

## Alticinae (Coleoptera: Chrysomelidae) of Socotra Island

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**Abstract.** Data on Alticinae from Socotra Island (Yemen) are presented for the first time. Altogether, 17 species in ten genera are recorded including the following new taxa: *Aphthona socotrana* sp. nov., *Bezdekaltica* gen. nov. with *B. socotrana* sp. nov. as the type species, *Luperomorpha biondii* sp. nov., and *Yemenaltica furthi* sp. nov. Three species of *Aphthona* Chevrolat, 1836, two of *Eriotica* Harold, 1877, and one of *Longitarsus* Latreille, 1829 remain unidentified. New synonymy is proposed: *Hermaeophaga ruficollis* (Lucas, 1847) = *Lactica unicolor* Jacoby, 1886, syn. nov. Lectotypes are designated for *Lactica unicolor* and *Podagrica puncticollis* Weise, 1902. Aedeagi, spermathecae, and habiti are illustrated for all species.

**Key words.** Coleoptera, Chrysomelidae, Alticinae, new genus, new species, taxonomy, new records, new synonymy, Yemen, Socotra

### Introduction

Alticinae of Socotra remained unknown until recently, up to the present no species has been reported. The material collected almost exclusively during the Czech expeditions to Socotra between the years 2000–2012 includes 17 species, six of which remain unidentified to species level.

The Socotran Alticinae are composed of the Palaearctic, African and endemic faunistic elements. The Palaearctic species are: *Hermaeophaga (Orthocrepis) ruficollis* (Lucas, 1847), *Ph. procera* L. Redtenbacher, 1849, and *Psylliodes persica* Allard, 1867. The African species are represented by *Aphthona pusilla* Laboissière, 1942, *Longitarsus buettikeri* Doguet, 1984, *Phyllotreta cheiranthi* Weise, 1903, two unidentified species of *Eriotica* sp., and *Podagrica puncticollis* Weise, 1902. Four species are Socotran endemics: *Aphthona socotrana* sp. nov., *Bezdekaltica socotrana* gen. et sp. nov., *Luperomorpha biondii* sp. nov., and *Yemenaltica furthi* sp. nov. Further studies are necessary to find out more about Socotran flea beetles.

### Material and methods

Descriptions and drawings were made using a WILD-binocular at 50 × magnification. The habitus photographs were taken using a Canon MP-E 65mm/2.8 1-5x Macro on bellows attached to a Canon EOS 550D camera. Partially focused images of each specimen were

combined using Helicon Focus 5.1 Pro software. The examined material is stored in the following collections:

JBCB	Jan Bezděk collection, Brno, Czech Republic;
CULS	Faculty of Forestry, Czech University of Life Sciences, Prague, Czech Republic (Jan Farkač);
MBCA	Maurizio Biondi collection, L'Aquila, Italy;
MCCI	Museo civico di Storia naturale di Carmagnola, Italy (Gianni B. Del Mastro);
MDCA	Manfred Döberl collection, Abensberg, Germany;
MSNG	Museo Civico di Storia Naturale 'Giacomo Doria', Genova, Italy (Roberto Poggi);
NMPC	National Museum, Praha, Czech Republic (Jiří Hájek);
ZMHB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Johannes Frisch, Joachim Willers).

Exact label data are cited for all type specimens; a double slash (//) divides data on different labels and a single slash (/) divides data in different rows. Other comments, remarks and abbreviations are placed in square brackets: [p] – preceding data are printed, [h] – preceding data are handwritten, [w] – white label, and [r] – red label.

In accordance with the sixth volume of Palaearctic Coleoptera (DÖBERL 2010) Alticinae are treated as a subfamily and not as a tribe within Galerucinae.

## Systematics

### *Aphthona pusilla* Laboissière, 1942

(Figs. 1, 15, 26)

**Material examined** (40 spec.). **YEMEN: SOCOTRA ISLAND:** Zemhon area, 10°30'58"N 54°6'39"E, 270-350 m, 3.-4.ii.2010, 5 spec. unsexed, L. Purchart & J. Vybíral leg. (3 in JBCB, 2 in MDCA); Al Haghier Mts., Scant Mt. env., 12°34.6'N 54°01.5'E, 1450 m, 12.-13.xi.2010, 2 spec. unsexed, J. Bezděk leg. (JBCB); Al Haghier Mts., Wadi Madar, 12°33.2'N 54°00.4'E, 1180-1230 m, 12.-14.xi.2010, 2 spec. unsexed, J. Bezděk leg. (JBCB); Aloove area, Hassan vill. env., 12°31.2'N 54°07.4'E, 221 m, 9.-10.xi.2010, 1 spec. unsexed, J. Bezděk leg. (JBCB); Sirhin area, Dixam plateau, 12°31.8'N 53°59.9'E, 812 m, 1.-2.xii.2003, 2 spec. unsexed, P. Kabátek leg. (NMPC); Hadiboh env., 12°65'02"N 54°02'04"E, 10-100 m, 21.xi.-12.xii.2003, 23 spec. unsexed, D. Král leg. (NMPC); Noked plain, Qaareh (waterfall), 12°20'10"N 53°37'56"E, 57 m, 5.-6.xii.2003, 2 spec. unsexed, D. Král leg. (NMPC); Dixam plateau, Wadi Zeeriq, 12°31'08"N 53°59'09"E, 750 m, 3.xii.2003, 2 spec. unsexed, D. Král leg. (NMPC); Shibhon plateau, Eserhe, 12°25.5'N 53°56.6'E, 547 m, 13.vi.2012, 1 spec. unsexed, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg. (NMPC).

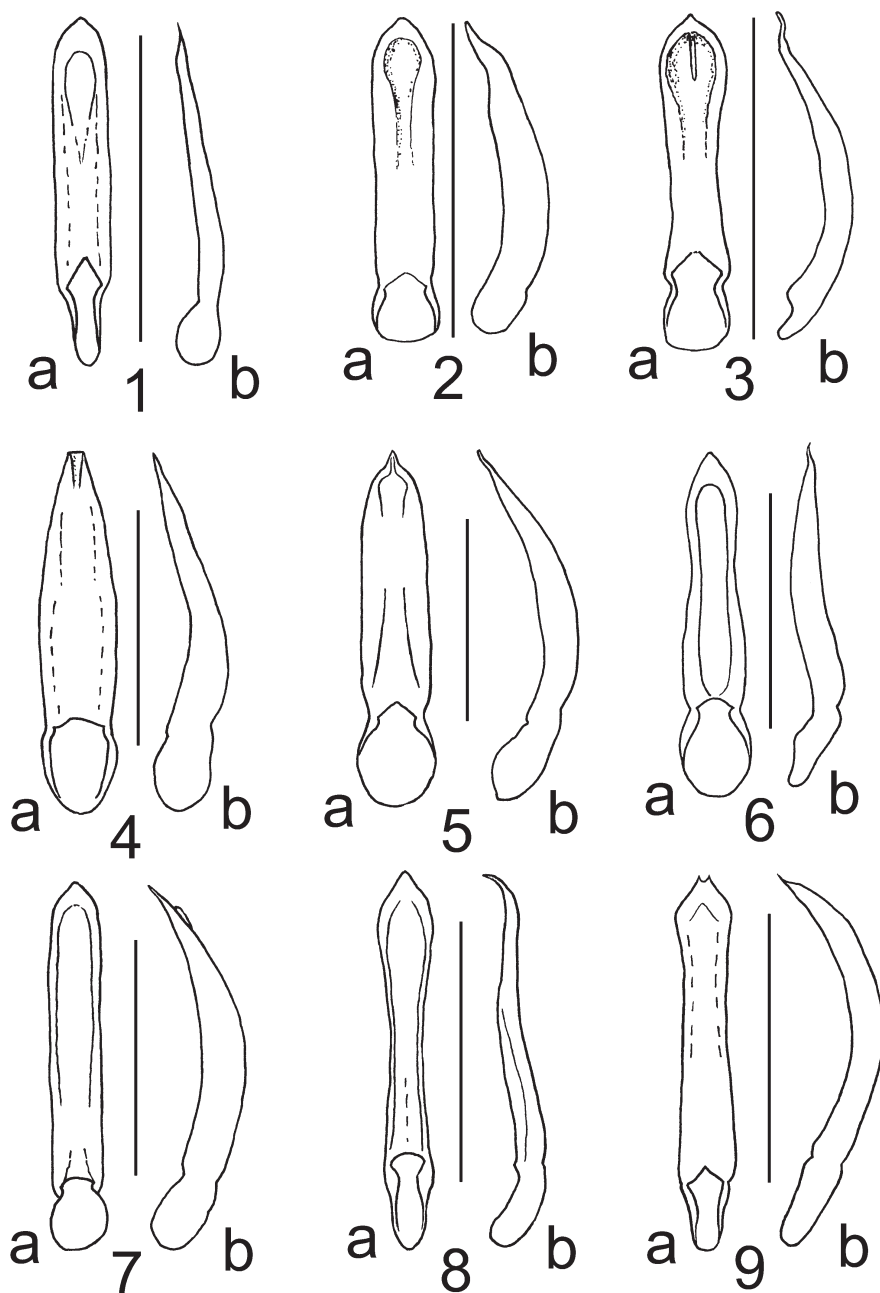
**Distribution.** *Aphthona pusilla* is an African species described from Democratic Republic of Congo (LABOISSIÈRE 1942), known also from Eritrea, Ethiopia, Guinea, Nigeria, Rwanda, Burundi and Sierra Leone (SCHERER 1972, BIONDI 1994). Possibly it occurs also in Oman – reported as '*Aphthona* sp. 1' by DOGUET (1984a) (this record was repeated by MEDVEDEV 1996, but erroneously attributed to Saudi Arabia). **First record from Socotra Island.**

### *Aphthona socotrana* sp. nov.

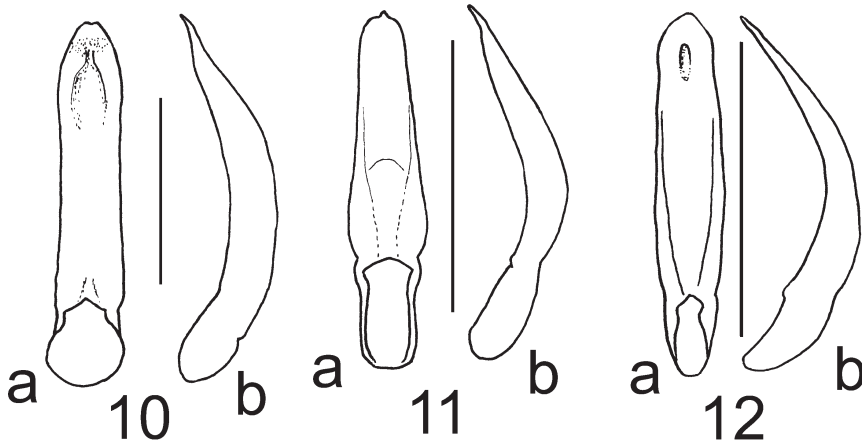
(Figs. 2, 16, 27)

**Type locality.** Yemen, Socotra Island, Zemhon area, 12°30'58"N 54°06'39"E.

**Type material.** HOLOTYPE: ♂ (NMPC), 'YEMEN, SOCOTRA Island / Zemhon area, 270-350 m / N 12°30'58", E 54°06'39" / 3.-4.ii.2010 / L. Purchart & J. Vybíral leg. [w, p]'. PARATYPES: 1 ♀, 'Republic of Yemen 4-5.6.2010 / Socotra Isl. / Qualentiah env. / slopes 5 km SE from Quaysoh / N 12°39,691', E 053°26,658' / lgt. V. Hula & Niedobová, J. [w, p]' (JBCB); 1 ♀, 'YEMEN, Socotra Island / wadi Ayhaft / 12°36.5'N, 53°58.9'E, 200 m / J. Bezděk leg., 7-8.xi.2010 [w, p]' (MDCA). The specimens are provided with two additional labels: '*Aphthona / socotrana* mihi / des. Döberl 2011 [w, p]' and 'Holotypus [Paratypus, resp.] [r, p]'.



Figs. 1–9. Aedeagus (a – ventral view, b – lateral view). 1 – *Apthona pusilla* Laboissière, 1942; 2 – *A. socotrana* sp. nov.; 3 – *Bezdekaltica socotrana* sp. nov.; 4 – *Eriotica* sp. B; 5 – *Hermaeophaga ruficollis* (Lucas, 1849) (specimen from Oman); 6 – *Longitarsus buettikeri* Doguet, 1984; 7 – *Luperomorpha biondii* sp. nov.; 8 – *Phyllotreta cheiranthi* Weise, 1903 (specimen from Yemen); 9 – *P. procera* (Redtenbacher, 1849). Scale bar: 0.5 mm.



Figs. 10–12. Aedeagus (a – ventral view, b – lateral view). 10 – *Podagrica puncticollis* Weise, 1902; 11 – *Psylliodes persica* Allard, 1867 (specimen from Iran); 12 – *Yemenaltica furthi* sp. nov. Scale bar: 0.5 mm.

**Description.** Body length/width: male (holotype) 2.0/0.9 mm; females 1.9/0.8 mm.

**Male** (holotype, Fig. 27). Body subparallel, glabrous, semiopaque, pale brown. Vertex, meso-, metaventrite and most of abdomen dark brown. Antennae gradually darkened from antennomere IV. Legs pale brown.

Head subquadratic, supracallinal sulcus bent upwardly at level of antennal insertions and running to posterior ocular margin. Antennal calli roundabout, well delimited by incised lines, oval, smooth, protruding, separated anteriorly by upper end of frontal ridge. Ratio of distances between inner and outer margin of eyes 1:1.7. Vertex and frons shining smooth. Antennae thin, 0.75 times as long as body, proportions of antennomeres are as follows: 10:7:8:10:14:13:16:14:12:12:14 (1 = 0.01 mm).

Pronotum subquadrate, 1.35 times as wide as long. Surface lustrous, indistinctly covered with fine punctures. Anterior margin nearly straight, lateral margins slightly rounded, posterior margin widely rounded. Lateral and posterior margins narrowly bordered. Anterior angles obliquely truncate, anterior setigerous pore bearing long pale seta placed on lateral margin close to anterior angle. Posterior angles rounded but indicated by small setiferous pore.

Scutellum small, trigonate, with rounded tip. Elytra subparallel, 0.68 times as long as body, 1.6 times as long as wide (measured at humeral calli). Surface finely chagreened and densely covered with fine shallowly impressed punctures in uncountable irregular rows, interstices form indistinct weak costae. Winged, humeral calli well developed.

Protarsomere I elongate, dilated, with sides slightly rounded, as wide as protarsomere III. Length ratios of protarsomeres I–IV equal to 5-3-3-4. Metatarsomere I thin, 0.35 times as long as metatibia. Length ratios of metatarsomeres I–IV equal to 7-5-3-5.

Aedeagus moderately bent in lateral view, ventrally with large spoon-shaped impression (Fig. 2). Apical ventrite with two small triangular incisions on posterior margin.

**Female.** Protarsomere I with sides straight, narrower than protarsomere III. Apical ventrite evenly rounded. Spermatheca (Fig. 16): nodulus globular, cornu thin, in middle bent in angle ca 45°.

**Variability.** One specimen has indistinct dark spot on anterior part of each elytron near basal border between suture and humerus.

**Differential diagnosis.** *Aphthona socotrana* sp. nov. is characterised by the unusually costate elytra; due to this character it cannot be confused with any other *Aphthona* species. Similar structure of elytra can be found also in the genera *Anthobiodes* and *Yemenaltica*, but species of these genera have metatarsomere I longer, nearly as long as half of the length of the metatibia (much shorter in *Aphthona* species).

**Etymology.** Named after the patria of its origin, the Socotra Island.

**Distribution.** Yemen: Socotra Island

### *Aphthona* sp. A

(Fig. 28)

**Material examined:** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Dixam plateau, Wadi Esgego, 12°28'09"N 54°00'36"E, 300 m, 2.-3.xii.2003, 1 ♀, J. Farkač leg. (NMPC).

**Diagnosis.** Teneral female. Body glabrous, yellow, head black with brown mouthparts, antennae gradually darkened from antennomere VI, scutellum dark brown, meso-, metaventrite and abdomen darkened. Pronotum 1.40 times as wide as long, lustrous, impunctate, anterior margin straight, posterior margin moderately rounded, lateral margins almost straight, parallel. Elytra dull, 0.70 times as long as body, 1.80 times as long as wide, covered with microsculpture and fine indistinct confused punctures. Body length: 2.1 mm.

### *Aphthona* sp. B

(Fig. 29)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** ca. 5 km W of Hadibo, coastal road, shrubby area, 13.vi.2009, 1 ♀, L. Purchart leg. (JBCB).

**Diagnosis.** Body glabrous, completely pale brown, only mouthparts and three apical antennomeres apically slightly darkened. Pronotum 1.70 times as wide as long, covered with dense fine punctures, anterior margin straight, posterior margin rounded, lateral margins slightly rounded, distinctly convergent anteriorly. Elytra convex, subparallel, 0.70 times as long as body, 1.40 times as long as wide, densely covered with small confused punctures. Body length: 3.8 mm.

### *Aphthona* sp. C

(Fig. 30)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Thar area, pitfall trap, 24.ii.2009, 1 ♀ (MCCI).

**Diagnosis.** Teneral female. Body glabrous, brown with feeble metallic tint, antennae yellow, gradually darkened from antennomere VI, legs yellow, metafemora brown. Pronotum 1.43 times as wide as long, distinctly covered with fine punctures, anterior margin straight, posterior

margin rounded, lateral margins slightly rounded. Elytra convex, lateral margins rounded, widest in the middle, 0.63 times as long as body, 1.30 times as long as wide, sparsely covered with small confused punctures. Body length: 1.6 mm.

***Bezdekaltica* gen. nov.**

**Type species.** *Bezdekaltica socotrana* sp. nov.

**Description.** Body small, broadly oval, glabrous. Head hypognathous, slightly convex in lateral view. Frontal lines deeply incised, nearly straight, connecting in middle of frons. Antennal calli small, shining smooth, roundabout sharply delimited, separated from each other by upper part of anterofrontal ridge. Anterofrontal ridge gradually wider anteriorly. Antennae with 11 antennomeres, short.

Pronotum transverse, distinctly wider than long, anteriorly convergent. Anterior angles beveled. In dorsal view, lateral margins visible only in posterior part. Basal margin broadly produced in middle part, with very faint short impression on both sides at level of 5<sup>th</sup> elytral stria.

Scutellum small, almost semicircular. Elytra glabrous, oval, widest nearly in the middle, elytral base broader than base of pronotum. Surface with 11 regular striae, including scutellar and outermost ones. Winged, humeral calli present. Lateral margins of elytra are well visible in dorsal view. Elytral apex widely rounded. Epipleurae vertical, disappearing near apex.

Anterior coxal cavities open posteriorly. First ventrite as long as following ones combined. Apical ventrite in males with two small triangular incisions on posterior margin. All tibiae evenly straight and rounded, in apical third shallowly flattened and on both sides with fine short setae. Metatibiae provided with fine short spine inserted in the middle of apex. Metatarsi inserted at end of tibia, much shorter than half of metatibial length. Metatarsomere IV not inflated, claws appendiculate.

**Differential diagnosis.** Genus *Bezdekaltica* gen. nov. is characterised by a cluster of primitive characters (see SCHERER 1961): (1) claw segment of metatarsi not inflated, (2) spine at the end of metatibia simple, (3) metatibia without excavation, (4) pronotal disc without distinct impressions, (5) body not strikingly vaulted, (6) anterior coxal cavities open, (7) pronotum narrow, not twice as wide as long, (8) metatarsi much shorter than half of metatibial length, (9) winged, with developed humeral calli.

The following Aethiopian and Palearctic genera share all these characters, but can be distinguished by at least one additional special character (cf. also BECHYNÉ 1955, 1960, SCHERER 1961): *Aphthona* Chevrolat, 1836 – metatibia with broad furrow in apical part; *Bangalaltica* Bechyné, 1960 – antennomeres III–V strikingly long; *Chirodica* Germar, 1834 – body elongate, subparallel, elytra confusedly punctate; *Eugonotes* Jacoby, 1897 and *Hespera* Weise, 1889 – dorsum pubescent; *Gabonia* Jacoby, 1893 – anterior angles of pronotum not obtuse, humeral calli distinctly protruding; *Mniophilosoma* Wollaston, 1854 – metafemora not inflated; *Nzerekorena* Bechyné, 1955 – antennomere IV as long as antennomeres I–III combined; *Phyllotreta* Stephens, 1836 – elytra confusedly punctate.

Genus *Batophila* Foudras, 1860, also sharing all above-mentioned characters, can be separated from *Bezdekaltica* gen. nov. as follows: body elongate, frontal lines missing, lateral margins of pronotum parallel or divergent, pronotal base straight or evenly rounded, elytral

striae impressed, without humeral calli, apterous, 1.6–2.1 mm (in *Bezdekaltica* gen. nov.: body oval, frontal lines present, lateral margins of pronotum convergent anteriorly, pronotal base widely produced in middle part, elytral striae not impressed, with humeral calli present, macropterous, body length 1.3–1.6 mm).

**Etymology.** Dedicated to Jan Bezděk (Brno, Czech Republic), well known specialist in Galerucinae, who kindly gave me the opportunity to study interesting material of Alticinae from Socotra. Gender feminine.

***Bezdekaltica socotrana* sp. nov.**

(Figs. 3, 13, 17, 31)

**Type locality.** Yemen, Socotra Island, Diksam plateau, 12°31'24"N 53°58'29"E.

**Type material.** HOLOTYPE: ♂ (NMPC), 'YEMEN, SOCOTRA Island / Diksam plateau, 850-920m / N 12°31'24", E 53°58'29" / 5. ii. 2010 / L. Purchart & J. Vybíral lgt. [w, p]'. PARATYPES: 4 ♂♂ 8 ♀♀ and 10 spec. unsexed, same data as holotype (4 ♂♂ 8 ♀♀ in JBCB, 10 spec. unsexed in MDCA); 2 ♀♀, 'YEMEN, Socotra Isl., / Deiqb cave env. / 10.vi.2010, / V. Hula & J. Niedobová leg. [w, p]' (JBCB); 1 ♀, 'YEMEN, Socotra Isl., / Wadi Zirik, 12.vi.2010, / N 12°29'58", E 053°59'475" / V. Hula & J. Niedobová leg. [w, p]' (JBCB); 1 ♀, 'Republic of Yemen / Socotra Isl., Firmihin plato, / Dracena tree forest / N12°28'465", E54°00'89830" / V. Hula lgt. 22.-25.6.2009 [w, p]' (JBCB); 1 ♀, 'Yemen, Socotra Isl., Zerik, / 25.-27.iii.2001, / leg. V. Bejček & K. Štátný. [w, p]' (JFCP); 1 ♀, 'YEMEN, SOCOTRA Island / Al Haghier Mts. / Scant Mt. env. / 12°34.6'N, 54°01.5'E, 1450 m / J. Bezděk leg., 12.-13.xi.2010 [w, p]' (JBCB); 1 ♂, 'YEMEN, SOCOTRA Island / Noked plain (sand dunes) / SHARRET HALMA vill. env. / 12°21.9'N, 54°05.3'E, 20 m / J. Bezděk leg., 10.-11.xi.2010 [w, p]' (JBCB); 10 ♂♂ 13 ♀♀, 'YEMEN, SOCOTRA Island / Dixam plateau / Firmihin (Dracaena forest) / 12°28.6'N, 54°01.1'E, 490 m / J. Bezděk leg., 15.-16.xi.2010 [w, p]' (7 ♂♂ 12 ♀♀ in JBCB, 3 ♂♂ 1 ♀ in MBCA); same data but J. Hájek leg., 6 ♂♂ 4 ♀♀ (NMPC); same data but L. Purchart leg., 1 ♀ (JBCB); 6 spec. unsexed, 'YEMEN, SOCOTRA ISLAND / KAZAZHAN area / shrubland on limestone; sifting / 10.vi.2012 / 12°33.8'N 54°19.8'E, 540 m [w, p] // SOCOTRA Expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC). The specimens are provided with two additional labels: '*Bezdekaltica / socotrana* mihi / des. Döberl 2010 [or 2011, or 2012] [w, p]' and 'Holotypus [Paratypus, resp.] [r, p]'.

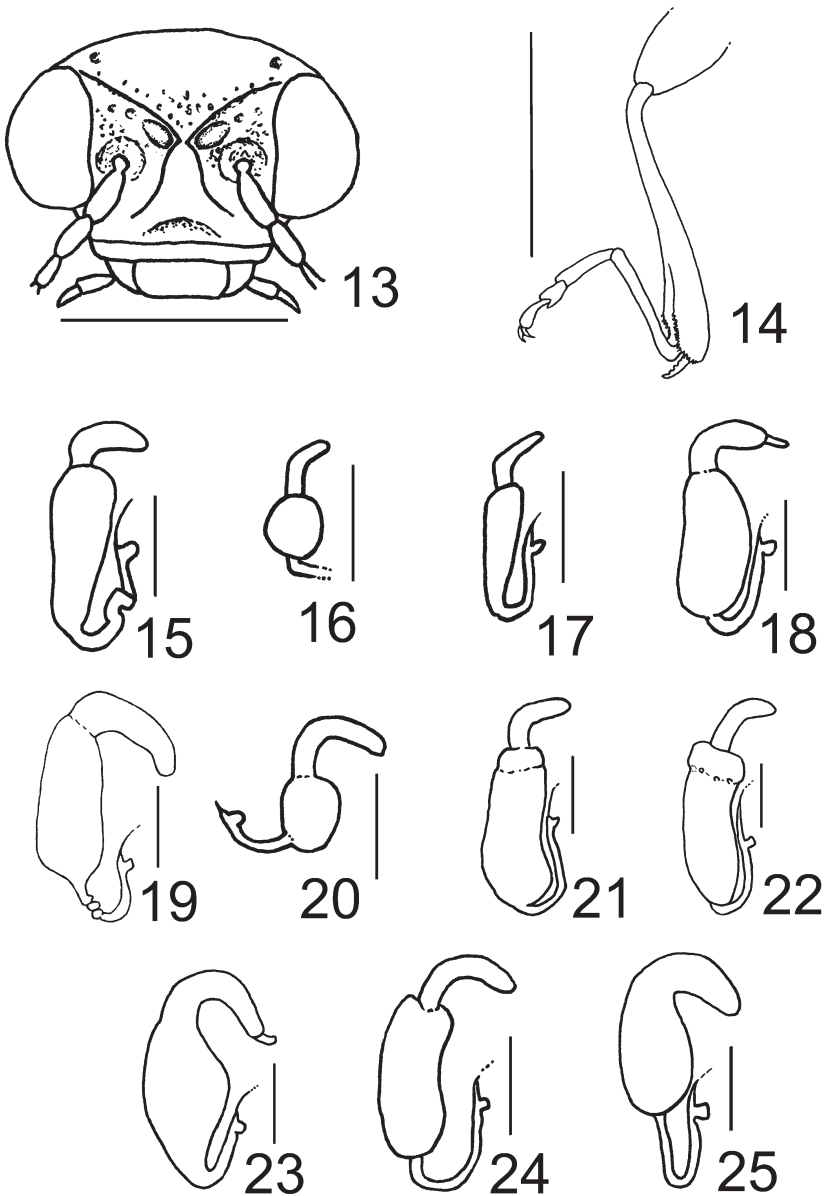
**Description.** Body length/width: males 1.3–1.6/0.8–0.9 mm (holotype 1.5/0.9 mm); females 1.4–1.6/0.8–1.0 mm.

**Male** (holotype). Black, lustrous, maxillar palpi yellow, antennae yellow with apex of antennomere XI darkened (Fig. 31). Legs with coxae and femora black (except yellow apices of pro- and mesofemora), trochanters brownish, tibiae and tarsi yellow.

Head (Fig. 13) small. Anterior part of head smooth. Antennal calli small, trigonate-oval, shining and roundabout well delimited by impressions. Frontal lines nearly straight, deeply incised. Vertex smooth with several fine and scattered punctures above frontal lines, near the upper margin of each eye with two or three pores bearing pale seta. Ratio of distances between inner and outer margins of eyes 1:2.3. Antennae short, thin, 0.5 times as long as body, proportions of antennomeres are 8:5:6:4:7:6:8:8:9:8:11 (1 = 0.01 mm). All antennomeres bearing long setae apically.

Pronotum 1.60 times as wide as long, widest in middle, moderately convex. Anterior margin nearly straight, lateral margins moderately rounded, anteriorly convergent. Anterior and posterior margins finely bordered, lateral margins narrowly and sharply bordered. Anterior angles shortly and obliquely truncate but not edged posteriorly, posterior corners rounded, with setigerous pore. Surface densely covered with large punctures but smaller than on elytra.

Scutellum small, almost semicircular. Elytra glabrous, oval, 0.65 times as long as body,



Figs. 13–25. 13 – head of *Bezdekaltica socotrana* sp. nov. 14 – left hind leg of *Yemenaltica furthi* sp. nov. 15–25. Spermatheca. 15 – *Aphthona pusilla* Laboissière, 1942; 16 – *A. socotrana* sp. nov.; 17 – *Bezdekaltica socotrana* sp. nov.; 18 – *Hermaeophaga ruficollis* (Lucas, 1847); 19 – *Longitarsus buettikeri* Doguet, 1984; 20 – *Luperomorpha biondii* sp. nov.; 21 – *Phyllotreta cheiranthi* Weise, 1903; 22 – *P. procera* (Redtenbacher, 1849); 23 – *Podagrica puncticollis* Weise, 1902; 24 – *Psylliodes persica* Allard, 1867; 25 – *Yemenaltica furthi* sp. nov. Scale bars: 0.5 mm for Figs. 14, 0.2 mm for Fig. 13 and 0.1 mm for Figs. 14–25.



1.10 times as long as wide. Surface with 11 regular striae of large punctures, well visible also on apex, scutellar row exceeding mid of elytra, distance between punctures ca. twice longer than their diameter; interstices plain and smooth. Humeral calli small but well developed.

Prosternal process as wide as antennomere II, longitudinally sulcated, with posterior part somewhat broadened, densely punctured. Metaventricle and abdomen covered with fine scattered punctures bearing fine grey setae. Ventricle I as long as following ones combined. Apical ventricle with two small triangular incisions on posterior margin.

Protarsomere I slightly dilated, with rounded sides, subtriangular, as wide as protarsomere III, length ratios of protarsomeres I–IV equal to 4-3-4-6. Metatibiae straight, with dorsal side slightly convex, in apical third more or less even and on both sides provided with row of fine setae, terminated with short simple spur inserted in middle of apex. Metatarsomere I shorter than half of metatibia length, metatarsomere III bilobed. Length ratios of metatarsomeres I–IV equal to 7-4-4-6.

Aedeagus narrowed in middle part, moderately bent in lateral view, ventrally with large spoon-shaped impression (Fig. 3).

**Female.** Protarsomere I narrower than in male, with sides straight, narrower than protarsomere III. Apical ventricle evenly rounded. Spermatheca (Fig. 17): nodulus elongate, posteriorly narrowed, cornu thin, in first third bent in angle ca 45°.

**Differential diagnosis.** See description of the genus.

**Etymology.** Named after its patria, Socotra Island.

**Distribution.** Yemen: Socotra Island

### *Eriotica* sp. A

(Fig. 32)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Zemhon area, 12°20.58'N 54°06.39'E, 270-300 m, 16.-17.vi.2010, 1 ♀, V. Hula leg. (JBCB).

**Diagnosis.** Body flavous, labrum and maxillar palpi dark, antennae with apical six antennomeres gradually darkened, elytra with large blackish-blue central spot. Pronotum subquadrate, with sides narrowed posteriorly and with transverse impression before the base. Elytra subparallel, with nine regular rows of large deep punctures, and with short scutellar row. Interstices densely covered with short semierect hairs. Body length: 3.8 mm.

### *Eriotica* sp. B

(Figs. 4, 33)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Ayhaft, 3.xi.2000, 1 ♂, V. Bejček & K. Štastný leg. (NMPC).

**Diagnosis.** Body flavous, labrum and maxillar palpi dark, apical two tarsomeres of all legs slightly infuscate, antennae gradually darkened from antennomere IV. Pronotum subquadrate, with sides narrowed posteriorly and with transverse impression before base. Elytra subparallel, with nine regular rows of large deep punctures, and with short scutellar row. Interstices densely covered with very short pale setae. Apex of each elytron with small cavity bearing one short thin spine. Body length: 3.0 mm.

***Hermaeophaga (Orthocrepsis) ruficollis* (Lucas, 1847)**

(Figs. 5, 18, 34)

*Lactica unicolor* Jacoby, 1886: 124, **syn. nov.**

**Type material.** *Lactica unicolor*: LECTOTYPE (by present designation): 1 ♂, 'Aden I. 1880. / Doria Beccari [w, p] // Museo Civ. / Genova [orange label, p] // SYNTYPUS [p] / Lactica / unicolor / Jacoby, 1886 [pale red label, h] // Lactica / unicolor / Jac. [blue label, h] // Lectotype [r, p]' (MSNG). PARALECTOTYPES: 1 ♂ 2 ♀♀, 'Aden I. 1880. / Doria Beccari [w, p] // Museo Civ. / Genova [orange label, p] // SYNTYPUS [p] / Lactica / unicolor / Jacoby, 1886 [pale red label, h] // Lactica / unicolor / Jac. [blue label, h] // Paralectotype [r, p]' (MSNG). The lectotype is herein designated to fix the name on single specimen.

**Additional material examined** (1 spec.). **YEMEN:** Socotra Island: Wadi Ayhaft, 12°36.5'N 53°58.9'E, 200 m, 7.-8.xi.2010, 1 ♀, J. Bezděk leg. (JBCB).

**Distribution.** Widely distributed in southern Europe, North, Central and West Africa, Central Asia, Southwest Asia, Afghanistan, India and Sri Lanka (SCHERER 1959, 1962a, 1962b, 1972, GRUEV & DÖBERL 1997, DÖBERL 2010). In the Arabian Peninsula it is reported from Saudi Arabia, the United Arab Emirates, Oman and Yemen (MEDVEDEV 1996, LOPATIN 2001, BEZDĚK & BATELKA 2011). **First record from Socotra Island.**

***Longitarsus buettikeri* Doguet, 1984**

(Figs. 6, 19, 35)

**Material examined** (5 spec.). **YEMEN: SOCOTRA ISLAND:** Dixam plateau, Firmihin (Dracaena forest), 12°28.6'N 54°01.1'E, 490 m, 15.-16.xi.2010, 2 ♂♂ 2 ♀♀, J. Bezděk leg. (1 ♂ in JBCB, 1 ♂ in NMPC, 1 ♂ 1 ♀ in MDCA); Hadibu, 12.652 N 54.024 E, 10 m, 11.-23.xi.2000, 1 ♀, Bejček & Šťastný leg. (MDCA).

**Distribution.** Oman (MEDVEDEV 1997), Saudi Arabia (DOGUET 1984a, MEDVEDEV 1996), the United Arab Emirates (BEZDĚK & BATELKA 2011). **First record from Socotra Island.**

**Comments.** BEZDĚK & BATELKA (2011) published records of *L. buettikeri* from the United Arab Emirates as '*Longitarsus* (s. str.) spec. 1' (relevant specimens were examined in JBCB).

***Longitarsus* sp. A**

(Fig. 36)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Wadi Zirik, 12°29.584'N 53°59.475'E, 12.vi.2010, 1 ♂, leg. V. Hula & J. Niedobová (JBCB).

**Diagnosis.** Body glabrous, brown, mouthparts dark brown, apical four antennomeres gradually darkened, tarsi slightly infusate, elytra with thin brownish suture. Head with deep orbital lines, frontal tubercles feebly developed but visible, separated by fine furrows, vertex laterally with large deep punctures. Pronotum 1.35 times as wide as long, covered with very fine microsculpture and fine punctures, anterior margin straight, posterior margin moderately rounded, lateral margins slightly rounded, posterior angles with very long pale seta. Elytra 0.65 times as long as body, 1.75 time as long as wide (measured at humeral calli), densely covered with small confused punctures. Protarsomere I elongate, subparallel, slightly narrower than protarsomere III, length ratios of protarsomeres I–IV equal to 6-3-3-5. Metatarsomere I long, thin, length ratios of metatarsomeres I–IV equal to 11-7-3-5. Body length: 2.3 mm.

*Luperomorpha biondii* sp. nov.

(Figs. 7, 20, 37)

**Type locality.** Yemen, Socotra Island, Al Haghier Mts., Skant Mt., 12°34.557'N, 54°01.514'E.

**Type material.** HOLOTYPE: ♂ (NMPC), 'YEMEN, Socotra Isl., / Hagher Mts., Skant, / N 12°34,557', E 054°01,514' / 7.-8.vi.2010, / V. Hula & J. Niedobová leg. [w, p] // collected on / Cephalocroton / socotranus [w, p]'. PARATYPES: 15 ♂♂ 35 ♀♀, same data as holotype (3 ♂♂ 12 ♀♀ in NMPC, 4 ♂♂ 15 ♀♀ in JBCB, 4 ♂♂ 4 ♀♀ in MDCA, 4 ♂♂ 4 ♀♀ in MBCA); 2 ♀♀, 'YEMEN, Socotra Isl., / Deiqub cave env. / 10.vi.2010, / V. Hula & J. Niedobová leg. [w, p]' (JBCB); 1 ♂, 'YEMEN, Socotra Isl., / Firmihin plato, 400-500 m, / N12°28'46", E054°00'89" / 18.-19.vi.2010, / V. Hula & J. Niedobová leg. [w, p]' (JBCB); 6 ♂♂ 10 ♀♀, 'YEMEN, SOCOTRA ISLAND / Dixam plateau, TUDHEN / shrubland with Commiphora / planifrons 18.+22.vi.2012 / 12°32.7'N, 53°59.9'E, 1135 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC); 1 ♂ 1 ♀, 'YEMEN, SOCOTRA ISLAND, 18.vi. / Hagher Mts., WADI MADAR, 2012 / montane shrubland with / Cephalocroton socotranus / 12°33.2'N, 54°00.4'E, 1170 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC); 1 ♀, 'YEMEN, SOCOTRA ISLAND / Aloove area, ALOOVE vill. env. / Jatropha uncostata shrubland with / Boswellia elongata trees, / 19.-20.vi.2012, / 12°31.2'N, 54°07.4'E, 221 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC); 12 ♂♂ 20 ♀♀, 'YEMEN, SOCOTRA ISLAND, 18.vi. / Hagher Mts., WADI MADAR, 2012 / montane shrubland with / Cephalocroton socotranus / 12°33.2'N, 54°00.4'E, 1170 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC) The specimens are provided with two additional labels: '*Luperomorpha biondii* mihi / des. Döberl 2011 [or 2012] [w, p]' and 'Holotypus [Paratypus, resp.] [r, p]'.

**Description.** Body length/width: males 1.9–2.3/0.8–0.9 mm (holotype 2.0/0.8 mm); females 2.0–2.6/0.8–1.0 mm.

**Male** (holotype). Body elongate, sparsely pubescent, dull (Fig. 37). Head orange, vertex with large dark brown spot. Antennae orange, gradually darkened from antennomere V. Pronotum orange. Scutellum black. Elytra orange with two large broad transverse dark brown bands connected in suture but not reaching lateral margins. Basal band covers also humeral calli. Both transverse bands are connected by sutural band. Underside orange. Legs orange, tarsi infuscate.

Anterior part of head lustrous. Antennal calli well delimited, oval, oblique and smooth. Ratio of distances between inner and outer margin of eyes 1:1.7. Vertex very finely wrinkled and sparsely, almost indistinctly punctured. Antennae thin, 0.72 times as long as body, proportions of antennomeres are 13:8:7:12:14:13:13:13:13:15:19 (1 = 0.01 mm).

Pronotum transverse, 1.45 times as wide as long, widest in middle. Anterior margin straight, lateral margins rounded, posterior margin straight in midpart, laterally oblique. Anterior margin unbordered, lateral and posterior margins narrowly bordered. Anterior angles almost rectangular, posterior angles obtusely angulate, all angles with setigerous pore. Surface covered with very fine microsculpture.

Scutellum small, subtriangular with rounded apex, semiopaque. Elytra dull, parallel, 0.66 times as long as body, 1.63 times as long as wide (measured at humeral calli). Elytral disc flattened. Winged, humeral calli well developed. Elytra covered with fine microsculpture, indistinct fine punctures and sparsely with long conspicuous raised pale setae.

Underside more or less covered with fine punctures and short pale setae. Anterior coxal

cavities open posteriorly, prosternal process narrow and visible between procoxae. Apical ventrite posteriorly with two short incisions, median lobe triangularly impressed.

Protarsomere I short, subtriangular with slightly rounded sides, as wide as protarsomere III, length ratios of protarsomeres I–IV equal to 6–6–5–9. Metatarsomeres moderately thin, length ratios of metatarsomeres I–IV equal to 12–7–6–11.

Aedeagus (Fig. 7) narrow, parallel, in lateral view moderately regularly bent, ventrally with broad gutter.

**Female.** Elytra at least in basal part lustrous. Apical ventrite subtriangular, even posteriorly. Protarsomere I almost parallel, narrow. Spermatheca (Fig. 20): nodulus subglobular, cornu thin, C-shaped.

**Variability.** The coloration is variable. The palest specimens have antennae orange with apical antennomeres infuscate; dark spot on vertex is reduced to two divergent elongate spots connected basally; transverse band on elytra are reduced to thin stripes with irregular margins; sutural stripe connecting both transverse bands is very thin. On the other hand, the darkest specimens have antennae black except for four basal antennomeres, vertex has large circular dark brown spot and elytral bands are extended, covering most of elytral disc.

**Differential diagnosis.** The genus *Luperomorpha* Weise, 1887 contains more than 85 species mainly distributed in the Oriental region. Only one species is distributed in Africa: *L. vittula* (Weise, 1915) from Cameroon (BIONDI & D'ALESSANDRO 2010), and can be distinguished by black head, pronotum pale with black spot in the middle of anterior margin, and black elytra, each elytron with one pale longitudinal stripe. Western Palearctic Region includes only two *Luperomorpha* species, both with orange pronotum and bluish black elytra: *L. arabica* Doguet, 1979 from Saudi Arabia and Yemen (with orange head), and *L. xanthodera* (Fairmaire, 1888), a Chinese species recently introduced to the Central Europe (with black head).

**Collection circumstances.** Specimens from Scand and Wadi Madar were collected on the flowers of *Cephalocroton socotranus* (Balf.) (Euphorbiaceae) (J. Bezděk & V. Hula, pers. comm. 2012).

**Etymology.** Dedicated to Maurizio Biondi (L'Aquila, Italy), an excellent specialist in Alticinae.

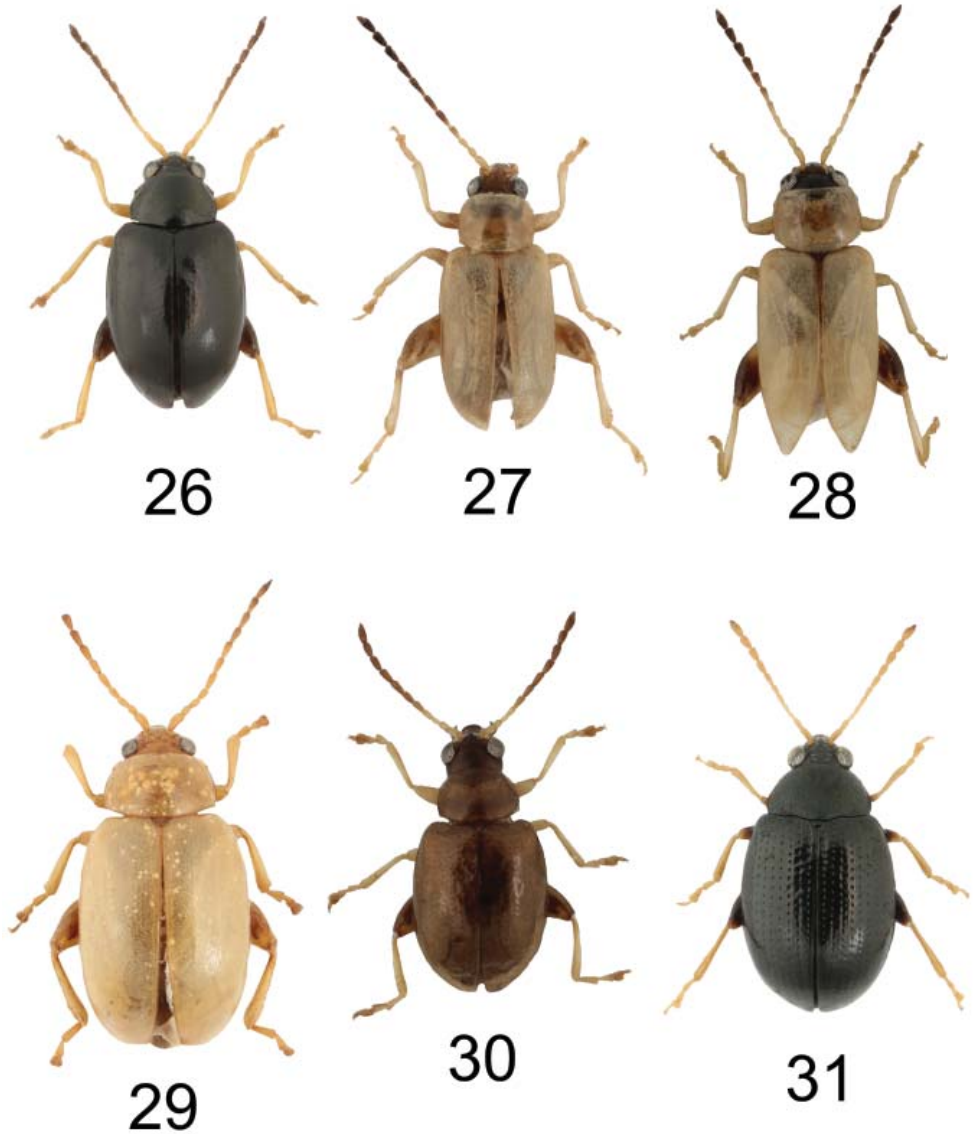
**Distribution.** Yemen: Socotra Island

### *Phyllotreta cheiranthi* Weise, 1903

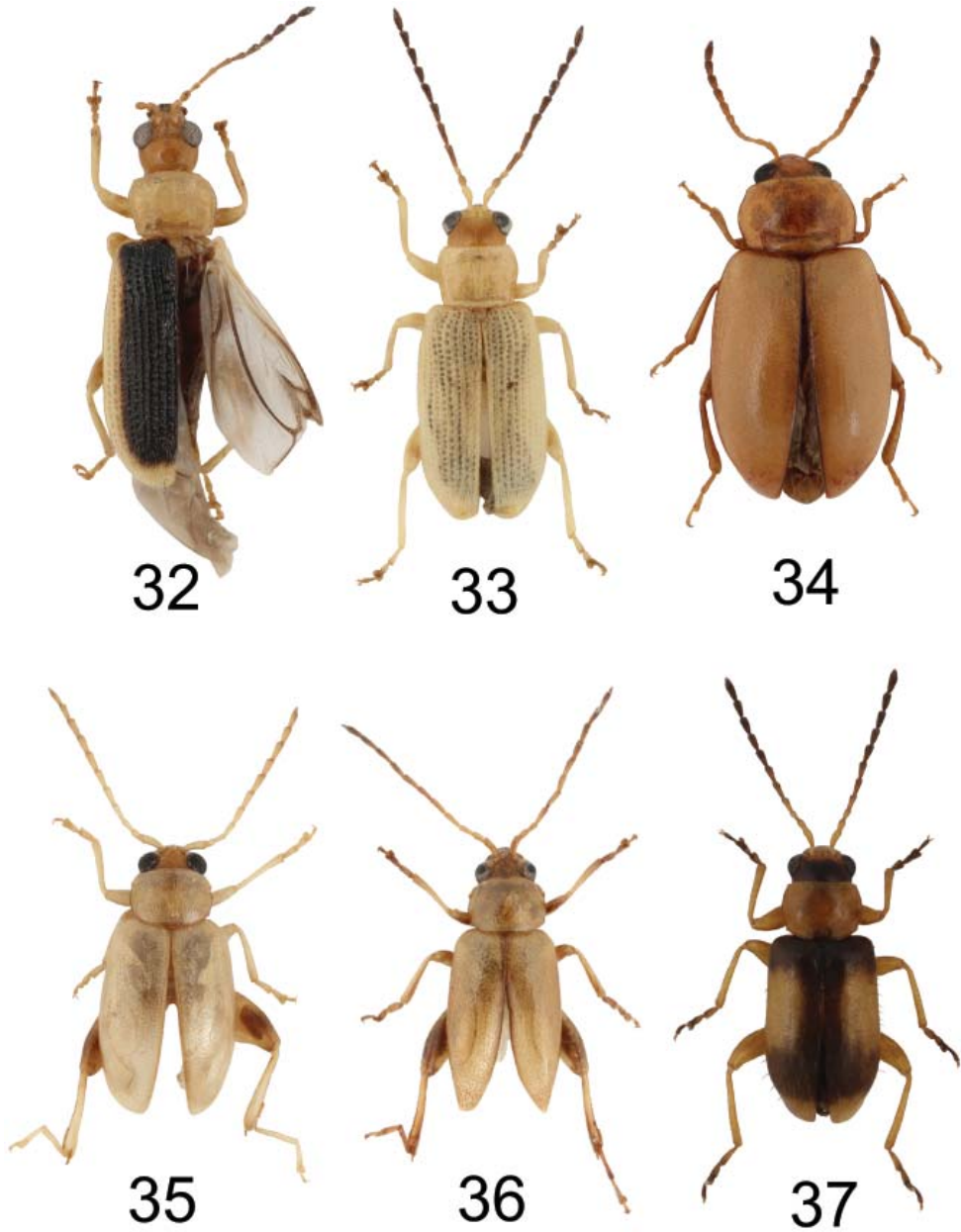
(Figs. 8, 21, 38)

**Material examined** (3 spec.). **YEMEN: SOCOTRA ISLAND:** Zemhon area, 12°30'58"N 54°06'39"E, 270–350 m, 3.–4.ii.2010, 1 spec. unsexed, L. Purchart & J. Vybíral leg. (JBCB); Noked plain, Qaareh (waterfall), 12°20'10"N 53°37'56"E, 57 m, 5.–6.xii.2003, 2 spec. unsexed, D. Král leg. (NMPC).

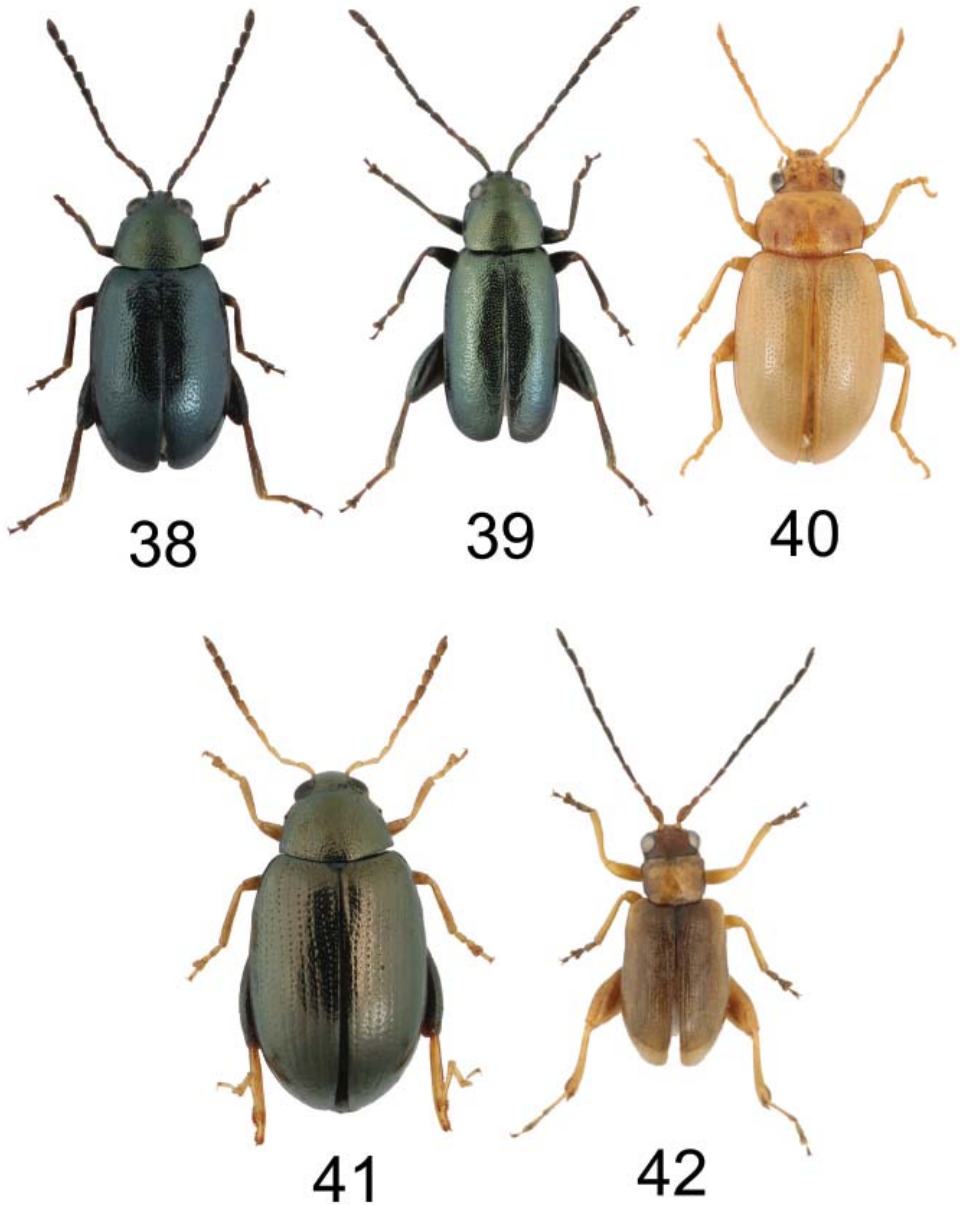
**Distribution.** United Arab Emirates, Oman, Saudi Arabia, Yemen (BRYANT 1957, DOGUET 1979, 1984a, 1984b, MEDVEDEV 1996, LOPATIN 2001, DÖBERL 2009, BEZDĚK & BATELKA 2011). Known also from Algeria and tropical Africa: Congo, Guinea, Sudan, Tanzania (SCHERER 1962a, 1972, POLLARD 1957, DOGUET 1984b, GRUEV & DÖBERL 1997). **First record from Socotra Island.**



Figs. 26–31. Habitus. 26 – *Aphthona pusilla* Laboissière, 1942 (unsexed, 1.6 mm); 27 – *A. socotrana* sp. nov. (holotype, male, 2.0 mm); 28 – *A. sp. A* (female, 2.1 mm); 29 – *A. sp. B* (female, 3.8 mm); 30 – *A. sp. C* (female, 1.6 mm); 31 – *Bezdekaltica socotrana* sp. nov. (paratype, male, 1.6 mm).



Figs. 32–37. Habitus. 32 – *Eriotica* sp. A (female, 3.6 mm); 33 – *Eriotica* sp. B (male, 2.9 mm); 34 – *Hermaphroditus ruficollis* (Lucas, 1847) (female, 2.9 mm); 35 – *Longitarsus buettikeri* Doguet, 1984 (male, 2.4 mm); 36 – *Longitarsus* sp. A (male, 2.3 mm); 37 – *Luperomorpha biondii* sp. nov. (paratype, male, 2.3 mm).



Figs. 38–42. Habitus. 38 – *Phyllotreta cheiranthi* Weise, 1903 (female, 1.9 mm); 39 – *P. procera* (Redtenbacher, 1849) (male, 2.4 mm); 40 – *Podagrica puncticollis* Weise, 1902 (female, 3.7 mm); 41 – *Psylliodes persica* Allard, 1867 (female, 2.3 mm); 42 – *Yemenaltica furthi* sp. nov. (holotype, male, 2.0 mm).

***Phyllotreta procera* (Redtenbacher, 1849)**

(Figs. 9, 22, 39)

**Material examined** (32 spec.). **YEMEN: SOCOTRA ISLAND:** Dixam plateau, Firmihin (Dracaena forest), 12°28.6'N 54°01.1'E, 490 m, 15.-16.xi.2010, 4 ♂♂ 1 ♀, J. Bezděk leg. (JBCB); same data but J. Hájek leg., 6 ♂♂ 5 ♀♀ (NMPC); same data but P. Hlaváč leg., 1 ♂ (NMPC); Qualentiah env., slopes 5 km SE from Quaysoh, 12°39.691'N 53°26.658'E, 4.-5.vi.2010, 1 ♀, V. Hula & J. Niedobová leg. (JBCB); Hadiboh env., 12°65'02"N 54°02'04"E, ca. 10-100 m, 21.xi.-12.xii.2003, 1 ♀, P. Kabátek leg. (NMPC); same data but D. Král leg., 2 ♂♂ 1 ♀ (NMPC); Homhil protected area, 12°34'27"N 54°18'32"E, 364 m, 28.-29.xi.2003, 1 ♂, P. Kabátek leg. (NMPC); Zerik, 25.-27.iii.2001, 2 ♀♀, V. Bejček & K. Šřastný leg. (JFCP); Dixam plateau, Wadi Dirhor, 12°28.0'N 54°00.5'E, 340 m, 15.+22.vi.2012, 6 ♂♂ 1 ♀, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg. (NMPC).

**Distribution.** Central and Southern Europe, Asia Minor, Near East, Caucasus, North Africa (WEISE 1910, HEIKERTINGER 1943, DOGUET 1984b, GRUEV & DÖBERL 1997, DÖBERL 2010).

**First record from Socotra Island.**

***Podagrica puncticollis* Weise, 1902**

(Figs. 10, 23, 40)

**Type material.** LECTOTYPE (by present designation): 1 ♂, 'Mombo [w, h] // Podagrica / puncticollis m. [w, h] // Syntype [r, p] // Lectotype [r, p]' (ZMHB). PARALECTOTYPES: 2 ♂♂ 3 ♀♀ and 10 spec. unsexed, 'Mombo [w, h] // Syntype [r, p] // Paralectotype [r, p]' (ZMHB). The lectotype is herein designated to fix the name on single specimen.

**Material examined** (3 spec.). **YEMEN: SOCOTRA ISLAND:** Wadi Ayhaft, 12°36.5'N 53°58.9'E, 200 m, 7.-8.xi.2010, 1 ♂ 2 ♀♀, J. Bezděk leg. (1 ♂ 1 ♀ in JBCB, 1 ♀ in MDCA).

**Distribution.** Egypt, Oman, Saudi Arabia, Yemen, Chad, Kenya, Niger, Sudan, Tanzania (WEISE 1910, BRYANT 1950, 1957, POLLARD 1955, 1957, SELMAN 1963, GRUEV & DÖBERL 1997, DÖBERL 2010). **First record from Socotra Island.**

***Psylliodes persica* Allard, 1867**

(Figs. 11, 24, 41)

**Material examined** (1 spec.). **YEMEN: SOCOTRA ISLAND:** Diksam plateau, 12°31'24"N 53°58'29"E, 850-920 m, 5.ii.2010, 1 ♀, L. Purchart & J. Vybíral leg. (JBCB).

**Distribution.** Widely distributed in Caucasus, Central Asia, Turkey, Near East and the Arabian Peninsula (DÖBERL 2010, NADEIN 2010). In the Arabian Peninsula reported from Saudi Arabia (DOGUET 1979, MEDVEDEV 1996). **First record from Socotra Island.**

***Yemenaltica furthi* sp. nov.**

(Figs. 12, 14, 25, 42)

**Type locality.** Yemen, Socotra Island, Al Haghier Mts., Wadi Madar, 12°33.2'N, 54°00.4'E.

**Type material.** HOLOTYPE: ♂ (NMPC), 'YEMEN, SOCOTRA Island / Al Haghier Mts. / wadi Madar, 1180-1230 m / 12°33.2'N, 54°00.4'E, / J. Bezděk leg., 12-14.xi.2010 [w, p]'. PARATYPES: 2 ♀♀, same data as holotype (MDCA); 3 ♂♂ 1 ♀, same data as holotype but J. Hájek leg. (NMPC, 1 ♂ in MDCA); 1 ♀, 'YEMEN, SOCOTRA Island / Al Haghier Mts. / Scant Mt. env. / 12°34.6'N, 54°01.5'E, 1450 m / J. Bezděk leg., 12.-13.xi.2010 [w, p]' (JBCB); 1 ♀, same data but L. Purchart leg. (JBCB); 12 spec. unsexed, 'YEMEN, SOCOTRA ISLAND / Dixam plateau, TUDHEN / shrubland with Commiphora / planifrons 18.+22.vi.2012 / 12°32.7'N, 53°59.9'E, 1135 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart



leg. [w, p]' (NMPC); 3 spec. unsexed, 'YEMEN, SOCOTRA ISLAND, 18.vi. / Hagher Mts., WADI MADAR, 2012 / montane shrubland with / Cephalocroton socotranus / 12°33.2'N, 54°00.4'E, 1170 m [w, p] // SOCOTRA expedition 2012 / J. Bezděk, J. Hájek, V. Hula, / P. Kment, I. Malenovský, / J. Niedobová & L. Purchart leg. [w, p]' (NMPC). The specimens are provided with two additional labels: '*Yemenaltica furthi* mihi / des. Döberl 2012 [w, p]' and 'Holotypus [*Paratypus*, resp.] [r, p]'.

**Description.** Body length/width: males 2.0–2.3/0.8–0.9 mm (holotype 2.0/0.8 mm); females 1.8–2.2/0.7–0.9 mm.

**Male** (holotype, Fig. 42). Body subparallel, lustrous, brown. Anterior part of head pale, vertex and frons dark brown, labrum and maxillar palpi darkened. Antennomeres I–III brownish, remaining black. Elytra brown, around humeral calli and in apex paler. Legs fulvous, tarsi infusate. Underside black, apex of apical ventrite paler.

Antennal calli elongate, trigonate, separated by shallowly impressed line, laterally and posteriorly not delimited by distinct lines, their anterior tip extending to interantennal space. Ratio of distances between inner and outer margins of eyes 1:1.75. Vertex and frons shining smooth. Antennae long, 0.9 times as long as body, proportions of antennomeres are 16:9:11:19:18:17:16:16:16:16 (1 = 0.01 mm).

Pronotum subquadrate, 1.4 times as wide as long. Anterior margin nearly straight, lateral margins straight, posterior margin rounded. Anterior angles almost rectangular with setigerous pore, posterior angles evenly rounded with setigerous pore and additional one or two short setae. Surface finely and shallowly punctured, finer near base, along pronotal base with weak shallow transverse impression.

Scutellum small and trigonate. Elytra subparallel, 0.65 times as long as body, 1.55 times as long as wide (measured at humeral calli). Elytral disc flattened. Winged, humeral calli well developed. Elytra densely covered with fine punctures forming numerous regular striae, interstices weakly raised.

Anterior coxal cavities closed. Apical ventrite with two short incisions. Protarsomere I subtriangular, with rounded sides, as wide as protarsomere III, length ratios of protarsomeres I–IV equal to 6-3-3-4. Apical third of metatibia distinctly bent outwards, somewhat thickened and hollowed, apical margins provided with few stiff setae. Metatibial spur short, with undulate margins (Fig. 14). Metatarsomeres combined nearly as long as the tibia, very thin. Metatarsomere I long, length ratios of metatarsomeres I–IV equal to 11-7-3-4.

Aedeagus (Fig. 12) ventrally with broad furrow, tapering to base.

**Female.** Protarsomere I almost parallel, narrow, distinctly narrower than protarsomere III. Apical ventrite evenly rounded. Spermatheca (Fig. 25): nodule elongate, gradually merged with cornu.

**Differential diagnosis.** *Yemenaltica furthi* sp. nov. can be compared only with the second known *Yemenaltica* species – *Y. scorteccii* Scherer, 1985 from the Arabian Peninsula. Both species share the metatibial spur with undulate margins. In *Y. scorteccii*, this spur is long and broad while it is rather small in *Y. furthi* sp. nov. Pronotum is more transverse (about 1.7 times as wide as long), dull and densely punctate in *Y. scorteccii*, while 1.4 times as wide as long, lustrous and finely punctate in *Y. furthi* sp. nov. Metatibia are channeled in almost whole length in *Y. scorteccii*, while only in apical third in *Y. furthi* sp. nov.

**Etymology.** This species is dedicated to David G. Furth (Washington, USA), well known specialist of Alticinae, to whom I owe numerous specimens of Alticinae from Israel for comparison.

**Distribution.** Socotra Island, Yemen.

### Acknowledgements

I give my hearty thanks to all colleagues and friends for their willing help with this work. My special thanks go to Jan Bezděk (Brno, Czech Republic) who gave me the opportunity to study rich material from Socotra and also provided the excellent colour photos of all species. I give my thanks as well to Jan Farkač (CULS) and Jiří Hájek (NMPC) who made material in their care available. Thanks to the kindness of Roberto Poggi (MSNG) and Johannes Frisch and Joachim Willers (ZMHB) I could study the type material of *Lactica unicolor* Jacoby, 1886 and *Podagricra puncticollis* Weise, 1902. Carlo Leonardi (Milano, Italy) and Joachim Mauser (Ballrechten-Dottingen, Germany) helped with the literature wanted, the latter also with identification of the genus *Eriotica*. I am equally indebted to Maurizio Biondi (L'Aquila, Italy) who kindly helped with identification of the questionable species as *Luperomorpha* and *Yemenaltica*. Last but not least I am very thankful to the reviewers Maurizio Biondi and Alexander Konstantinov (Washington, USA) for critical notes and valuable advices as well as linguistic help.

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