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Polycestinae (Coleoptera: Buprestidae) of Socotra Island

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Abstract. Five polycestine species are reported from Socotra Island including three new species: *Acmaeodera* (*Acmaeotethya*) *kabateki* sp. nov.; *A.* (*A.*) *hadiboe* sp. nov.; and *A.* (*A.*) *socotraensis* sp. nov. *Svatacesta* Zabransky, 2004, syn. nov., described originally as a subgenus of the genus *Strigoptera* Dejean, 1833 is considered a junior synonym of the genus *Pseudocastalia* Kraatz, 1896, and a new combination, *Pseudocastalia socotra* (Zabransky, 2004) comb. nov., is proposed. Illustrations of each species are provided, and a key is given for the identification of Socotran species of *Acmaeodera* Eschscholtz, 1829. Host plants for three *Acmaeodera* species are recorded for the first time. All Socotran Polycestinae are endemic for the island and demonstrate Afrotropical relations.

Key words. Coleoptera, Buprestidae, Polycestinae, *Pseudocastalia*, *Strigoptera, Acmaeodera,* taxonomy, new species, new synonym, new combination, new host plants, Yemen, Socotra

Introduction

The Buprestidae of Socotra Island are still poorly known. Only a few buprestid species have been reported from this island so far: *Julodis clouei* Buquet, 1893 (Julodinae), *Strigoptera* (*Svatacesta*) *socotra* Zabransky, 2004 (Polycestinae: Polycestini), *Acmaeodera* (*Acmaeotethya*) *holmi* Levey & Volkovish, 1996 (Polycestinae: Acmaeoderini), *Anthaxia* (*Haplanthaxia*) *angulinota* Bílý, 1984, *A.* (*H.*) *crotonivora* Bílý, 2005, *A.* (*H.*) *socotrensis* Bílý, 1984 and *Chalcogenia nana* Bílý, 2012 (Buprestinae: Anthaxiini) (Levey & Volkovitsh 1996; Zabransky 2004; Bílý 2005, 2006, 2012; Kubáň & Volkovitsh 2006; Volkovitsh 2006; Bellamy 2008). All the above mentioned species are endemic to Socotra Island. On the other hand, none of the polycestine species recorded from mainland Yemen (cf. Volkovitsh 2006) have been found on Socotra Island. Three new species of *Acmaeodera*, subgenus *Acmaeotethya* Volkovitsh, 1979 from Socotra Island are described below.

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Material and methods

Genitalia were extracted from moistened specimens, placed in hot 10 % KOH aqueous solution for 10 minutes, rinsed in water; aedeagus (penis extracted from tegmen) or ovipositor were separated from postabdominal segments and then mounted in glycerine jelly mountant medium (Brunel Microscopes Ltd., Chippenham, UK) on the slides for observation and illustration. Habitus and some genital images were taken using an Olympus SZ-CTV dissecting microscope mounted with a Olympus-Camedia 3030 Zoom camera or Leica MZ-9.5 microscope mounted with a Leica DFC-290 camera. Genitalia images of *Acmaeodera* species were taken using a Bresser-Biolux light microscope with integrated imaging system.

Codens of collections used throughout the text:

BMNH The Natural History Museum, London, United Kingdom;
GMCC Gianluca Magnani collection, Cesena, Italy;
MGCR Maurizio Gigli collection, Rome, Italy;
NMPC National Museum, Praha, Czech Republic;
PZCW Petr Zabransky collection, Wien, Austria;
VKCB Vítězslav Kubáň collection, Brno, Czech Republic (deposited in NMPC);
ZIN Zoological Institute RAS, Saint-Petersburg, Russia.

Label data in the type material sections are given verbatim; separate labels are divided by double slash (//).

Taxonomy

Subfamily Polycestinae Lacordaire, 1857
Tribe Polycestini Lacordaire, 1857
Subtribe Polycestina Lacordaire, 1857

Genus *Pseudocastalia* Kraatz, 1896

Pseudocastalia Kraatz, 1896: 84. Type species: *Pseudocastalia bennigseni* Kraatz, 1896, by subsequent designation of Cobos (1981: 43).

Svatacesta Zabransky, 2004: 119 (as subgenus of *Strigoptera* Dejean, 1833), **syn. nov**. Type species: *Strigoptera socotra* Zabransky, 2004, by original designation.

Pseudocastalia socotra (Zabransky, 2004) comb. nov.

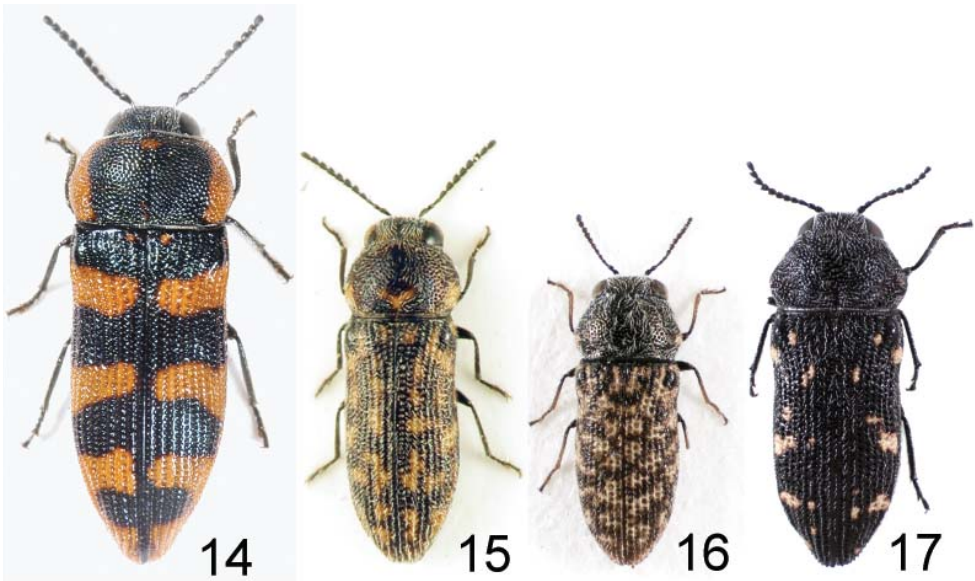
(Figs. 1–10, 18, 19)

Strigoptera (*Svatacesta*) *socotra* Zabransky, 2004: 119 (original description).
Strigoptera (*Svatacesta*) *socotra*: Bellamy (2008): 382 (catalogue).

Type material. Paratypes (2 ♂♂ 2 ♀♀, NMPC, PZCW): Yemen-Socotra Isl., 1993, ex larva, Petr Zabranky leg. // coll. P. Zabransky // Paratypus Strigoptera (Svatacesta subgen. n.) socotra sp. n., det. Petr Zabransky, 2004.

Notes. Zabransky (2004) placed the species from Socotra into the newly described subgenus *Svatacesta* Zabransky, 2004 within the mainly Oriental genus *Strigoptera* Dejean, 1833 [nine species in the Oriental region and a single Afrotropical species *S. bettoni* (Waterhouse, 1904) from coastal East Africa]. P. Zabransky (pers. comm.) based this decision on a "broad" concept of the taxonomic composition of the genus *Strigoptera* (*sensu lato*). However, the study of

Figs. 1–13. *Pseudocastalia* and *Strigoptera* spp. 1–10 – *Pseudocastalia socotra* (Zabransky, 2004), paratypes: 1 – dorsal view, male (12.2 mm); 2 – dorsal view, female (18.2 mm); 3, 4 – lateral view, male; 5 – frontal view, male; 6 – pronotum, male, dorsal view; 7 – left antenna, male, ventral view; 8 – hind tarsus, male, dorsal view; 9 – hind tarsus, male, ventral view; 10 – apical part of male abdomen. 11 – *Strigoptera bimaculata* (Linnaeus, 1758), apical part of male abdomen. 12 – *Pseudocastalia penrithae* Holm, 1982, holotype, wing. 13 – *Strigoptera obsoleta* Chevrolat, 1841, wing.



Figs. 14–17. *Acmaeodera* (*Acmaeotethya*), dorsal view. 14 – *A. holmi* Levey & Volkovitsh, 1996 (8.8 mm); 15 – *A. kabateki* sp. nov., holotype (5.4 mm); 16 – *A. hadiboe* sp. nov., holotype (3.4 mm); 17 – *A. socotraensis* sp. nov., paratype (6.2 mm).

the paratypes of *S.* (*Svatacesta*) *socotra* has shown that this species actually belongs to the Afrotropical genus *Pseudocastalia* Kraatz, 1896.

The principal diagnostic character of *Pseudocastalia* is the laterally deeply emarginated pronotal and elytral bases (Figs. 1–4, 6) and the opening the apical part of the mesepisterna appearing like teeth from above (Cobos 1980, Holm 1982); in *Strigoptera* the pronotal and elytral sides are contiguous or shallowly emarginated. Another important character is the presence of a short rudiment of AA3a' vein on the wings (Fig. 12) (terminology follows Fedorenko 2009), while in *Strigoptera* this rudiment is lacking (Fig. 13). Another reliable character to distinguish these genera is a lateral serration of the penis, well marked in *Strigoptera* (Fig. 21) and completely lacking in *Pseudocastalia* (Fig. 19). Finally, the shape of apical abdominal ventrite in males of *Pseudocastalia* (Fig. 10) differs from that in *Strigoptera* (Fig. 11). In accordance with this character set, *S. socotra* is transferred to the genus *Pseudocastalia* and the genus level name *Svatacesta* is treated as a junior subjective synonym of *Pseudocastalia*. The placement of this species into a separate subgenus is unwarranted.

Although all the specimens of *P. socotra* have been reared from wood, its host plant is still unknown.

Tribe Acmaeoderini Kerremans, 1893
Subtribe Acmaeoderina Kerremans, 1893

Genus *Acmaeodera* Eschscholtz, 1829

Acmaeodera (*Acmaeotethya*) *holmi* Levey & Volkovitsh, 1996

(Figs. 14, 22, 23)

Acmaeodera (*Acmaeotethya*) *holmi* Levey & Volkovitsh, 1996: 144, Figs. 3, 9, 10 (original description).

Type material. Holotype: ♂ (BMNH), [**YEMEN**] Socotra, Hadibo Plain, Ras H.M., Foothills 400 m, 30.iv.1967, K. Guichard // B.M. 1967-455. Paratypes (3 ♀♀): Socotra, Hadibo Plain, Kalansiya S.L., 25.iii.1967, K. Guichard (2 ♀♀ BMNH); same label, 0–500', 30.iv.1967, K. Guichard (1 ♀ BMNH).
Additional material examined (n = 25). **YEMEN**: Socotra Island: Ayhaft, 15.iii.2000, V. Bejček & K. Šťastný leg. (1 spec. VKCB; 1 ♂ microslide # 1731 ZIN); [Wadi] Ayhaft, 200 m, 12°36.5′ N, 53°58.9′ E, 7–8.xi.2010, L. Purchart leg. (1 ♀ NMPC); Calanthia, 29–30.iii.2000, V. Bejček & K. Šťastný leg. (1 spec. VKCB); Es Gedo (wadi), 24.ii.2000, V. Bejček & K. Šťastný leg. (1 spec. VKCB); Firmihin, 400–500 m, 12°28′27″ N, 54°0′54″ E, 6–7.ii.2010, yellow traps, L. Purchart & J. Vybíral leg. (1 ♀ NMPC); Hadiboh env., 21.xi.–12.xii.2003, 12°65′02″ N, 54°02′04″ E, 10–100 m (GPS), P. Kabátek leg., *ex larve* // *Croton socotranus* // Yemen, Soqotra, 2003 expedition J. Farkač, P. Kabátek & D. Král (1 ♀ NMPC; 2 spec. ZIN); Noged, 12°318′ N, 53°678′ E (GPS), 250 m, 27.ii.–1.iii.2000, V. Bejček & K. Šťastný leg. (7 spec. VKCB; 5 spec. ZIN); Qualentiah env., slopes 5 km SE from Quaysoh, 12°39′691″ N, 053°26′658″ E, 4–5.vi.2010, V. Hula & J. Niedobová leg. (1 ♀ NMPC); Qalansiyah env., N slopes Khayrha mts. 9–10.xii.2003, 12°38′50″ N, 53°27′45″ E, 85–592 m (GPS), P. Kabátek leg., *ex larve* // *Croton socotranus* // Yemen, Soqotra, 2003 expedition J. Farkač, P. Kabátek & D. Král (1 spec. NMPC); Wadi Daneghan, 4.x.1999, A. v. Harten (1 spec. GMCC); Zerik, 25–27.iii.2001, V. Bejček & K. Šťastný leg. (1 spec. VKCB).

Host plant. *Croton socotranus* Balf.f. (Euphorbiales, Euphorbiaceae) (first record).
Distribution. Yemen: Socotra Island.

Acmaeodera (*Acmaeotethya*) *kabateki* sp. nov.

(Figs. 15, 24, 25, 30)

Type locality. Yemen, Socotra Island, Wadi Deneghen, 12°36′55″ N, 54°03′49″ E, 85 m.
Type material. Holotype: ♂ (NMPC), **YEMEN**, Soqotra Is., Wadi Deneghen, 27.xi.2003, 12°36′55″ N, 54°03′49″ E, 85 m [GPS], leg. P. Kabátek, ex larve // *Croton socotranus* // YEMEN, SOQOTRA, 2003, Expedition: Jan Farkač, Petr Kabátek & David Král, 2003. Paratypes (6 ♂♂, 1 ♀): same data (1 ♂ NMPC; 1 ♂ microslide # 1876 ZIN); YEMEN, Soqotra Is., Suq, E env. – sand dunes, 22.xi.2003, 12°40′02″ N, 54°03′45″ E, 20–170 m [GPS], leg. P. Kabátek, ex larve // *Acacia pennivenia* // YEMEN, SOQOTRA, 2003, Expedition: Jan Farkač, Petr Kabátek & David Král, 2003 (1 ♂ NMPC); YEMEN, Soqotra Is., Hadiboh env., 21.xi.–12.xii.2003, N 12°65′02″, E 54°02′04″, 10–100 m (GPS), leg. P. Kabátek, *ex larve* // *Zizyphus spina-christi* // YEMEN, SOQOTRA, 2003, Expedition: Jan Farkač, Petr Kabátek & David Král, 2003 (1 ♂ MGCR; 1 ♂ microslide # 1830 ZIN); YEMEN, Socotra island, Firmihin, 400–500 m, N 12°28′27″, E 54°0′54″, 6–7.ii.2010, yellow traps, L. Purchart & J. Vybíral, lgt. (1 ♂ NMPC); YEMEN, Socotra island, Firmihin, 400–500 m, N 12°28′46″, E 54°00′89″, 18–19.vi.2010" V. Hula & J. Niedobová leg. (1 ♀ microslide # 1877 ZIN).

Description. Total length 5.6 (5.1–6.2) mm, width 1.6 (1.5–1.8) mm. Body (Fig. 15) small, elongate, 3.43 (3.29–3.60; n = 8) times as long as pronotum at base, slightly convex, without dorsal curvature; blackish-bronze with feeble copper or violet sheen, occasionally pronotal disc with bluish sheen; pronotal sides with large basal and smaller anterior yellow or orange maculae, the latter occasionally prolonged along anterior margin, disc usually with "V"-shaped prescutellar macula frequently broken into three small isolated spots; elytra black and brown

with yellow ochre or orange markings, without metallic sheen; elytral markings extremely variable, formed by irregular longitudinal and oblique stripes and confluent maculae; body dorsally covered with short, recumbent and semierect, white and brownish setae, ventrally with longer semierect white setae.

Head broad, flattened, vertex slightly depressed medially when seen from above; frons flattened, without medial line or depression, with weakly curved, markedly diverging sides. Vertex 1.92 (1.82–2.00) times as wide as transverse diameter of eye and 1.13 (1.10–1.17) times as wide as frons above antennal sockets. Clypeus rather narrow, with broad, shallow, arcuate medial emargination anteriorly. Frons with reticulate, occasionally changing to ocellate sculpture of small, round, umbilicate punctures with distinct semilunar inner granules and relatively large eccentric micropunctures; intervals about half the diameter of puncture, smooth; covered with short, semierect and recumbent white and brownish setae. Antennae expanded from antennomere 4 in both sexes; in male very long, 2.37 (1.97–2.69), in female 1.61 times as long as vertical diameter of eye; antennomere 2 elongate-oval, slightly swollen; antennomere 3 elongate, slender, feebly expanded towards apex; antennomere 4 abruptly expanded, triangular, slightly longer than wide; antennomeres 5–10 bluntly triangular, slightly longer than wide; antennomere 11 strongly elongate, oval; antennae of female similar but antennomeres less expanded.

Pronotum moderately convex, relatively long, 1.29 (1.19–1.33) times as wide at base as long, widest at midlength, occasionally just behind midlength or at posterior third; sides regularly arcuate. Anterior margin feebly bisinuate, slightly produced at centre, basal margin straight. Lateral carina fine, usually not reaching anterior corners, interrupted. Pronotal surface regularly convex, without medial depression or line; prescutellar fossa poorly marked, lateral fossae punctiform, sometimes inconspicuous. Pronotal sides with regular reticulate changing to pseudoalveolate (consisting of large, dense, deep punctures) sculpture of round umbilicate punctures with inconspicuous inner structure (central grains and micropunctures), not forming concentric rugosities toward disc; disc with pseudoalveolate sculpture of large deep simple punctures. Pronotum laterally with short, recumbent, white setae; disc with semierect white and brownish setae; laterally with large basal and smaller anterior yellow to orange maculae, anterior macula occasionally prolonged along anterior margin; disc with "V"-shaped prescutellar macula (Fig. 15) occasionally broken into three small spots or completely reduced. Anterior prosternal margin weakly emarginated, bordered with poorly marked groove; prosternum weakly convex, covered with punctate to pseudoalveolate sculpture of small, deep punctures; meso- and metaventrites with same sculpture. Pronotal hypomeron bearing ocellate sculpture of larger umbilicate punctures with distinct inner structure.

Elytra (Fig. 15) elongate, 2.49 (2.44–2.53) times as long as wide at base, slightly convex; sides weakly expanded at humeri, subparallel toward posterior 1/3, then arcuately converging to narrowly rounded apices. Subhumeral excision shallow but distinct; epipleural serrations poorly marked at posterior fourth, apical teeth saw-like. Strial punctures very big, deep, round, separate; discal striae visible up to base, wider than intervals forming punctate sculpture. Intervals very narrow, subequal except for wider lateral ones, at disc about half the diameter of strial punctures; 9th interval often elevated; intervals with fine, uniseriate or

confused biseriate punctures; background with delicate transverse rugosities. Elytra black and brown with yellow ocher or orange markings of *Acmaeodera* (*Acmaeotethya*) *cisti* Wollaston, 1862 or *A.* (*Palaeotethya*) *rubromaculata* Lucas, 1844 type, extremely variable, formed by irregular longitudinal and oblique stripes and confluent maculae; sometimes light elements dominating; covered with short (less than wide of interval), semierect, uni- and confused biseriate, white, occasionally mixed with brownish setae.

Legs black or blackish brown, occasionally with bronzy sheen; metacoxal plates with posterior margin nearly straight or slightly emarginate, without lateral tooth. Tibiae slender, feebly widened toward apices; metatibiae bearing comb of brownish setae externally. Tarsomeres subequal, short; tarsomere 5 slender; tarsal pads poorly developed on tarsomeres 1–3, each larger toward distal end. Tarsal claws long, curved, with internal tooth reaching apical third in male; in female, shorter, reaching about midlength.

Abdomen blackish-bronze with coppery sheen; covered with uniform pseudoalveolate sculpture of big, dense, simple punctures and semierect white setae. Anal ventrite in male short, regularly rounded apically, that in female longer and bordered with a groove.

Male: Aedeagus as in Figs. 24, 25. Penis elongate, nearly parallel-sided; lamina (see Volkovitsh 1979, Figs. 33, 48) long, narrow, stripe-like; apical apodeme narrow.

Female: Ovipositor (Fig. 30) of typical tubular type, long, approximately 3.5 times as long as expanded apical part, with emarginated apex.

Differential diagnosis. *Acmaeodera* (*Acmaeotethya*) *kabateki* sp. nov., *A.* (*A.*) *hadiboe* sp. nov. and *A.* (*A.*) *socotraensis* sp. nov. described below belong to the Afrotropical *A.* (*A.*) *signata* species-group (Volkovitsh 1979) and comes close to *A.* (*A.*) *puberula* Solier, 1833 and *A.* (*A.*) *alcmeone* Thomson, 1878 from South Africa and Namibia, particularly in the big strial punctures which are wider than in African species. Based on the elytral markings, some specimens are externally similar to *A.* (*A.*) *vanharteni* Volkovitsh, 2011 (*A.* (*A.*) *cisti* species-group) from the Arabian Peninsula, but can be distinguished easily by the wide striae, extensive pronotal markings and male genitalia structure. *A.* (*A.*) *kabateki* sp. nov. differs from *A.* (*A.*) *hadiboe* sp. nov. and *A.* (*A.*) *socotraensis* sp. nov. by the elongate body (3.43 times as long as pronotum at base), wider striae, pronotal markings, and, particularly, male genitalia structure (Figs. 24–29). Additionally, it differs from *A.* (*A.*) *hadiboe* sp. nov. by darker and more contrasting elytral markings, reticulate sculpture of head, pronotal sides and pronotal hypomeron, composed of umbilicate punctures, unicolorous tibiae and tarsi; from *A.* (*A.*) *socotraensis* sp. nov. – by lighter coloration with metallic sheen, lack of dorsal curvature, frontal sides less strongly diverging to vertex, longer antennae of male, regularly rounded pronotal margins, extensive pronotal markings, indistinct elytral serration, and predominantly semierect pilosity.

Etymology. The species name is dedicated to Petr Kabátek (Praha, Czech Republic), the first collector of this species.

Host plants. All specimens collected by P. Kabátek have been reared from the host plants: *Croton socotranus* Balf.f. (Euphorbiales: Euphorbiaceae), *Acacia pennivenia* Schweinf. (Fabales: Fabaceae), *Zizyphus spina-christi* (L.) Dest. (Rhamnales: Rhamnaceae).

Distribution. Yemen: Socotra Island.

Acmaeodera (*Acmaeotethya*) *hadiboe* sp. nov.

(Figs. 16, 26, 27)

Type locality. Yemen, Socotra Island: Hadiboh, Qualentiah env., slopes 5 km SE from Quaysoh, 12°39,691′ N 053°26,658′ E.

Type material. Holotype: ♀ (NMPC), **YEMEN**, Socotra isl., Qualentiah env., slopes 5 km SE from Quaysoh, N 12°39,691′, E 053°26,658′, 4–5.vi.2010, V. Hula & J. Niedobová leg. Paratypes (1 ♂, 1 ♀): YEMEN, Soqotra Is., Hadiboh env., 21.xi.–12.xii.2003, N 12°65′02″, E 54°02′04″, 10–100 m (GPS), leg. P. Kabátek, *ex larve* // *Zizyphus spina-christi* // YEMEN, SOQOTRA, 2003, Expedition: Jan Farkač, Petr Kabátek & David Král, 2003 (1 ♂, microslide # 1879, ZIN); YEMEN, Socotra isl., found dead in rent car, 11.vi.2010, V. Hula & J. Niedobová leg." (1 ♀ NMPC, strongly damaged).

Description. Total length 4.4 (3.4–5.1) mm, width 1.4 (1.1–1.7) mm. Body (Fig. 16) small, relatively short, 3.13 (3.00–3.29; n = 3) times as long as pronotum at base, flattened, without dorsal curvature; coppery-bronze with copper or violet sheen; pronotal sides with large basal and smaller anterior yellow maculae; elytra mainly yellow with brown markings, without metallic sheen; elytral markings variable, more or less reticulate; tibiae and tarsi yellowish; body dorsally covered with short, recumbent and semierect, white and brownish setae, ventrally with longer recumbent white setae.

Head broad, flattened when seen from above; frons slightly convex, without medial line or depression, with weakly curved or nearly straight, markedly diverging sides. Vertex 1.95 (1.91–2.00) times as wide as transverse diameter of eye and 1.15 (1.10–1.20) times as wide as frons above antennal sockets. Clypeus rather narrow, with broad, shallow, arcuate medial emargination anteriorly. Frons with pseudoalveolate sculpture of big, deep simple punctures without inner structures; intervals about half the diameter of puncture, smooth; covered with short, semierect and recumbent white and brownish setae. Antennae expanded from antennomere 4 in both sexes; in male long, 2.30, in female 1.77 times as long as vertical diameter of eye; in male antennomere 2 elongate-oval, slightly swollen; antennomere 3 elongate, slender, thin, slightly longer than 2nd; antennomere 4 abruptly expanded, triangular, slightly longer than wide; distal antennomeres 4–10 triangular, nearly 1.5 times longer then wide; antennomere 11 missing; in female antennomere 3 slightly expanded apically; antennomere 4 triangular, slightly longer than wide; antennomeres 5–10 triangular, slightly longer than wide; antennomere 11 shortly oval.

Pronotum (Fig. 16) moderately convex, 1.36 (1.31–1.40) times as wide at base as long, widest at posterior third; anterior of widest point sides longer, converging toward anterior angles, posterior of widest point sides shorter, converging towards posterior angles. Anterior margin feebly bisinuate, slightly produced at middle, basal margin straight. Lateral carina fine, usually not reaching anterior corners, interrupted or lacking. Pronotal surface regularly convex, without medial depression or line; prescutellar fossa poorly marked or absent, lateral fossae punctiform, inconspicuous. Pronotum with uniform pseudoalveolate sculpture of deep simple punctures without inner structure, not forming concentric rugosities toward disc; covered with short, recumbent and semierect white and brownish setae. Pronotal sides with yellow to orange, bigger basal macula, sometimes reaching midlength, and smaller anterior macula. Anterior prosternal margin weakly emarginated, bordered with poorly marked groove; prosternum regularly convex, covered with punctate sculpture of small, deep punctures;

meso- and metaventrites with same sculpture. Pronotal hypomeron bearing pseudoalveolate sculpture of simple punctures without inner structure.

Elytra (Fig. 16) relatively short, 2.22 (2.06–2.31) times as long as wide at base, flattened; sides weakly expanded at humeri, slightly diverging or subparallel toward posterior third, then arcuately converging to regularly rounded apices. Subhumeral excision very shallow, poorly defined; epipleural serrations poorly marked, saw-like at posterior 1/3, apical teeth claw-like. Strial punctures big, deep, round, separate; discal striae visible up to base. Intervals narrow, nearly as wide as striae, except for wider lateral ones; 9th interval elevated; intervals flat, with very small inconspicuous punctures; background finely shagreened, dull. Elytra mainly yellow with slightly contrasting brownish markings of reticulate *Acmaeodera* (*Palaeotethya*) *rubromaculata* type, formed by irregular longitudinal and oblique stripes and confluent maculae, occasionally strongly reduced; covered with short, semierect, uni- and confused biseriate, white or white and brownish setae.

Legs: Femora black and brown, tibiae and tarsi yellowish (Fig. 16); metacoxal plates with posterior margin feebly emarginated, without lateral tooth. Tibiae slender, not widened toward apices; metatibiae bearing comb of brownish setae externally. Tarsomeres subequal, short; tarsomere 5 slender; tarsal pads poorly developed on tarsomeres 1–3, each larger toward apex. Tarsal claws long, curved, with internal tooth at apical third in both sexes.

Abdomen bronze with copper sheen; covered with uniform pseudoalveolate sculpture of big, dense, simple punctures and recumbent white setae. Anal ventrite in male short, transversely depressed, widely arcuate and slightly emarginate apically; in female widely arcuate and slightly deflected apically.

Male: Aedeagus as in Figs. 26, 27. Penis short, expanded medially; lamina short, triangular, widened toward base; apical apodeme wide.

Female: Ovipositor not examined.

Differential diagnosis. *Acmaeodera* (*Acmaeotethya*) *hadiboe* sp. nov. differs from *A.* (*A.*) *kabateki* sp. nov. and *A.* (*A.*) *socotraensis* sp. nov. by lighter coppery-bronze body and lighter elytra, uniformly pseudoalveolate sculpture of head, pronotum and pronotal hypomeron, shallow subhumeral excision of elytra, yellowish tibiae and tarsi, and, particularly, structure of the male genitalia (Figs. 24–29). Additionally, *A.* (*A.*) *hadiboe* sp. nov. differs from *A.* (*A.*) *kabateki* sp. nov. by a shorter body (3.13 times as long as pronotum at base), reduced pronotal markings, slightly contrasting and light elytral markings; from *A.* (*A.*) *socotraensis* sp. nov. it differs by its lighter metallic body coloration, lack of dorsal curvature, frontal sides diverging less toward vertex, antennae of male longer, pronotal margins without distinct lateral projections, elytral serrations poorly marked, and semierect pilosity of pronotal disc, elytra and abdomen.

Etymology. The specific epithet derives from the name of the capital of Socotra Island, Hadibo.

Host plant. *Zizyphus spina-christi* (L.) Dest. (Rhamnales: Rhamnaceae). One specimen has been reared by P. Kabátek from the same host plant at the same locality (Hadibo env.) as two paratypes of *A. kabateki* sp. nov.

Distribution. Yemen: Socotra Island.

Acmaeodera (*Acmaeotethya*) *socotraensis* sp. nov.

(Figs. 17, 28, 29)

Type locality. Yemen, Socotra Island: Kesa env., 12°39′37″N 53°26′42″E, 220–300 m.
Type material. Holotype: ♀ (NMPC), **YEMEN**, Socotra island E, Kesa env., 220–300 m, yellow traps, N 12°39′37″, E 53°26′42″, 28–29.i.2010, L. Purchart lgt. Paratypes: (1 ♂ NMPC; 1 ♂ microslide # 1880, ZIN): same data.

Description. Total length 5.6 (4.3–6.4) mm, width 1.8 (1.3–2.1) mm. Body (Fig. 17) small, relatively short, 3.15 (3.05–3.31; n = 3) times as long as pronotum at base, convex, with slight dorsal curvature; black, occasionally with feeble bronzy or bluish sheen; pronotum strongly widened at posterior third, with small sub-basal yellow or orange macula; elytra black or black and brown with yellow ochre or orange markings consisted of irregular isolated and confluent maculae sometimes forming interrupted transverse fascia, occasionally with sub-basal and pre-apical maculae; entire body covered with short, recumbent white and brownish setae.

Head broad, flattened when seen from above; frons flattened, without medial line or depression, with weakly curved, strongly diverging sides. Vertex 1.91 (1.87–1.95) times as wide as transverse diameter of eye and 1.23 (1.19–1.27) times as wide as frons above antennal sockets. Clypeus rather wide, with relatively deep, arcuate medial emargination anteriorly. Frons with coarse, nearly alveolate sculpture of deep, irregular umbilicate alveolae with poorly defined inner granules and micropunctures; intervals less than half of diameter of alveola; covered with short, recumbent white setae. Antennae expanded from antennomere 4 in both sexes; in male long, 1.95 (1.85–2.04) times, in female 1.58 times as long as vertical diameter of eye; antennomere 2 shortly oval, slightly swollen; antennomere 3 elongate, slender, feebly expanded toward apex; antennomere 4 triangular, nearly as long as wide; distal antennomeres 5–10 abruptly triangular, slightly wider than long; antennomere 11 irregularly oval, longer than wide, apically truncate or slightly emarginated; antennae of female similar but antennomeres less expanded, antennomere 4 distinctly narrower than antennomere 5, antennomere 11 rhomboidal.

Pronotum (Fig. 17) slightly convex, transverse, 1.42 (1.35–1.46) times as wide at base as long, widest at posterior third, sides distinctly projecting laterally, anterior of widest point margins longer, converging to anterior angles, posterior of widest point margins shorter and almost rectilinearly converging to posterior angles. Anterior margin feebly bisinuate, slightly produced at middle, basal margin straight. Lateral carina fine, not reaching anterior corners, interrupted or lacking. Pronotal surface convex, occasionally with a shallow medial depression; basal fossae rather deep, depressed. Pronotum laterally with coarse alveolate sculpture of deep alveolae with inconspicuous inner structure, not forming concentric rugosities towards the disc; disc with pseudoalveolate sculpture of large deep simple punctures. Entire pronotum with short, recumbent, white setae; sides with small orange sub-basal maculae. Anterior prosternal margin nearly straight, bordered with a distinct groove; prosternum convex, covered with pseudoalveolate sculpture; meso- and metaventrites with the same sculpture. Pronotal hypomeron bearing reticulate sculpture of large, round, umbilicate punctures, occasionally forming concentric series.

Elytra (Fig. 17) relatively short, 2.22 (2.06–2.32) times as long as wide at base, moderately convex; sides widened at humeri, slightly diverging toward posterior 1/3, then shortly arcu-

ately converging to the narrowly rounded apices. Subhumeral excision shallow but distinct; epipleural serrations well marked at posterior third, apical teeth claw-like, easily seen from above. Strial punctures very large, deep, round, separated; discal striae wider than intervals, not visible at basal fourth becoming coalescent with the very coarse sculpture of the intervals. Intervals very narrow, subequal, except for the wider lateral ones, on the disc about half of diameter of the strial punctures; 9th interval distinctly swollen at posterior third; covered with fine, uniseriate punctures; with transverse rugose sculpture, much coarser at base. Elytra black or black and brown with yellow ochre or orange markings consisting of irregular isolated and confluent maculae sometimes forming interrupted transverse fascia, occasionally with sub-basal and pre-apical maculae; covered with short, recumbent, uniseriate, white setae.

Legs blackish-brown, unicolourous; metacoxal plates with posterior margin nearly straight or slightly emarginate, without lateral tooth. Tibiae feebly widened toward apices; metatibiae bearing comb of white setae externally. Tarsomeres subequal, short; tarsomere 5 slightly swollen; tarsal pads developed on tarsomeres 1–4, each larger toward apex. Tarsal claws curved, with small internal tooth at midlength in both sexes.

Abdomen black without or with a feeble copper sheen; covered with uniform pseudoalveolate sculpture of large, dense, simple punctures and short, recumbent white setae. Anal ventrite in male short, regularly rounded, bordered with a groove apically; that of female widely rounded and indistinctly bordered with a groove apically.

Male: Aedeagus as in Figs. 28, 29. Penis elongate, expanded toward apex; lamina short, triangular, expanded toward base; apical apodeme wide.

Female: Ovipositor not examined.

Differential diagnosis. *Acmaeodera* (*Acmaeotethya*) *socotraensis* sp. nov. differs from *A.* (*A.*) *kabateki* sp. nov. and *A.* (*A.*) *hadiboe* sp. nov. by its black body, dorsal curvature, more strongly diverging frontal sides, coarse alveolate sculpture of head and lateral part of pronotum, shorter antennae in male, strongly projecting pronotal margins, elytral striae not reaching the base, entirely recumbent pilosity, distinct elytral serration, and, particularly, male genitalia structure (Figs. 24–29). Additionally, it differs from *A.* (*A.*) *kabateki* sp. nov. by shorter body and reduced pronotal and elytral markings; from *A.* (*A.*) *hadiboe* – by unicoloured tibiae and tarsi and much darker elytra.

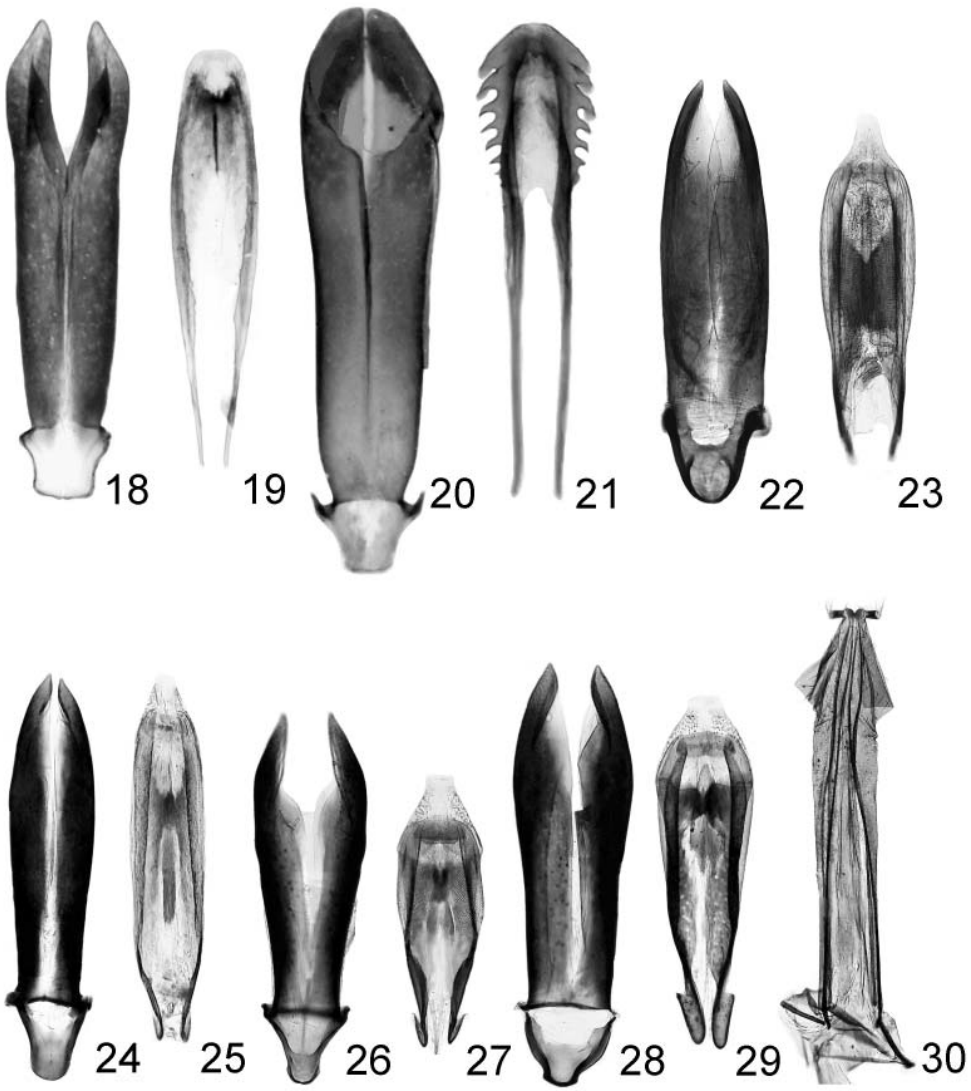
Etymology. The specific epithet derives from the name of Socotra Island.

Host plant. Unknown.

Distribution. Yemen: Socotra Island.

Key to the species of *Acmaeodera* (*Acmaeotethya*) of Socotra Island

1. Lateral margins of pronotum entirely bordered with orange marginal bands; elytra with four regular, wide, transverse, orange fascia which do not reach the suture (Fig. 14). Clypeus broad, with very deep angular emargination anteriorly. 5.5–10.2 (8.1) mm. Aedeagus – Figs. 22, 23. ..... ***A. (A.) holmi*** Levey & Volkovitsh, 1996
– Lateral margins of pronotum with isolated maculae at anterior and posterior corners, sometimes with additional maculae at prescutellar area and along anterior margin or without markings; elytra with irregular markings of isolated and confluent maculae and bands,



Figs. 18–30. Polycestinae, aedeagi and ovipositor, dorsal view. 18, 19 – *Pseudocastalia socotra* (Zabransky, 2004), paratype (18 – tegmen, 1.8 mm; 19 – penis, 1.4 mm); 20, 21 – *Strigoptera bimaculata* (Linnaeus, 1758) (20 – tegmen, 3.2 mm; 21 – penis, 2.7 mm); 22, 23 – *Acmaeodera* (*Acmaeotethya*) *holmi* Levey & Volkovitsh, 1996 (microslide # 1731) (22 – tegmen, 2.0 mm; 23 – penis, 1.5 mm); 24, 25 – *A.* (*A.*) *kabateki* sp. nov., paratype (microslide # 1876) (24 – tegmen, 1.45 mm; 25 – penis, 1.2 mm); 26, 27 – *A.* (*A.*) *hadiboe* sp. nov., paratype (microslide # 1879) (26 – tegmen, 1.4 mm; 27 – penis, 0.8 mm); 28, 29 – *A.* (*A.*) *socotraensis* sp. nov., paratype (microslide # 1880) (28 – tegmen, 1.7 mm; 29 – penis, 1.3 mm); 30 – *A.* (*A.*) *kabateki* sp. nov., paratype (microslide # 1877), ovipositor (1.9 mm).

occasionally forming more or less regular longitudinal, transverse and oblique fascia (Figs. 15–17). Clypeus narrow, with an arcuate emargination anteriorly. 3.4–6.4 (5.4) mm. ... 2

2. Tibiae and tarsi yellowish; head, pronotum and hypomeron with psedoalveolate sculpture of simple punctures. Elytra pale with reticulate, little contrasting markings (Fig. 16). Aedeagus as in Figs. 26, 27. ..... ***A.* (*A.*) *hadiboe* sp. nov.**
– Tibiae and tarsi dark, unicoloured; head and hypomeron with reticulate sculpture of umbilicate punctures. 3
3. Longer, 3.43 (3.29–3.60) times as long as wide. Lateral margins of pronotum regularly rounded; body blackish-bronzy with a distinct metallic sheen; without dorsal curvature; distal antennomeres 4–10 longer than wide; pronotal markings extensive, usually with prescutellar maculae (Fig. 15); pilosity mainly semierect. Aedeagus as in Figs. 24, 25. ... . ***A.* (*A.*) *kabateki* sp. nov.**
– Shorter, 3.15 (3.05–3.31) times as long as wide. Lateral margins of pronotum angularly projecting; body black without a distinct metallic sheen; dorsal curvature present; distal antennomeres 4–10 wider than long; pronotal markings reduced to small maculae at posterior corners (Fig. 17) or lacking; entire pilosity recumbent. Aedeagus as in Figs. 28, 29. ..... ***A.* (*A.*) *socotraensis* sp. nov.**

Discussion

The Polycestinae from Socotra Island demonstrate exclusively African affinities with no connection to Palaearctic groups. *Pseudocastalia* is an Afrotropical genus [4–5 African species, with only *P. arabica* (Gestro, 1877) reaching the Arabian Peninsula and possibly introduced into South-East Asia (Holm 1982; Bílý et al. 2011)]. All the Socotran *Acmaeodera* species belong to the Afrotropical *A.* (*Acmaeotethya*) *signata* species-group (Volkovitsh 1979) with closest relations to *A.* (*A.*) *puberula* and *A.* (*A.*) *alcmeone* in South Africa and Namibia. This most interesting disjunction may be explained as follows: before Socotra was separated from Dhofar region of the Southern Oman (Samuel et al. 1997) in the Miocene (15–25 mya) and drifted to its current position, the *A.* (*A.*) *signata* species-group has been widely distributed throughout the African continent and the Arabian Peninsula while currently its range is limited to South Africa (mainly Cape), Namibia and adjacent countries, as well as Socotra Island. An interesting feature of all Socotran *Acmaeodera* species is the extremely wide elytral striae, except for *A.* (*A.*) *holmi*, in which however the striae are also distinctly widened. Expanded striae occur in other insular species and subspecies of Acmaeoderini, for example, *A.* (*Acmaeodera*) *flavolineata cypricola* Volkovitsh, 1983, *A.* (*Palaeotethya*) *bipunctata guillebaui* Abeille de Perrin, 1891 and *Acmaeoderella* (*Liogastria*) *pseudovirgulata* Volkovitsh & Bílý, 1979 from Cyprus but in these forms intervals equal or are slightly wider than striae.

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