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A new subgenus and species of *Lebia*, with additional records of Carabidae (Coleoptera) from Socotra Island

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Abstract. *Odontopeza* subgen. nov., a new subgenus of *Lebia* Latreille, 1802, with the type species *Lebia* (*Odontopeza*) *socotrana* sp. nov. is described and illustrated from Socotra Island, Yemen. The new subgenus is characterised by prominent blunt teeth on the inner side of the male mesotibia, besides a combination of other characters like presence of epilobes on mentum, deeply lobed metatarsomere IV, completeness of basal line of elytra, presence of seta on palpomere I, and an lack of incision on male apical ventrite. In addition, three carabid species are recorded from Socotra for the first time: *Amblystomus aeneolus* (Chaudoir, 1876), *Platymetopus figuratus* cf. *somalicus* Basilewsky, 1948, and *Tachys lenkoranus* Csiki, 1928. They increase the total number of Carabidae identified to species level from the island to 46; five species are considered to be endemic to Socotra Island.

Key words. Coleoptera, Carabidae, Harpalinae, *Lebia*, *Odontopeza*, taxonomy, description, new subgenus, new species, new records, Yemen, Socotra

Introduction

The extensive material of Carabidae collected during expeditions to the Socotra Archipelago between 1999 and 2012 was mainly treated by Felix et al. (2012) who listed 42 taxa identified to species level. However, the authors mentioned additional unidentified taxa: one of them, the new genus and species of Pterostichini – *Parorthomus socotranus* Guéorguiev, Wrase & Farkač, 2014 was recently described by Guéorguiev et al. (2014), while the new species of *Lebia* Latreille, 1802, representing also a new subgenus, is described in the present paper. In addition, a revision of the Carabidae specimens from the Museo di Storia Naturale dell'Universita di Pavia (a result of the Socotra Archipelago Conservation and Development Programme, supported by the United Nations Development Programme during the years 2003–2008), together with new material from the Prague National Museum from the expedition in 2012, and identification of an additional species from the Dutch expedition in 2010, revealed three species new for the carabid fauna of Socotra, which increases the total number

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of species-level identified Carabidae from the island to 46; five species are considered to be endemic to Socotra Island.

Material and methods

If not mentioned otherwise, all specimens were identified by the author. The specimens included in this study are deposited in the following institutional and private collections:

BMNH The Natural History Museum, London (Beulah Garner);
HLMD Hessisches Landesmuseum, Darmstadt, Germany (Sabine Wamser);
MCCI Natural History Museum of Carmagnola, Turin, Italy (Luca Cristiano);
MNHN Musée national d'Histoire naturelle, Paris, France (Thierry Deuve, Azadeh Taghavian);
MRAC Musée Royal de l'Afrique Centrale, Tervuren, Belgium (Marc de Meyer);
MSNP Museo di Storia Naturale dell'Universita di Pavia, Italy (Edoardo Razzetti, Francesca Pella);
NMPC Národní muzeum, Prague, Czech Republic (Jiří Hájek);
RFBE Ron F.F.L. Felix collection, Berkel Enschot, The Netherlands;
RMNH Naturalis Biodiversity Center, Leiden, The Netherlands (Ben Brugge).

Taxonomy

Lebia Latreille, 1802 is one of the largest of more than 300 genera of the subfamily Lebiinae Bonelli, 1810, which contains four tribes and 29 subtribes (Lorenz 2005). Due to its world-wide distribution, huge diversity of species (especially in the tropics), and the resemblance of specific groups to members of other subfamilies, it remains difficult to find criteria for a valid hierarchical classification of this subfamily (Ball & Hilchy 1983, Basilewsky 1984).

According to Basilewsky (1984), the classification of the subfamily is based on local or regional fauna and uses easily observed characteristics that are of secondary value. Basilewsky (1984) made an attempt to clear up the rather chaotic situation of the subfamily at that time by creating three supertribes, mainly based on the use of two major characteristics: the fact whether the labium is divided into mentum and submentum by a suture or not; and the shape of the gonapophysis of the female genitalia, also called stylomeres 1 and 2 (Ball & Hilchie 1983). Basilewsky (1984) admits that his proposition is almost exclusively based on the genera from Africa and Madagascar, and he expects that modifications, especially for American and Australian Lebiinae, will be necessary. However, his proposal was not followed by subsequent authors, e.g. Lorenz (2005).

Years before the Basilewsky's (1984) publication, Mateu (1953) already emphasized the importance of female genitalia. Mateu (1963) used these features in suprageneric sense when distinguishing tribes Lichnastenini, Singilini and Somotrichini; however he stressed more the shape of the spermathecas rather than the stylomeres. In addition, Habu (1967) pointed out the importance of female genital characters for suprageneric classification, and subsequently Habu (1982) used the stylomeres in classifying the Japanese genera of Lebiini into eight subtribes.

Other important distinguishing features in the subfamily Lebiinae are the presence or absence of suborbital setae on the ventral side of the head (Ball & Hilchie 1983), the shape of the fourth tarsomere (bilobed or not), the shape of apical palpomere (fusiform or securiform), and the apical structure of the epipleurae (simple or turned flat like in *Apristus* Chaudoir

1846). But Basilewsky (1984) warned to interpret these features with prudence because of many transitions, difficult interpretation or secondary value.

According to Basilewsky (1984) the tribe Lebiini can be characterised by the following characteristics:

- labium is divided by a suture into mentum and submentum;
- ventral side of the head without suborbital setae;
- stylomere 1 without lateral apophysis alongside stylomere 2;
- base of pronotum with more or less prominent median lobe;
- last labial palpomere fusiform and hardly or not enlarged.

The subtribe Lebiina is characterised as follows:

- stylomere 2 is short and large, rounded at apex, smooth or with very tiny pubesence, always without spines;
- posterior tarsomeres large.

From the genus *Lebia* Latreille, 1802 currently more than 730 species level taxa and 17 subgenera are described (Lorenz 2005).

On the Arabian mainland, the genus *Lebia* is represented by subgenera *Lebia* s. str. and *Nematopeza* Chaudoir, 1871. In Africa *Lebia* s.l. is known by the subgenera *Lebia* s. str., *Metalebia* Jeannel, 1949, *Nematopeza*, *Poecilothais* Maindron, 1905, and in Madagascar also by the subgenus *Rhytidopeza* Jeannel, 1949 (together with the related genera *Pachylebia* Jeannel, 1949, *Megalebia* Mateu, 1971, *Paulianolebia* Mateu, 1971, *Pseudopachylebia* Mateu, 1971 and *Pachylebiodes* Mateu, 1971). *Lebia* s. str., *Metalebia* and *Nematopeza* are represented by many species, while only four *Poecilothais* species are known in Africa and Madagascar in addition to recently described *Lebia* (?*Poecilothais*) *farkaci* Kirschenhofer, 2010 from Socotra Island. Two *Rhytidopeza* species are endemic to Madagascar.

Jeannel (1949) treated *Nematopeza* as a separate genus, with the subgenera *Nematopeza* s. str. and *Rhytidopeza*, but according to the recent check-lists (Kabak 2003, Lorenz 2005) both *Nematopeza* and *Rhytidopeza* are listed as subgenera of *Lebia* s.l. However, the genera described from Madagascar by Mateu (1971), obviously closely related to *Nematopeza* and *Rhytidopeza*, are listed as separate genera there.

Important (sub)generic distinguishing characters of *Lebia* s.l. from Arabia and adjacent Africa, mentioned by Jeannel (1949), are the presence of a suture dividing the lateral lobes of the labium and its epilobes, the presence of a complete basal margin of the elytra, the form of the pronotum and its (micro)sculpture, the presence of punctures on the elytral intervals, and the presence of a deep incision on the inner apex of the male tibia.

The characteristics mentioned above were studied and compared with the specimens from Socotra using the type species of the *Lebia* subgenera *Poecilothais* (*Astata tetragramma* (Chaudoir, 1871) = *Lebia picipennis* Motschulsky, 1864), *Lebia* s. str. (*L. senegalensis* Chaudoir, 1871), *Metalebia* (*L. madagascariensis* Chaudoir, 1850), *Nematopeza* (*N. erythrodera* Chaudoir, 1871 = *Lebia immaculata* Boheman, 1848), and *Rhytidopeza* (*R. puncticollis* Jeannel, 1949 and *R. catalai* Jeannel, 1949), and the genera *Pachylebia* (*P. pallipes* Jeannel, 1949), *Paulianolebia* (*P. rubicunda* Mateu, 1971), *Pseudopachylebia* (*P. relucens* Mateu, 1971), *Megalebia* (*M. colasi* Mateu, 1971), and *Pachylebiodes* (*P. vadoni* Mateu, 1971).

Lebia Latreille, 1802

Odontopeza subgen. nov.

Type species. *Lebia socotrana* sp. nov., here designated.

Description. General habitus (Fig. 1): medium sized, almost uniformly brown, stout *Lebia*, resembling members of subgenus *Rhytidopeza*. Head and pronotum brownish red, head somewhat darker. Elytra dull brown. Tibiae and femora yellow, tarsi yellowish brown.

Head coarsely punctured, punctures confluent into wrinkles near eyes. Surface with isodiametric microsculpture. Eyes very large and protruding, temples perpendicular and very short. Antennae reaching just beyond end of scutellar stria, pubescent from last two thirds of antennomere IV onwards. Clypeus with two setae. Labium divided into mentum and submentum by suture. Mentum with epilobes and stout triangular middle tooth (Fig. 3). Basal labial palpomeres with one seta, hardly recognizable. Ultimate maxillary and labial palpomeres fusiform. Ventral side of head without suborbital setae.

Pronotum transverse, anterior margin straight, anterior angles broadly rounded, not protruding. Disc coarsely wrinkled, with isodiametric microsculpture. Basal lobes slightly protruding, basal border smoothly rounded (Fig. 4).

Elytra wide, widest in about two thirds of length. Lateral margin broadly rounded at humeri, continuing into basal margin and finally into scutellar stria, which lies in first interval. Scutellar pores at base of first stria. Epipleura smooth with some deep irregular grooves (Fig. 2).

Legs. Tarsi glabrous on upper side; rather narrow and long (metatarsomere I as long as II+III combined). Protarsomere IV incised for two thirds, mesotarsomere IV for half of tarsomere, metatarsomere IV incised for two fifths (as in Fig. 5 and Table 1). Male mesotibia with three blunt teeth (Fig. 6G).

Female genitalia. Stylomere 1 without lateral apophysis alongside stylomere 2. Stylomere 1 short, large, rounded at apex with hardly discernible (at 100×) tiny pubescence, without spines.

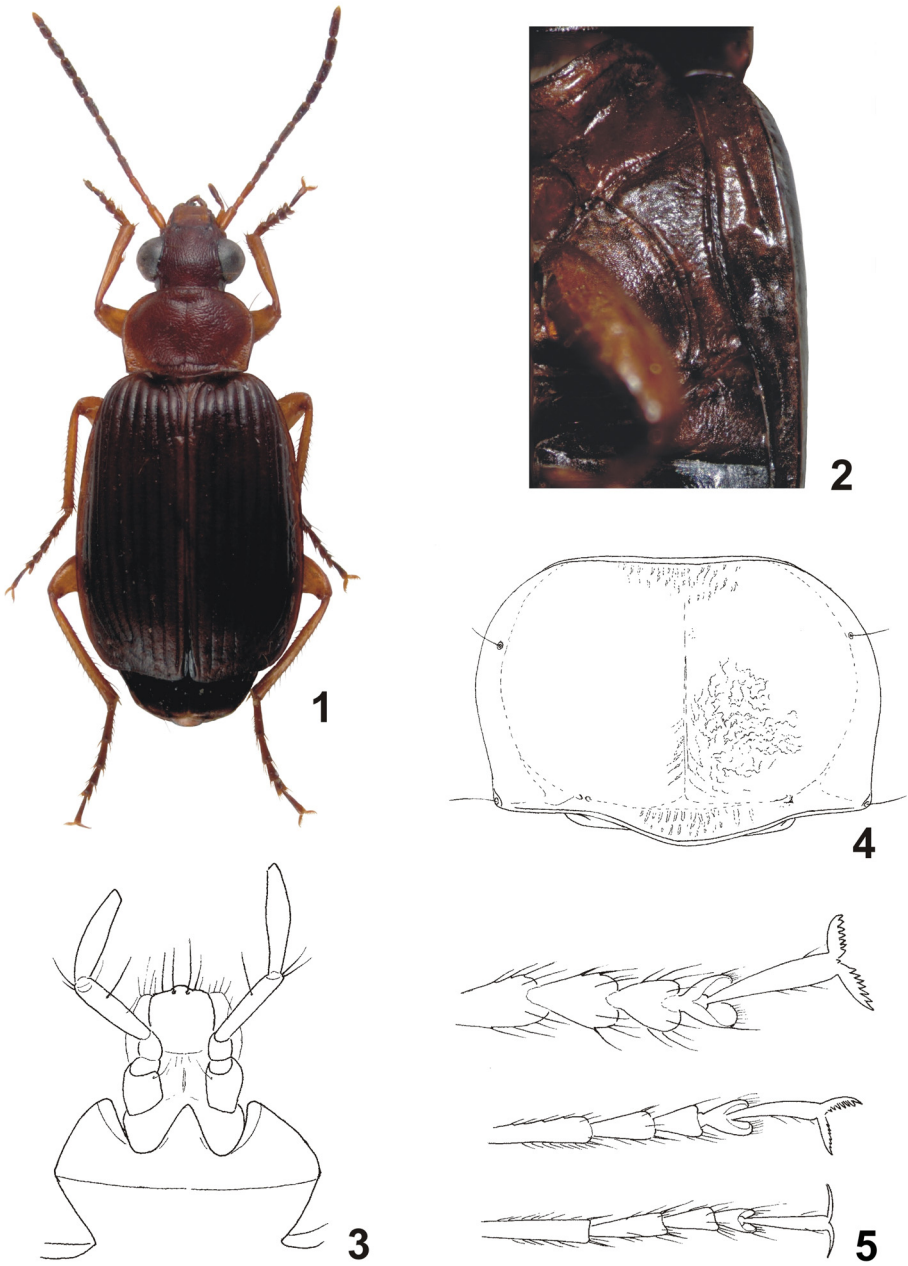
Differential diagnosis. *Odontopeza* subgen. nov. has a clearly visible suture between the lateral lobes of the labium and the epilobes (Fig. 3), like *Paulianolebia*, *Pachylebiodes*, *Nematopeza* and *Rhytidopeza*. As in these taxa, *Odontopeza* subgen. nov. also has a hardly visible seta bearing puncture on its basal labial palpomeres (Fig. 3). The subgenera *Poecilothais*, *Lebia* s. str. and *Metalebia* lack these characteristics.

Odontopeza subgen. nov. has a complete basal margin of the elytra like in *Nematopeza*, *Rhytidopeza*, *Megalebia* and *Poecilothais*, in contrast to *Lebia* s. str., *Metalebia, Paulianolebia*, *Pseudopachylebia*, *Pachylebiodes* and *Pachylebia*.

The anterior angles of the pronotum are completely rounded in *Odontopeza* subgen. nov., *Nematopeza*, *Rhytidopeza* and *Pachylebia*. They are clearly marked in *Poecilothais*, *Lebia* s. str. and *Metalebia*.

In *Rhytidopeza* and the genera described by Mateu (1971) tarsomeres are rather stout, less stout in *Nematopeza* and *Odontopeza* subgen. nov., while in *Poecilothais*, *Lebia* s.str. and *Metalebia* these tarsomeres are much more slender.

The punctation of elytral intervals is also a characteristic for these (sub)genera. *Odontopeza* subgen. nov. and *Pachylebia* have mixed finer and coarser punctures, while *Rhytidopeza*



Figs 1–5. *Lebia* (*Odontopeza*) *socotrana* sp. nov. 1 – dorsal habitus; 2 – epipleura; 3 – mentum; 4 – pronotum; 5 – tarsi. Not in scale.

Table 1. Depth of incision of tarsomere IV in relation to its length in type species of each genus or subgenus mentioned.

	Lebia senegalensis	*Poecilothais tetragramma*	*Metalebia madagascariensis*	*Pachylebia pallipes*	*Pachylebiodes vadoni*	*Megalebia nigrotestacea*	*Pseudopachylebia reluctans*	*Paulianolebia rubicunda*	*Nematopeza erythrodera*	*Rhytidopeza punctaticollis*	*Odontopeza socotrana* sg. & sp. n.
protarsomere IV	2/3	2/3	3/4	2/3	2/3	3/4	2/3	1/3	2/3	1/2	1/2
mesotarsomere IV	2/3	2/3	3/4	2/3	2/3	3/4	1/2	1/3	1/2	1/2	1/2
metatarsomere IV	1/4	2/3	3/4	2/3	2/3	3/4	1/2	1/2	1/4	1/3	1/3

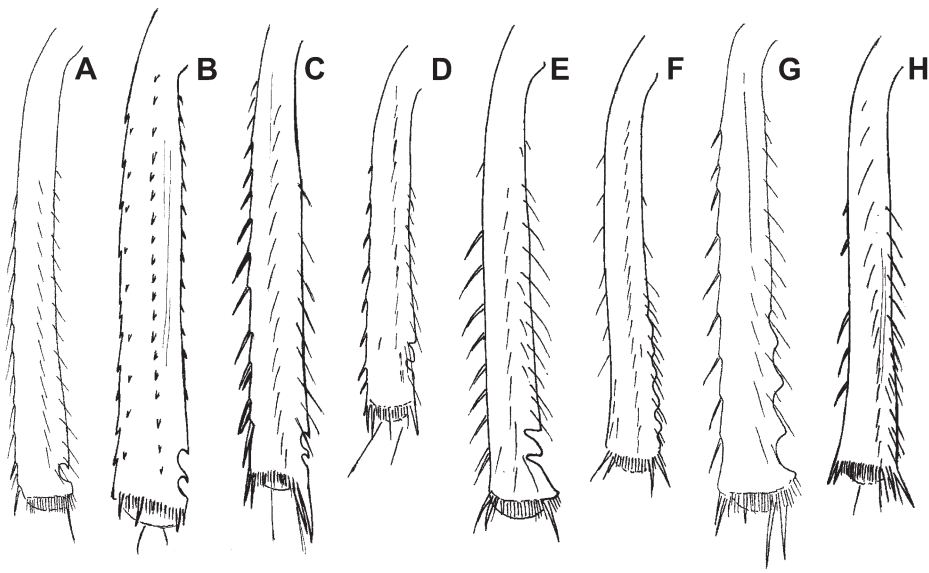


Fig. 6 Male mesotibiae in selected (sub)genera, showing the different types. A – *Nematopeza*, B – *Rhytidopeza*, C – *Paulianolebia,* D – *Pachylebiodes*, E – *Megalebia*, F – *Pseudopachylebia*, G – *Odontopeza* subgen. nov., H – *Pachylebia*.

has many rather coarse punctures. In *Nematopeza* and *Megalebia* the punctures are fine and shallow; in *Lebia* s. str. and *Poecilothais* even more vague, mainly because of the rugosity of the intervals; *Paulianolebia* and *Pachylebiodes* have very fine punctures and *Pseudopachylebia* has even finer and fewer punctures.

Odontopeza subgen. nov. has no incision on the male tibia but there are three blunt 'teeth' on the inner side of the middle tibia, and the inner end of tibial apex is strongly protruding outwards (Fig. 6G). *Pachylebia* is the only genus in which males have no specific markings on the inner side of the tibiae (Fig. 6H). *Pseudopachylebia* has no incisions on male tibiae,

Table 2. Summary of characters states of selected (sub)genera of *Lebia*.

	Lebia	*Poecilothais*	*Metalebia*	*Pachylebia*	*Paulianolebia*	*Pseudopachylebia*	*Megalebia*	*Pachylebiodes*	*Nematopeza*	*Rhytidopeza*	*Odontopeza* subgen. nov.
epilobes	absent	absent	absent	absent	present	absent	absent	absent	present	present	present
male mesotibia	one incision	one incision	one incision	no incisions	two incisions	crenulate	two incisions	two incisions	one incision	two incisions	three teeth
metatarsus IV, deeply bilobed	no	yes	yes	yes	no	no	yes	yes	no	no	no
basal line of elytra	absent	present complete	absent	absent	absent	absent	present complete	absent	present complete	present complete	present complete
anterior angles of pronotum protruding	yes	yes	yes	no	no	no	no	no	no	no	no
male apical ventrite	not incised	not incised	incised	not incised	incised	not incised	incised	incised	not incised	very weakly incised	not incised
seta on labial palpomere I	absent	absent	absent	absent	present	absent	absent	present	present	present	present

but the inner side is crenulated (Fig. 6F). According to Jeannel (1949), *Nematopeza* differs from *Lebia* in the absence of a deep incision on the inner apical part of the male mesotibia. However, the type species of *Nematopeza*, *N. erythrodera* Chaudoir, 1871 (junior synonym of *N. immaculata* Boheman 1848), has an incision on the tibia in males; after examination of several other *Nematopeza* species, it is evident that males in *Nematopeza* do have an incision on the inner end of the mesotibia (Fig. 6A), similar to members of *Lebia* s. str., *Lamprias* Bonelli 1810, *Poecilothais* and *Metalebia*. Furthermore, Jeannel (1949) described *Rhytidopeza* as a new subgenus of *Nematopeza*, with two species based on supposedly female specimens. However, the type specimens of *Rhytidopeza puncticollis* Jeannel, 1949 and *R. catalai* Jeannel, 1949 are not females but definitely males with two incisions on the mesotibiae (Fig. 6B) similar to those of *Paulianolebia*, *Megalebia* and *Pachylebiodes* (Figs 6B–E).

In general appearance *Odontopeza* subgen. nov. seems to be most similar to *Nematopeza* and *Rhytidopeza* from which it differs mainly in the absence of incisions on the inner side of the mesotibia of males. It also differs from *Rhytidopeza* in having no incision on the male apical abdominal segment. Furthermore it closely resembles all the brown members of the lebiine genera, exclusively known from Madagascar and described by Mateu (1971). The differences between *Odontopeza* subgen. nov. and selected (sub)genera of '*Lebia*' are summarised in Table 2. It is beyond the scope of this article to make decisions about the taxonomic

status of *Nematopeza*, *Rhytidopeza* and *Odontopeza* subgen. nov. described as subgenera in one respect and the genera of Mateu (1971) described from Madagascar in the other.
Etymology. The new subgenus is named after the dentate legs of the males: in Greek 'peza' means 'legs' or 'feet', 'odonto' means dentate; gender feminine.

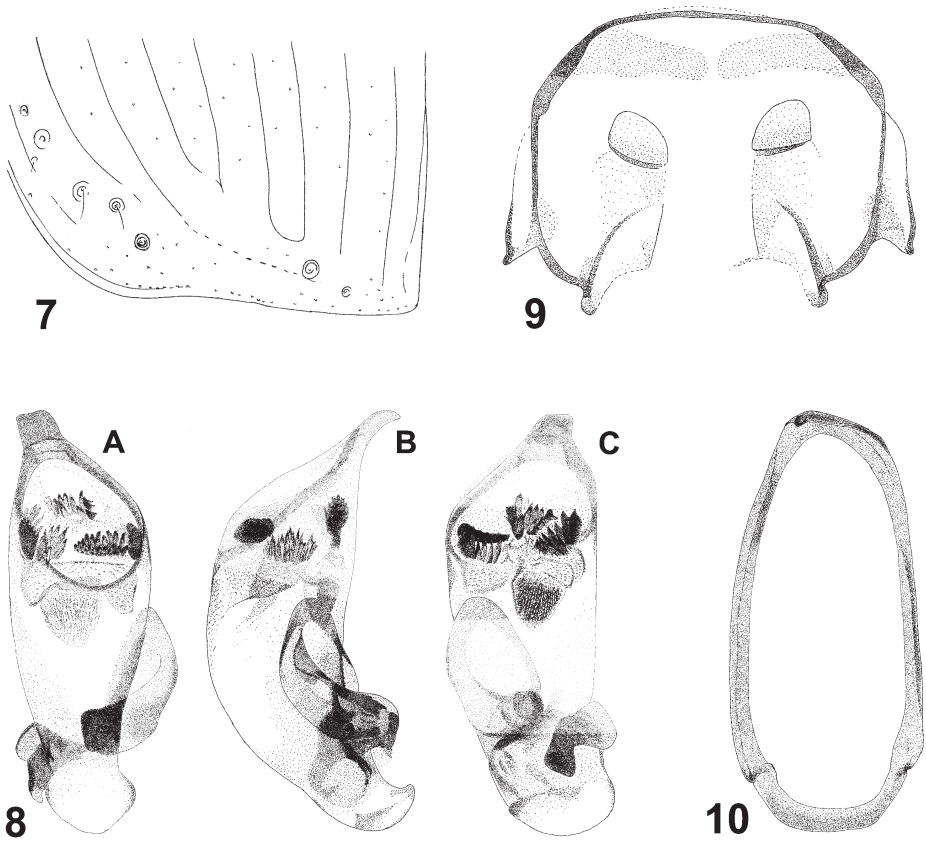
Lebia (*Odontopeza*) *socotrana* spec. nov.

Type material. Holotype: ♂, '**YEMEN,** Socotra Island, Aloove aerea, Aloove village env., *Jatropha unicostata* shrubland with *Boswellia elongata* trees, 12°31.2′N 54°07.4′E, 221m, 19-20.vi.2012, leg. J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart' (NMPC). Paratypes (48 specimens): 2 ♂♂ 4 ♀♀, same data as holotype; 8 ♂♂ 3 ♀♀, Zemhon area, 12°20′58″N 54°06′39″E, 270-300m, 16-17.vi.2010, leg. V. Hula; 9 ♂♂ 18 ♀♀, Zemhon area, 12°30′58″N 54°06′39″E, 270-350m, 3-4.ii.2010, leg. L. Purchart & J. Vybíral; 1 ♂, Hadiboh env., 12°65′02″N 54°02′04″E, 10-100m, 21.xi-12.xii.2003, leg. David Král; 1 ♂, Wadi Ayhaft, camp, 12°36′58.7″N 53°59′26.4″E, 22.ii.2009, leg. R.F.F.L. Felix; 1 ♂, Hadiboh, 12°38′55.79″N 54°00′46.79″E, 06.xi.2010, leg. R.F.F.L. Felix; 1 ♂, Firmihin plato, 12 28 46N 54 00 89E, 400-500m, 18-19.vi.2010, leg. V. Hula & J. Niedobová (28 paratypes in NMPC, other paratypes in BMNH, MNHN, MRAC, RFBE and RMNH).

Description. ***Male holotype.*** *Colouration.* Head brown, mandibles, labrum and clypeus more testaceous, mandibles with dark tip. Antennomeres I–III and basal third of IV yellowish brown, rest of antennae reddish brown. Maxillary and labial palpi yellowish red. Underside of head red. Pronotum red with lateral margins and posterior angles somewhat lighter. Elytra dull brown, except scutellum and lateral margin which are testaceous. Epipleura, meso- and metaventrite and abdominal ventrite I testaceous, rest of abdomen black. Underside reddish, except for brown epipleura and abdominal ventrites II–VI. Legs yellowish red.

Sculptures and structures. Head. Vertex heavily wrinkled and punctured, microsculpture isodiametric, suppressed. Two supraocular setae. Temples very short and almost perpendicular to neck. Eyes almost hemispherical. Labrum transverse with six setae frontally; microsculpture isodiametric laterally, meshes more transverse medially; anterior margin almost straight. Clypeus with anterior margin very slightly incurved, with two setae; posterior margin slightly convex, with isodiametric microsculpture; on disc convex, with shallow impression near base medially and flattened towards anterior angles. Base longitudinally wrinkled, punctured and with isodiametric microsculpture. Antennomeres I–III and basal third of IV glabrous, rest of antennae pubescent. Antennae slender: antennomere V 3.3 times longer than wide. Maxillary palpi with some tiny setae on terminal, fusiform, oblique truncate palpomeres. Labial palpomere I with two large setae and a few smaller ones on its inner side. Mentum with simple median tooth, epilobes separated from mentum by suture. Head width 1.6 mm.

Pronotum transverse, 1.4 times as wide as long. Anterior angles completely rounded. Surface of disc heavily wrinkled with more or less suppressed isodiametric microsculpture, except along anterior margin and on lobes, latter with microsculpture more distinct. Lobe slightly and gradually protruding. Pronotum on base and anterior margin beaded, sides rather flat, slightly bent upwards near posterior angles; basal grooves shallow. Median line thin, impunctate. Pronotum with two setae on each side, first in about one fourth of length and at distance of diameter of puncture away from lateral margin; second one in posterior angle. Basal furrow rather deep, uninterrupted by median line. Median line fine, beginning at about width of antennomere V from apical margin, and attaining basal furrow. Lateral margin very narrow at apex, gradually becoming wider until about half of length of pronotum, then



Figs 7–10. *Lebia* (*Odontopeza*) *socotrana* sp. nov. 7 – apex of elytron; 8 – aedeagus (A – dorsal, B – lateral, C – ventral); 9 – gonocoxites; 10 – genital abdominal segment. Not in scale.

suddenly becoming much wider towards very shallow basal impressions (Fig. 4). Anterior border of pronotum much narrower than base, sides at apex very strongly and regularly curved, from middle onwards almost straight or very weakly sinuate towards posterior angles (Fig. 4). Prosternal process without raised side border and tip dorsally bent, without setae, brown. Middle part of prosternum towards prosternal process very convex with sparse setae.

Elytra wide. Striae finely punctured, intervals somewhat convex at base, becoming flatter towards apex. Inner intervals at apex flat, outer ones very slightly convex. Intervals with strong isodiametric microsculpture and small shallow punctures. Basal margin complete, almost continuing into long scutellar stria; scutellar pores present. Humeri prominent. Apex of elytra hardly sinuate, obliquely truncated in almost straight line. Interval III with two setae, first at almost same distance from base as second from apex. First pore touching stria III, second near or touching stria III. Row of setiferous punctures in elytral stria VIII with 15 pores, first five (posthumeral pores) and last five (preapical pores) closer together than the middle ones. Last

pore in middle of interval IX, 14th nearer stria VIII and 13th nearer stria IX. Stria VII almost reaching stria I at apex, broken up into punctures apically, with two setae at apex of intervals II and III (Fig. 7). Epipleura smooth with some deep irregular grooves (Fig. 2).

Ventrites with sparse and long pubescence. Pro- and mesepisterna somewhat rugose, with some erect short setae. Male apical abdominal ventrite without small incision.

Tarsi rather stout, metatarsomere III about two times longer than wide. Incision of metatarsomere IV reaches one third of tarsomere length. Claws pectinate with six teeth. Male with three blunt protruding teeth on inner apex of mesotibia; inner side of apex prominently protruding outwards.

Aedeagus with median lobe short, rather bulky and broad, with large apical opening, asymmetrical, apex slightly pointing to left and tip strongly pointed downwards. Internal sac with five clusters of larger and finer teeth and large oval reticulated body, flanked on each side by pointed more or less scaly lobes (Fig. 8). Genital segment as in Fig. 10.

Female. Stylomeres 1 and 2 as in Fig. 9

Variability. All specimens of the type series agree with the holotype in all aspects, except for measurements: body length 5.0–7.4 mm, (holotype 6.5 mm; mean value 5.9 mm); females on average slightly larger than males. Antennomere V 2.7–4.0 times longer than wide (mean value 3.2). Head width 1.2–1.6 mm (mean value 1.4 mm). Pronotum 1.4–1.5 times as wide as long.

Etymology. The specific epithet refers to the presence of the species in the island of Socotra; adjective.

Collection circumstances. Most specimens of the new species were attracted to light trap (J. Hájek, pers. comm.).

New records

Subfamily HARPALINAE

Tribe Chlaeniini

Chlaenius (*Pachydinodes*) *sokotranus* Csiki, 1931

Material examined (4 spec.). **YEMEN: Socotra Island:** Wadi Ayhaft, 12°36′15.00″N 53°59′36.41″E, 255 m, 27-30.x.2007, pitfall trap, 1 specimen, leg. F. Pella; Wadi Ayhaft, 12°36′32.57″N 53°59′15.46″E, 260 m, 27-30.x.2007, pitfall trap, 1 specimen, leg. F. Pella; Hadiboh, 12°39′8.85″N 54°02′7.99″E, 5 m, 5.-9.ii.2008, pitfall trap, 1 specimen, leg. F. Pella; Qalansiyah, 12°41′49.15″N 53°29′58.55″E, 55 m, pitfall trap, 1 specimen, 4.-6.xi.2007, leg. F. Pella (all MSNP).

Tribe Harpalini

Amblystomus aeneolus (Chaudoir, 1876)

Amblystomus somalicus Basilewsky, 1948: Felix et al. (2012): 89 (misidentification, partim).

Material examined (2 spec.). **YEMEN: Socotra Island:** Bizidig, *Avicennia marina* mangrove, 12°18.6′N, 58°48.2′E, 6 m, 13.vi.2012, 1 spec., Socotra Expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg. (NMPC); Hadiboh, town and direct surroundings, 123657N 540101E, Soc2000.01, 20.x-1.xi.2000, 1 spec., H. Pohl leg. (HLMD).

Diagnosis. Length 2.5–3.3 mm. Black. Microsculpture fine but distinct. Pronotum wider than long, anterior angles prominent, base narrower than anterior border. Legs yellowish red.
Comments. The specimen from Hadiboh was originally identified as *A. somalicus* by M. Persohn. However, according to the straight sides of the pronotum and the prominent anterior angles, it belongs to *A. aeneolus*.
Distribution. Yemen, East Africa, Madagascar. **First record from Socotra Island**.

Platymetopus figuratus cf. *somalicus* Basilewsky, 1948

Material examined (6 spec.). **YEMEN: Socotra Island:** Bizidig, *Avicennia marina* mangrove, 12°18.6′N, 58°48.2′E, 6 m, 13.vi.2012, 2 spec.; Delisha village, *Jatropha unicostata* shrubland, at light, 12°41.2′N, 57°07.7′E, 36 m, 8.vi.2012, 1 spec.; Momi plateau, 12°31′32″N, 54°18′52″E, 470 m, 7.vi.2012, 1 spec.; Noged plain, Abataro, border of sand dunes and shrubland, 12°22.1′N, 54°03.4′E, 20 m, 12.-13.vi.2012, 1 spec.; Homhil protected area, open woodland with *Boswellia* & *Dracaena* trees, 12°34.5′N, 54°18.5′E, 360-500 m, 10.-11.vi.2012, 1 spec. Socotra Expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg. (all NMPC).

Diagnosis. Length 6.8–8.0 mm. Head black with faint greenish lustre, pubescent and coarsely punctured. Pronotum brown with yellowish brown borders, pubescent and coarsely punctured. Elytra brownish yellow, with odd intervals reddish brown, brown or black, at least towards end of the dark markings, sometimes even red at beginning (especially in interval VII). The dark markings longest in intervals I and III, distinctly shorter in V, and again shorter in VII. Interval IX dark in its whole length. Even intervals always light brownish yellow, but somewhat darker towards end. Apex always yellow. Legs, palpi and antennomeres yellow, from antennomere four on sometimes a bit darker.
Comments. The following specimens were studied: one from Kenya, two from Transvaal, one from Botswana, one from Zimbabwe (these specimens should refer to the nominotypical form), one from the type locality of *P. figuratus somalicus*: Mts Mabla (Djibouti), and one from Yemen, which also should be the subspecies *somalicus*.

According to Basilewsky (1948) the nominotypical form from southwest and south Africa is never longer than 6.5 mm and the dark markings are brown. In the subspecies *somalicus*, the specimens from Djibouti are longer, the brown colour of the markings is turning into a dark metallic green, and the punctation of the head, pronotum and elytra is weaker.

The specimen studied from Kenya is 7.0 mm long; the ones from Transvaal, identified by Basilewsky, are 6.5 and 7.0 mm long, with a very faint greenish lustre; the one from Botswana is 7.3 mm long with brown markings, and the specimen from Zimbabwe is 7.5 mm long with a faint greenish lustre on the dark markings of the elytra. The specimen from Djibouti is 8.5 mm long, its intervals are brown without greenish lustre. The specimen from Yemen mainland is 9.0 mm long and greenish.

In the Socotran specimens, all between 6.8 and 8.0 mm long, the dark markings are brown with a hardly visible faint metallic coppery lustre. The punctation of the pronotum in these specimens, and in the specimens from Yemen and Somalia, seems a little less dense and less deep than in the African specimens. Also the punctation of the elytral intervals seems a little vaguer.

That means that the differential characteristics mentioned by Basilewsky (1948) do not always apply, perhaps except for punctation. Also the East African, Yemeni and Socotran

specimens, on average, are longer than the South African specimens. There seems to be no difference in the aedeagi of all the studied specimens. The taxonomic status of both subspecies needs a more comprehensive study.

Andrewes (1924) described *Platymetopus pictus* Andrewes, 1924 from Ceylon, India and also from Yemen. As for its pattern of the elytra the author points out the similarity with *P. figuratus*, without mentioning differences between the two species. Also, the description matches completely the nominotypical subspecies of *P. figuratus*. The types of both taxa should be compared, but it is highly probable that specimens of *P. pictus* from Yemen will turn out to be *P. figuratus somalicus* (no relevant differences could be found between the specimens from Socotra, Yemen mainland, and Eritrea), or even *P. pictus* may represent a senior subjective synonym of *P. figuratus somalicus*.

Distribution. Eritrea, Djibouti. **First record from Socotra Island.**

Tribe Lebiini

Tetragonoderus flavovittatus Waterhouse, 1881

Material examined (14 spec.). **YEMEN: Socotra Island:** Shuab camp site, 12°32′37.28″N 53°22′22.71″E, 19 m, 25.xii.2007, 3 spec., F. Pella leg.; Wadi Egiya, 12°38′31.68″N 53°37′38.49″E, 165 m, 5.-22.xi.2007, 2 spec., F. Pella leg.; Hadiboh, 12°39′15.62″N 54°02′40.26″E, 0 m, 5.–9.ii.2008, pitfall trap, 3 spec., F. Pella leg.; Hadiboh, 122859.10N535444.05E, 0 m, 5.-9.ii.2008, pitfall trap, 3 spec., F. Pella leg.; Hadiboh, 12°39′25.18″N 55°02′43.79″E, 0 m, 5.-9.ii.2008, pitfall trap, 1 spec., F. Pella leg.; Wadi Ayhaft, 12°36′32.57″N 53°59′15.46″E, 260 m, 27-30.x.2007, pitfall trap, 1 spec., F. Pella leg.; Wadi Trubah, 12°33′47.31″N 53°55′45.11″E, 148 m, 2.-10.iii.2008, pitfall trap, 1 spec., F. Pella leg. (all MSNP).

Subfamily TRECHINAE

Tribe Bembidiini

Sphaerotachys pseudocomptus (G. Müller, 1942)

Material examined (1 spec.). **YEMEN: Socotra Island:** Qasroo, 12°35′33.08″N 53°50′14.14″E, 20 m, 28.-31.x.2007, pitfall trap, 1 spec., F. Pella leg. (MSNP).

Tachys lenkoranus Csiki, 1928

Material examined (112 spec.). YEMEN: Socotra Island: Neet, salt marsh, at light, 12°58’52.9’’N 53°23’07.4’’E, 2 m, 28.x.2010, 111 spec., R.F.F.L. Felix leg., J. Coulon & R.F.F.L. Felix det.; Adhoh Dimello, 12°34’19.9’’N 54°02’49.0’’E, 31.x.2010, 1 spec., R.F.F.L. Felix leg. (all RFBE).

Diagnosis. Length 2.3–2.7 mm. Head black, pronotum and elytra yellow. Eyes very big, convex. Pronotum transverse, sides not sinuate, posterior angles obtuse. Elytra relatively wide, sides subparallel, with or without very vague, pale and reduced median spot. Legs, palps and antennae yellow.

Distribution. Cyprus, Caucasus, Near East (Iran, Syria) and from Central Asia to the Far East. **First record from Socotra.**

Additional comments on Socotran carabid fauna

The identification of *Perileptus* (*Pyrrotachys*) cf. *testaceus* Putzeys, 1870 (Felix et al. 2012) was confirmed by A. Lompe (pers. comm., 2013).

Besides that, some taxa collected in Socotra still need to be studied and they will be dealt with in later publications. All these species will be at least new records for Socotra.

- a *Microlestes* Schmidt-Göbel, 1846 species, collected in the Hagher mountains and at Wadi Zerig, Dixam plateau;
- an *Apristus* Chaudoir, 1846 species, collected in several places;
- a *Mesolestes* Schatzmayr, 1943 species, near *M. fuscus* Mateu, 1956, collected in Hagher mountains at Skand and wadi Madar;
- a *Metadromius* Bedel, 1907 species collected at Homhil;
- one *Amblystomus* Erichson, 1837 species, at first sight like *A. dispar* Basilewski, 1951 from Senegal and Djibouti, and one species, probably new, reminding of *A. colasi* Basilewsky, 1948 from Kenya.
- a Pogonini species collected at Neet;
- a *Tachys* Dejean, 1821 species collected at Shuab.

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References

ANDREWES H. E. 1924: Descriptions of some new Carabidae from Ceylon (Part. I.). *Spolia Zeylanica* **12**: 223–251.

BALL G. E. & HILCHIE G. J. 1983: Cymindine Lebiini of authors: Redefinition and reclassification of genera (Coleoptera: Carabidae). *Quaestiones Entomologicae* **19**: 93–216.

BASILEWSKY P. 1948: Coléoptères harpalides nouveaux du Muséum National d'Histoire Naturelle. *Revue Française d'Entomologie* **14**: 209–227.

BASILEWSKY P. 1950: Révision générale des Harpalinae d'Afrique et de Madagascar (Coleoptera, Carabidae). Première partie. *Annales du Musée du Congo Belge, Tervuren*, *Série in 8°, Sciences Zoologiques* **6**: 1–283.

BASILEWSKY P. 1951: Révision générale des Harpalinae d'Afrique et de Madagascar (Coleoptera, Carabidae). Deuxième partie. *Annales du Musée du Congo Belge, Tervuren*, *Série in 8°, Sciences Zoologiques* **9**: 1–333.

BASILEWSKY P. 1984: Essai d'une classification supragénérique naturelle des carabides lébiens d'Afrique et de Madagascar. *Revue de Zoologie Africaine* **98**: 525–559.

FELIX R., FARKAČ J. & SULEIMAN A. S. 2012: Annotated checklist of the Carabidae (Coleoptera) of the Socotra Archipelago. Pp. 75–106. In: HÁJEK J. & BEZDĚK J. (eds.): Insect biodiversity of the Socotra Archipelago. *Acta Entomologica Musei Nationalis Pragae* **52 (supplementum 2)**: i–vi + 1–557.

HABU A. 1967: *Fauna japonica. Carabidae Truncatipennes group (Insecta: Coleoptera)*. Biogeographical Society of Japan, Tokyo, xiv + 338 pp + 27 pls.

HABU A. 1981: Revised and supplementary notes on and descriptions of the Truncatipennes group of Japan (I) (Coleoptera, Carabidae). *Entomological Review of Japan* **36**: 83–142.

JEANNEL R. 1949: Coléoptères carabiques de la region Malgache (Troisième partie). *Faune de l'Empire Français* **6**: 767–1146.

GUÉORGUIEV B., WRASE D. W. & FARKAČ J. 2014: Revision of the East Mediterranean Orthomus (Coleoptera: Carabidae: Pterostichini), with description of Parorthomus gen. nov. socotranus sp. nov. from Socotra Island and key to the Old World genera of subtribe Euchroina. *ZooKeys* **427**: 21–57.

KABAK I. 2003: Tribe Lebiini. Pp. 408–439. In: LÖBL I. & SMETANA A. (eds): *Catalogue of Palaearctic Coleoptera. Volume 1. Archostemata – Myxophaga – Adephaga*. Apollo Books, Stenstrup, 819 pp.

KIRSCHENHOFER E. 2010: Faunistische Neumeldungen und Beschreibung neuer Arten der Gattungen Aristolebia Bates, 1892, und Lebia Latreille, 1802 aus Yemen, Laos, Malaysia, Thailand und Nepal (Coleoptera Carabidae). *Acta Coleopterologica* **26**: 49–64.

LORENZ W. 2005: *Systematic list of extant ground beetles of the world. (Coleoptera "Geadephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). 2nd edition.* W. Lorenz, Tutzing, 530 pp.

MATEU J. 1953: Quelques Microlestes du Sahara Méridional et de la Mauritanie. *Annales de la Société Entomologique de France* **122**: 113–121.

MATEU J. 1963: Notas sobre tres series fileticas de Lebiidae (Lichnastenini Thomson, Singilini Jeannel, Somotrichini nov.) (Coleoptera-Carabidae) y rectifications sinonimicas. *Revue de Zoologie et Botanique Africaine* **67**: 97–104.

MATEU J. 1971: Notes sur les lébiens Malgaches [Col. Carabidae] (2e note). *Annales de la Société Entomologique de France* **7**: 611c624.

WRANIK W. 2003: *Fauna of the Socotra Archipelago: field guide*. Universität Rostock, Rostock, 542 pp.