and mouthparts yellowish. Whole forebody without appreciable punctation, smooth and glossy.

Head transverse; frons deeply and sharply impressed, laterally and posteriorly sharply delimited; impression separated from lateral portions by distinct elevation. Eyes small and with large ommatidia, almost extending to posterior margin of head posteriorly. Antennae slender, almost reaching posterior margin of pronotum; antennomere X relatively long and weakly transverse.

Pronotum almost as long as broad and approximately 1.1 times as broad as head; lateral margins distinctly sinuate near posterior angles; posteriorly with five carinae and four distinct foveae.

Elytra short, approximately 0.7 times as long as pronotum; humeral angles with distinct and almost sharp elevation. Hind wings completely reduced.

Abdomen approximately as broad as combined width of elytra; tergites without distinct microsculpture and glossy; punctation very fine and sparse; tergite III without median keel; posterior margin of tergite VII without palisade fringe.

♂: sternite VIII with deep and U-shaped posterior excision; aedeagus 0.2 mm long and of distinctive shape (Fig. 9); paramere subapically with setose projection.

**Comparative notes:** According to PUTHZ (pers. comm.), *E. socotranus* is distinguished from all similarly minute, impunctate, microphthalmous, and micropterous Afrotropical *Edaphus* species with a flat frons and with a humeral elevation, e.g., *E. kabobomontis* PUTHZ 1992 from Congo, by a longer antennomere X, the presence of four less distinctly separated basal foveae on the pronotum, the absence of a median keel on the abdominal tergite III, and particularly by the morphology of the aedeagus. It is readily separated from the syntopic *E. hlavaci* particularly by much smaller size, longer antennae, the differently shaped pronotum, the absence of distinct microsculpture on the abdomen, and by the completely different morphology of the aedeagus.

**Distribution and natural history:** The type locality, the hypothesised distribution, and the circumstances of collection are identical to those of *Octavius curtissimus* and *Edaphus hlavaci* (see above).

### ***Pinophilinus socotranus* nov.sp.** (Figs 10-15)

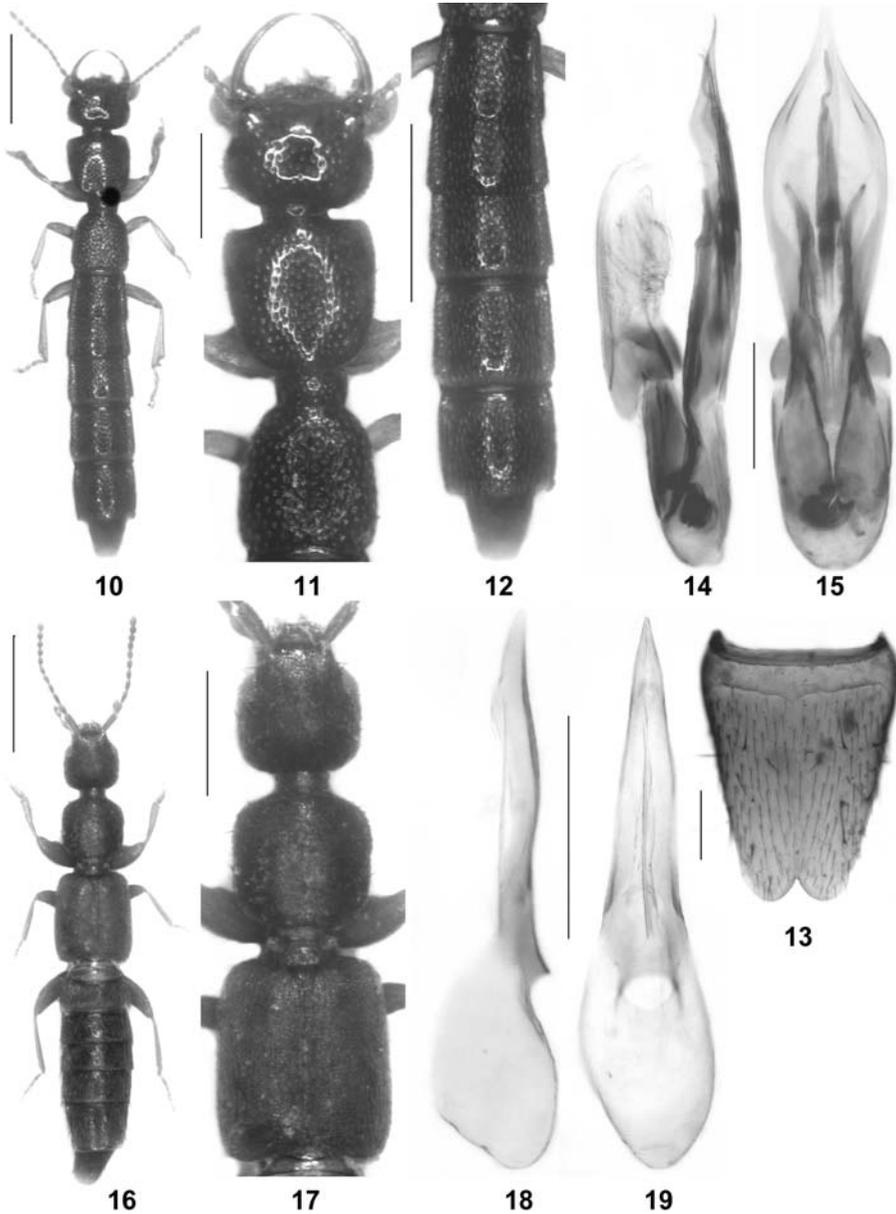
**Type material:** Holotype ♂: "Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, sifted, 12.-13.XI.2010, leg. Hlaváč / Holotypus ♂ *Pinophilinus socotranus* sp. n. det. V. Assing 2012" (NMNHP). Paratype ♀: same data as holotype (cAss).

**Etymology:** The specific epithet is an adjective derived from Socotra, where this species is probably endemic.

**Description:** Body length 5.3-6.0 mm; length of forebody 2.2 mm. Habitus of holotype as in Fig. 10. Coloration: forebody dark castaneous; abdomen dark-brown to blackish; legs dark-yellowish; antennae yellowish-red.

Head (Fig. 11) strongly transverse, approximately 1.4 times as wide as long; posterior margin concave in the middle; frons practically impunctate; punctation of vertex moderately dense, rather coarse, and defined; interstices glossy, without microsculpture, on average broader than diameter of punctures. Eyes of moderate size, slightly shorter than postocular region in dorsal view. Antenna approximately 1.2 mm long; antennomeres III-

VIII weakly oblong, IX-X approximately as long as broad. Mandibles long, slender, and curved, not dentate.



**Figs 10-19:** *Pinophilinus socotranus* nov.sp. (10-15) and *Pseudomedon macer* nov.sp. (16-19): (10, 16) habitus; (11, 17) forebody; (12) abdomen; (13) male sternite VIII; (14-15, 18-19) aedeagus in lateral and in ventral view. Scale bars: 10, 16: 1.0 mm; 11-12, 17: 0.5 mm; 13-15, 18-19: 0.2 mm.

Pronotum (Fig. 11) flattened, weakly convex in cross-section, indistinctly oblong and of subtrapezoid shape, at anterior angles approximately as wide as head, and distinctly tapering posteriorly; posterior angles abruptly rounded, moderately marked; punctation as coarse as that of head, but somewhat denser; interstices without microsculpture, on average approximately as broad as diameter of punctures.

Elytra short and narrow, approximately 0.75 times as long and 0.9 times as broad as pronotum, distinctly widened posteriorly (Fig. 11); humeral angles almost obsolete; punctures even larger than those of pronotum, but less defined; interstices without microsculpture. Hind wings completely reduced. Metatarsomere I longer than the combined length of II and III.

Abdomen (Fig. 12) long and slender, broader than elytra; maximal width at segment VII; punctation coarse and dense, denser on anterior than on posterior tergites; interstices without microsculpture; posterior margin of tergite VII without palisade fringe.

♂: sternite VIII oblong, distinctly tapering posteriorly, and with small, V-shaped posterior excision (Fig. 13); aedeagus as in Figs 14-15.

**Comparative notes:** The only other *Pinophilinus* species with short elytra and reduced hind wings in the region is *P. schatzmayri* (KOCH 1934) from the south of the Sinai peninsula. This species, however, is distinguished from *P. socotranus* by larger body size (7 mm), paler coloration (body yellowish-red), a wider head (wider than pronotum), a densely punctate vertex, the less extensively impunctate frons, the more oblong pronotum (approximately 1.25 times as long as broad) with a laterally finer punctation, the presence of a pair of posterior impressions on the pronotum, the posteriorly sub-parallel lateral margins of the elytra. For more details see KOCH (1934). The male sexual characters of *P. schatzmayri* are unknown.

**Distribution and natural history:** The type locality and the circumstances of collection are identical to those of *Octavius curtissimus*, *Edaphus hlavaci*, and *E. socotranus* (see above). The short elytra and reduced hind wings suggest that the species is endemic to Socotra.

### ***Pseudomedon macer* nov.sp.** (Figs 16-23)

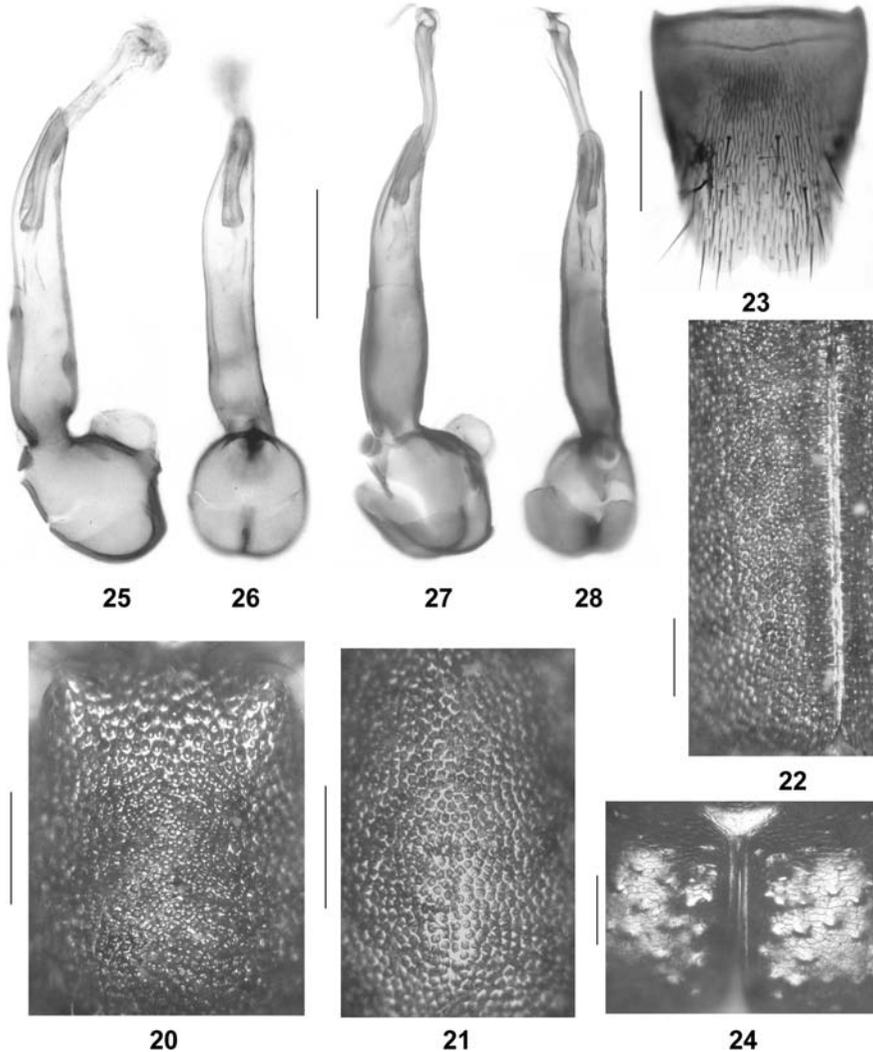
**Type material:** Holotype ♂: "Yemen, Soqatra Is., 21.xi.-12.xii.2003, Hadiboh env., ca. 10-100 m, N12°65'02"[sic!] E54°02'04" [GPS], David Král lgt. / Yemen - Soqatra 2003 Expedition; Jan Farkač, Petr Kabátek & David Král / Holotypus ♂ *Pseudomedon macer* sp. n. det. V. Assing 2012" (NMNHP). Paratypes: 1 ♀: "Yemen, Sokotra, Al Haghier Mts., Wadi Madar, 12°33'N, 54°00'E, 1180-1230 m, 12.-14.XI.2010, leg. Hlaváč" (cAss); 1 ex., Yemen, Sokotra, Dixam plateau, 12°31'N, 53°59'E, 810 m, 1.-2.XII.2003, leg. Kabátek (NMNHP); 1 ex., Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, 12.-13.XI.2010 (NMNHP).

**Etymology:** The specific epithet (Latin, adjective: slender, meagre) alludes to the conspicuously slender aedeagus.

**Comment:** The description is based on the holotype and the first female paratype. The other two specimens were examined and returned to the NMNHP prior to the description.

**Description:** Body length 3.5-4.0 mm; length of forebody 2.1 mm. Habitus of holotype as in Fig. 16. Coloration: head, pronotum, and abdomen blackish-brown to blackish; elytra dark-brown; legs brown with paler tarsi; antennae dark-brown with reddish to reddish-brown antennomeres I and II.

Head (Fig. 17) approximately as long as broad; lateral margins subparallel; dorsal surface matt owing to the extremely dense and finely granulate punctation; frons less densely punctured and with subdued shine (Fig. 20). Eyes large, slightly shorter than postocular region in dorsal view. Antennae approximately 1.1 mm long, not particularly slender; antennomere III slender, approximately three times as long as broad and longer than II; IV distinctly shorter than III, slightly less than twice as long as broad; V-VIII of gradually decreasing length and decreasingly oblong; IX approximately as broad as long; X weakly transverse.



**Figs 20-28:** *Pseudomedon macer* nov.sp. (20-23) and *Brachida socotrana* nov.sp. (24-28): (20) antero-median portion of head; (21) median portion of pronotum; (22) sutural portion of left elytron; (23) male sternite VIII; (24) male elytra; (25-28) aedeagus in lateral and in ventral view. Scale bars: 0.1 mm.

Pronotum (Fig. 17) indistinctly transverse and 1.10-1.15 times as broad as head; surface with extremely dense, finely granulose micropunctuation (Fig. 21) and additional, moderately dense, shallow, barely noticeable macropunctures; surface matt.

Elytra long and large, 1.15-1.20 times as long as, and much broader than pronotum (Fig. 17); punctuation extremely dense, finely granulose (Fig. 22); surface matt. Hind wings fully developed. Protarsomeres dilated in both sexes. Metatarsomere I approximately as long as the combined length of II and III.

Abdomen narrower than elytra; punctuation fine and extremely dense; microsculpture distinct; posterior margin of tergite VII with palisade fringe.

♂: sternite VIII oblong, and with small, broadly V-shaped posterior excision (Fig. 23); aedeagus 0.5 mm long, of conspicuously slender shape (Figs 18-19).

**Comparative notes:** In external characters, *Pseudomedon* species are generally very similar. A reliable identification is usually possible only based on the male sexual characters. The new species is readily distinguished from all those congeners whose generic affiliations have been revised and whose male sexual characters are known by the conspicuously slender aedeagus. In the key to the Palaearctic representatives of the genus by ASSING (2009), *P. macer* would key out at couplet 10, together with the externally similar, widespread West Palaearctic *P. obsoletus* (NORDMANN 1837). It is additionally distinguished from this species by the even denser punctuation of the head and pronotum and the slightly shorter and less slender antennae. In *P. obsoletus*, the interstices on the head and pronotum are very narrow, but noticeable and somewhat shiny. For illustrations of other Palaearctic species see ASSING (2009).

**Distribution and natural history:** The species is currently known from four localities in Socotra, where it was found at a wide range of altitudes, from near sea-level to 1450 m. The fully developed wings suggest that *P. macer* may be more widespread in the Afrotropical region.

***Brachida socotrana* nov.sp.** (Figs 24-28)

**Type material:** Holotype ♂: "Yemen, Sokotra, Al Haghier Mts., Scant Mt. env., 12°35'N, 54°02'E, 1450 m, 12.-13.XI.2010, leg. Bezděk / Holotypus ♂ *Pseudomedon macer* sp.n. det. V. Assing 2012" (NMNHP). Paratypes: 39 exs.: same data as holotype (NMNHP, cAss); 1 ♂: same data, but "sifted ... leg. Hlaváč" (cAss).

**Etymology:** The specific epithet is derived from Socotra, where the species may be endemic.

**Description:** Species of remarkably variable size; body length 1.7-2.6 mm; length of forebody 0.7-1.1 mm. Coloration variable: head and pronotum blackish; elytra usually blackish, more rarely paler; abdomen blackish, sometimes with the base more or less extensively and more or less distinctly paler; legs brown to blackish brown, with the tibial bases and apices, as well as the tarsi yellowish; antennae dark-brown, with the basal 3-4 antennomeres yellowish.

Head transverse and with very shallow microsculpture, glossy. Eyes large and bulging.

Pronotum strongly transverse, 1.3-1.4 times as broad as head; surface with very shallow microreticulation, glossy; in the middle with four punctures in quadrate arrangement.

Elytra approximately as long as, and distinctly broader than pronotum; punctuation sexually dimorphic; surface with distinct microreticulation (Fig. 24). Hind wings fully developed.

Abdomen broad, almost as broad as elytra at posterior margin; tergites with pronounced microreticulation and subdued shine; posterior margin of tergite VII with palisade fringe; tergite VIII with sexual dimorphism.

♂: elytra in large male with somewhat scale-shaped tubercles scattered on disc, these punctures denser along suture (Fig. 24); tergite VIII near posterior margin with smooth and more or less extensive elevation; sternite VIII with strongly convex posterior margin; aedeagus of variable size, 0.30-0.36 mm long, very slender, and somewhat asymmetric in ventral view (Figs 25-28).

♀: elytra impunctate and without tubercles; tergite VIII unmodified.

**Intraspecific variation:** This species is subject to remarkable intraspecific variation, not only of body size and coloration, but also of the male primary and sexual characters. In small males, the modifications of the elytra and tergite VIII may be obsolete, and the aedeagus is smaller than in larger males.

**Comparative notes:** This species is readily distinguished from its Afrotropical congeners by the much more slender aedeagus, presumably also by the male secondary sexual characters, which are usually not mentioned in the original descriptions. The geographically closest Palaearctic congener is *B. hatayana* ASSING 2010 from southern Turkey, which is readily distinguished from *B. socotrana* by completely different coloration alone (body bright reddish with blackish preapical abdominal segments).

**Distribution and natural history:** The type locality is identical to that of all other new species described above, except that of *Pseudomedon macer*. One of the specimens was sifted; no additional collection data are known for the remaining specimens. Since the species is fully winged, it may be more widespread in the adjacent parts of the Afrotropical region.

### Acknowledgements

Special thanks are due to Peter Hlaváč (Košice) for the generous gift of his Staphylinidae from Socotra. Johannes Frisch (Berlin), Mikhail Gildenkov (Smolensk), Volker Puthz (Schlitz), Harald Schillhammer (Wien), and Michael Schülke (Berlin) helped with the identification of *Scopaeus*, *Carpelimus*, *Stenus*, *Philonthina*, and *Tachyporinae* species, respectively. Volker Puthz additionally examined the Euaesthetinae described in this paper and assisted with the descriptions.

### Zusammenfassung

Die Bearbeitung von Staphylinidenmaterial aus dem Südjemen und der jemenitischen Insel Sokotra ergab etwa 50 Arten, von denen 27 auf Artniveau identifiziert wurden. Sechs dieser Arten, alle von Sokotra, werden erstmals beschrieben und abgebildet: *Octavius curtissimus* nov.sp., *Edaphus hlavaci* nov.sp., *E. socotranus* nov.sp., *Pinophilinus socotranus* nov.sp., *Pseudomedon macer* nov.sp. und *Brachida socotrana* nov.sp. Acht Arten werden erstmals von Sokotra, neun Arten aus dem Jemen und eine afrotropische Art erstmals aus der Paläarktis nachgewiesen.

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Authors' address: Dr. Volker ASSING  
Gabelsbergerstr. 2  
D-30163 Hannover, Germany  
E-mail: vassing.hann@t-online.de

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