

*Tituboea purcharti* sp. nov., the first representative  
of Clytrini from Socotra Island  
(Coleoptera: Chrysomelidae: Cryptocephalinae)

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**Abstract.** *Tituboea purcharti* sp. nov., the first known species of Clytrini from Socotra Island (Yemen), is described and illustrated. The new species belongs to the group of larger species (above 7.0 mm) with not prolonged protarsi, glabrous elytra and not elevated posterior pronotal angles. It is closely related to *T. arabica* (Olivier, 1808) but differs in slender, flat aedeagus with prolonged apex and in black pattern on elytra reduced to transverse fascia behind elytral midlength.

**Key words.** Coleoptera, Chrysomelidae, Cryptocephalinae, Clytrini, *Tituboea*, new species, Yemen, Socotra

### Introduction

The genus *Tituboea* Lacordaire, 1848, is distributed in the Palearctic, Oriental and Afrotropical Regions. REGALIN & MEDVEDEV (2010) listed 62 species from the Palearctic Region. Recently, additional new species, *T. pindai* Bezdek, 2011, was described from the United Arab Emirates (BEZDĚK & BATELKA 2011). The species from the Arabian Peninsula were reported and keyed by MEDVEDEV (1979, 1993, 1996, 1997).

The chrysomelid fauna of Socotra Island is extremely insufficiently known. Until now, only five species were reported: *Eryxia socotrana* Gahan, 1903, *Colasposoma densatum* Fairmaire, 1887 (both Eumolpinae), *Melixanthus melanocephalus* Suffrian, 1857 (Cryptocephalinae), *Oulema* sp. (Criocerinae), and *Oxylepus deflexicollis* (Boheman, 1862) (Cassidinae) (see WRANIK 2003, SCHÖLLER et al. 2010).

The material collected by Czech entomologists within 2000–2012 resulted in a series of papers which rapidly increase the number of chrysomelid species known from Socotra: Bruchinae with seven species (DELOBEL 2012), Eumolpinae with 16 species and subspecies, 15 of them new to science (ZOIA 2012), Cassidinae with two species (ŚWIĘTOJAŃSKA & BOROWIEC 2012), Galerucinae with six species, five of them new to science (BEZDĚK 2012) and Alticinae with 17 species, four of them new to science (DÖBERL 2012).

The tribe Clytrini was never reported from Socotra Island. During the short expedition to Hagher Mts. in central Socotra my dear friend Luboš Purchart collected three specimens of *Tituboea*; additional 18 specimens were subsequently found in NMPC. This species proved to be new to science and is described below.

### Material and methods

All measurements were made using an ocular grid mounted on the MBS-10 stereomicroscope (at 16× magnification for the body length and 32× magnification for the remaining measurements). The photograph was taken by Canon EOS 550D with Macro Lens MP-E65mm and mounted with Helicon Focus 5.1 software.

The material is housed in the following collections:

- BMNH The Natural History Museum, London, United Kingdom (Sharon Shute, Maxwell V. L. Barclay);  
 JBCB Jan Bezděk collection, Brno, Czech Republic;  
 NHMB Naturhistorisches Museum, Basel, Switzerland (Eva Sprecher-Uebersax, Isabelle Zürcher-Pfander, Michel Brancucci);  
 NMPC National Museum, Praha, Czech Republic (Jiří Hájek).

Exact label data are cited for all type specimens; a forward slash (/) separates different lines and a double slash (//) different labels of data. Other comments and remarks are placed in square brackets: [p] – preceding data are printed, and [w] – white label.

### Taxonomy

#### *Tituboea purchati* sp. nov.

(Figs. 1–2, 6, 8–10)

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

**Type material.** HOLOTYPE: ♂, 'YEMEN, Socotra Island / Al Hagher Mts. / wadi Madar, 1180-1230 m / 12°33.2'N, 54°00.4'E, / L. Purchart leg., 12-14.xi.2010 [w, p]' (NMPC). PARATYPES: 2 ♀♀, same data as holotype (JBCB); 12 ♂♂ 6 ♀♀, 'Yemen, Soqotra Is., QAARIAH / vill. env., 28.xi.2003, N 12°38' / 05'' E 54°12'39'', 11 m (GPS) / leg. P. Kabátek [w, p] // YEMEN – SOQOTRA / 2003 / Expedition; Jan Farkač, / Petr Kabátek & David Král [w, p]' (NMPC, 1 ♂ in JBCB, 1 ♂ in BMNH, 1 ♂ in NHMB). The specimens are provided with additional printed red labels: 'HOLOTYPUS [or PARATYPUS] / *Tituboea purchati* sp. nov. / det. J. Bezděk 2011'.

**Description.** Body length: ♂♂ 7.3–9.9 mm (holotype 9.6 mm); ♀♀ 8.3–10.3 mm.

**Male** (holotype, Fig. 1). Body subcylindrical, parallel, glabrous, lustrous. Head including mouthparts orange, tips of mandibles darkened. Antennomeres I–IV orange, antennomeres V–XI black with pale bases. Pronotum orange with infuscate middle part of posterior margin. Scutellum black. Elytra orange, behind middle with black transverse fascia with irregular margins, near suture slightly widened and bent posteriorly. Legs orange, claws black with pale bases. Prosternum orange, mesosternum orange in the middle, laterally black, metasternum and abdomen including pygidium black.

Head. Labrum short, transverse, almost impunctate, with several long pale setae along anterior margin, anterior angles widely rounded, anterior margin shallowly incised. Head distinctly constricted behind eyes. Anterior part of head lustrous, almost impunctate and



Fig. 1. Habitus of *Tituboea purchati* sp. nov. (holotype, male, 9.6 mm).

glabrous, aside from antennal insertions with small shallow impressions; clypeus widely shallowly triangularly incised, with short fine pale setae along anterior margin. Frons wide, 2.5 times as wide as diameter of eye, with transverse shallow impression in midpart, densely and coarsely punctured, covered with dense short setae (slightly longer near eyes). Vertex lustrous, densely covered with fine small punctures and short pale setae. Antennomere I club-shaped; antennomeres II and III very small, cylindrical; antennomere IV small, triangular; antennae distinctly serrated from antennomere V.

Pronotum transverse, 1.71 times as wide as long, widest at two thirds, moderately convex, covered with extremely fine, almost invisible punctures, lustrous. Anterior half of lateral margins convergent, straight, posterior half widely rounded, anterior margin slightly concave, posterior margin nearly straight, distinctly thickened in scutellar area. Anterior angles rectangular with rounded tip, posterior ones almost imperceptible, widely rounded. All angles bearing setigerous pore with long pale seta. Lateral margins narrowly bordered, anterior margin bordered only laterally, border

of posterior margin narrow laterally, broader at scutellar thickening. Scutellum triangular with sharply rounded apex, base covered with fine punctures and pale setae, apex lustrous, impunctate, scutellar apex elevated upon level of elytra.

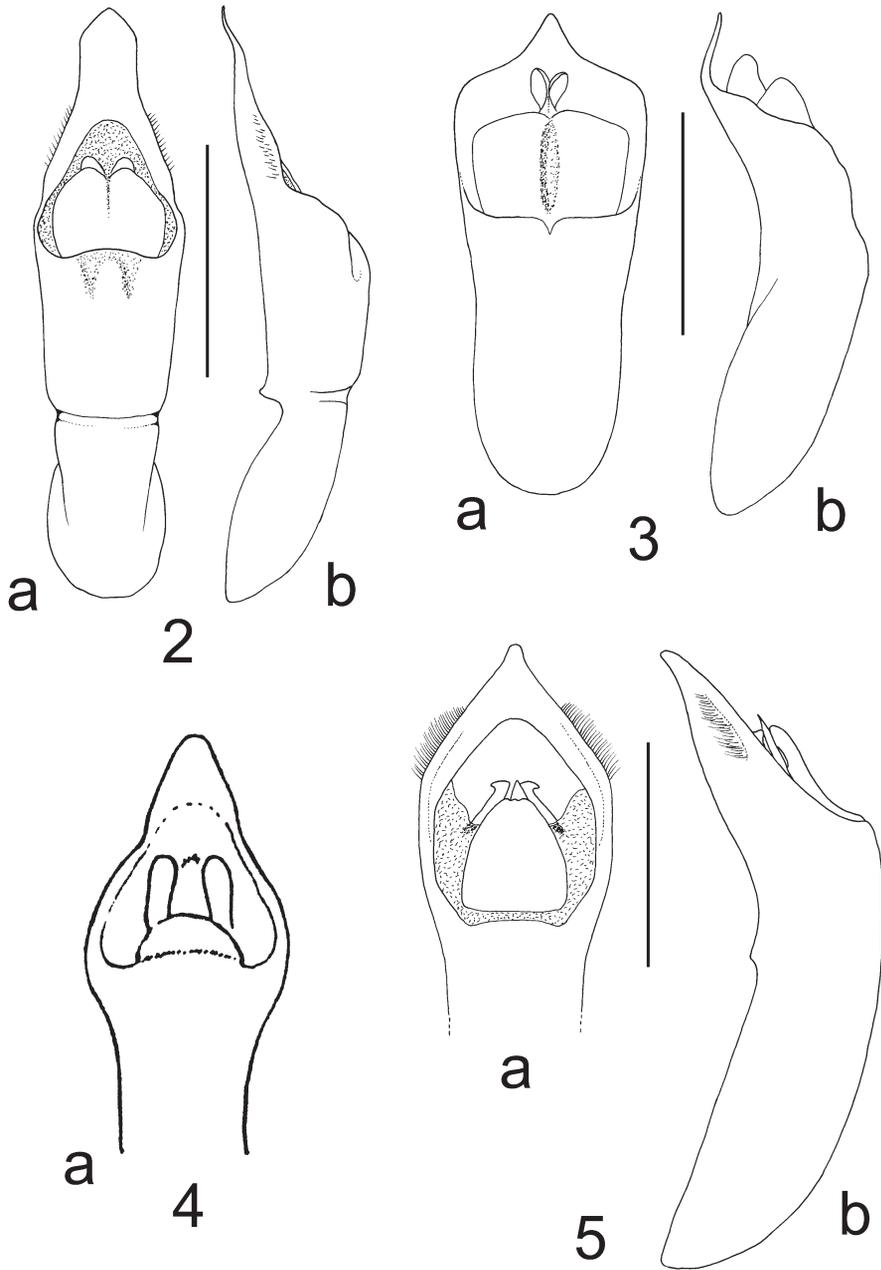
Elytra subcylindrical, 1.56 times as long as wide at humeral part, glabrous, lustrous, densely covered with small fine confused punctures. Basal margin narrowly bordered, lateral margin thinly bordered in anterior third, widely bordered in middle third and disappearing in posterior third. Epipleura glabrous, basally wide, gradually thinner posteriorly, disappearing in midlength of elytra. In lateral view, lateral margin of elytra widely concave.

Tarsi short and relatively slender. Protarsomere I short, subtriangular, 1.33 times as long as broad, 0.58 times as long as two following tarsomeres combined, protarsomere II subtriangular, almost as wide as long, protarsomere III very deeply incised (Fig. 6).

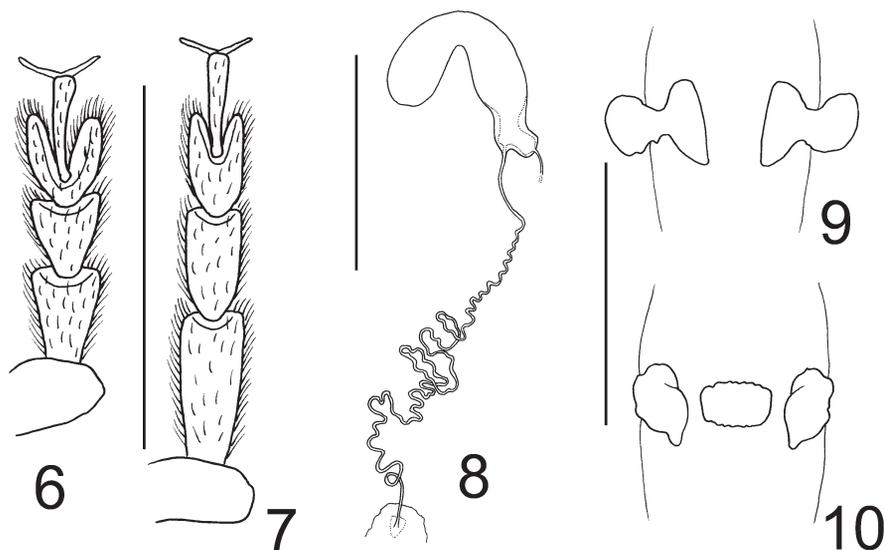
Ventral part. Propleurae glabrous. Prosternal projection not visible between procoxae. Abdomen flattened, last ventrite bent downwards.

Male genitalia. Aedeagus (Fig. 2) slender, flat, with distinctly prolonged apex.

**Female.** Frons broader, pronotum slightly broader and elytra slightly longer than in males (see Variability). Tarsi slightly narrower than in males. Abdomen robust, convex, last ventrite



Figs. 2–5. Aedeagus (a – dorsal view; b – lateral view). 2 – *Tituboea purchati* sp. nov.; 3 – *T. arabica*; 4 – *Tituboea capensis* (orig. MEDVEDEV 1987); 5 – *T. obliquata* (specimen from Yemen). Scale bar = 1 mm for Figs. 2, 3 and 5.



Figs. 6–10. 6–7 – Male protarsus. 6 – *T. purchati* sp. nov.; 7 – *T. arabica*. 8 – Spermatheca of *T. purchati* sp. nov. 9–10 – Rectal sclerites of *T. purchati* sp. nov. 9 – ventral sclerites; 10 – dorsal sclerites. Scale bar = 2 mm for Figs. 6–7, 0.5 mm for Fig. 8 and 1 mm for Figs. 9–10.

with small round impression in middle. Spermatheca C-shaped with relatively sharp inner angle, spermathecal duct very long with numerous coils (Fig. 8). Rectal sclerites (Figs. 9, 10): dorsally 3 sclerites (two lateral, 1 central), ventrally 2 wing-shaped sclerites.

**Variability.** The width of frons/diameter of the eye ratio varies between 2.40–2.70 in males and 2.65–2.85 in females. The width/length ratio of pronotum varies between 1.60–1.72 in males and 1.70–1.78 in females. The length/width ratio of elytra varies between 1.47–1.58 in males and 1.60–1.67 in females. The black fascia on elytra is somewhat variable in breadth, usually touching the lateral sides and suture, only in one male the lateral sides and suture are orange. One female has a small black spot surrounding inner margin of eyes posteriorly of canthus and three very small black spots on pronotum (two laterally near hind angles, one in the middle nearly touching basal margin).

**Differential diagnosis.** *Tituboea purchati* sp. nov. belongs to the group of larger species (above 7. mm) with not prolonged protarsi, glabrous elytra and not elevated hind pronotal angles, and is similar to *T. arabica* (Olivier, 1808). Both species can be distinguished by the structure of aedeagus which is slender, flat and with distinctly prolonged apex in *T. purcharti* sp. nov., while robust and with shortly triangular apex in *T. arabica* (Figs. 2, 3). In the males of *T. arabica*, the protarsomeres are shortly elongated, not subtriangular as in *T. purcharti* sp. nov. Protarsomere III in *T. arabica* is incised ca. to its midlength, while it is incised to the basal quarter in *T. purcharti* sp. nov. (Figs. 6, 7). All the specimens of *T. arabica* known to

me also have a different coloration – they always have humeral and subscutellar black spots which are always missing in *T. purcharti* sp. nov.

Two Afrotropical *Tituboea* species with not prolonged protarsi, glabrous elytra and not elevated hind pronotal angles, *T. capensis* Medvedev, 1993 (RSA) and *T. obliquata* (Lacordaire, 1848) (Senegal, Yemen), can be distinguished by two large black spots on pronotum and by the black spots on humeral calli (*T. obliquata*) or on the anterior third of elytra (*T. capensis*). Pronotum of *T. purcharti* sp. nov. is uniformly orange (or, very rarely, with three very small black spots), and elytra are orange with black transverse fascia behind the middle. All mentioned species differ also in the structure of aedeagus which is triangularly prolonged in *T. capensis* (but less than in *T. purcharti* sp. nov.) while simply triangular in *T. obliquata* (Figs. 2, 4, 5).

In habitus, *T. purcharti* sp. nov. resembles also some species of the genus *Clytra* Laicharting, 1781. Procoxae are separated by a well visible prosternal projection in *Clytra* species, while it is not visible between procoxae in *T. purcharti* sp. nov. Aedeagus of *T. purcharti* sp. nov. with prolonged apex is also similar to that of *Barybaena* Lacordaire, 1848 species (see ERBER & MEDVEDEV 2003). However, *Barybaena* species differ in elytra without epipleural lobe and distinct sexual dimorphism (males with enlarged pronotum and fore legs).

**Etymology.** The new species is dedicated to my friend Luboš Purchart (Czech Republic, Brno), specialist in Tenebrionidae, who collected a part of the type series.

**Collection circumstances and bionomy.** Two specimens (male and female) were seen on *Trichocalyx obovatus* Balf.f. (Acanthaceae) at 1:00 p.m. and subsequently collected, another one female was flying in habitat with shrubs dominated by *Trichocalyx obovatus* and caught by a sweeping net at ca 11:00 a.m. (L. Purchart, pers. comm. 2010). Feeding on *Trichocalyx obovatus* was not observed; however, there is a possibility that it is the true host plant of *T. purcharti* sp. nov.

**Distribution.** Socotra Island (Yemen).

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