

Research article

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Soft-winged flower beetles (Coleoptera: Malachiidae) of the United Arab Emirates

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Abstract. Soft-winged flower beetles from the United Arab Emirates are studied for the first time. Three new genera, *Tonyattalus* gen. nov. of the tribe Attalini, *Tonycolotes* gen. nov. of the tribe Colotini, and *Arabotroglops* gen. nov. of the tribe Troglopini, and two species, *Tonyattalus vanharteni* gen. et sp. nov. and *Arabotroglops longantennatus* gen. et sp. nov., are described. *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov. is recorded from the United Arab Emirates for the first time and transferred from the genus *Colotes* Erichson, 1840. All species discussed in the paper are described and illustrated. The fauna of soft-winged flower beetles of the Arabian Peninsula is reviewed.

Keywords. United Arab Emirates, Malachiidae, soft-winged flower beetle, new combination, new genera, new species.

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Introduction

Previously, no species of soft-winged flower beetles were known from the United Arab Emirates (UAE), and knowledge of Arabian Malachiidae Fleming, 1821 is based on species collected from neighbouring Saudi Arabia, Oman and Yemen. The beetles collected by Antonius van Harten in UAE during 2006–2008 provided new and taxonomically interesting data used to establish new taxa and to add to our knowledge of the distribution of soft-winged flower beetles in the Arabian Peninsula.

Natural conditions occurring in the Arabian Peninsula are similar to those in West or North Africa in providing a wide range of niches for Malachiidae beetles. However, the number of taxa (31 species and two subspecies) currently known from Arabia is considerably lower than the species richness in the African regions mentioned above. This fact can be explained by the difficulties encountered in collecting malachiids in desert biocoenoses due to their very short adult life, usually one or two weeks in which the imago emerges to search for a sexual partner, copulate and lay eggs. No doubt, the soft-winged flower beetle fauna of this very interesting region could be increased two-fold in species number by thorough collecting activity in future.

Representatives of two subfamilies, Carphurinae Champion, 1923 and Malachiinae Leach, 1817, were recorded from Arabia; however, while the latter is common in desert biocoenoses, the single representative of Carphurinae, *Carphuroides talhouki* Wittmer, 1984 from Saudi Arabia is surprising due to the preference of beetles of this subfamily in the moist conditions of tropical forests.

The subfamily Malachiinae is represented in the Arabian Peninsula by seven tribes, Attalini Abeille de Perrin, 1890, Ebaeini Portevin, 1931, Apalochrini Mulsant & Rey, 1867, Colotini Abeille de Perrin, 1890, Illopinini Jacobon, 1911, Malachiini Fleming, 1821 and Troglopini Mulsant & Rey, 1867, showing high potential of species diversity.

Two species and two genera from Saudi Arabia, *Malachiomimus buettikeri* (Wittmer, 1980) and *Brachyattalus arabicus* (Wittmer, 1980), and two species of *Attalus* Erichson, 1840, *A. testaceimembris* Wittmer, 1954 and *A. yemenitus* Wittmer, 1982, both from Yemen, represent the tribe Attalini. The genus *Brachyattalus* Wittmer, 1988 was proposed for African species with a small body incompletely covered by the elytra and possessing extremely long antennae; the presence of this genus in Arabia is expected, while *Malachiomimus* Champion, 1921, known as a Himalayan endemic, was erroneously proposed by Evers (1989). The genus *Attalus* is a widespread genus that includes a high number of polymorphic species and requires taxonomic revision, including two species from Yemen.

The tribe Ebaeini is represented by two genera, *Mixis* Abeille de Perrin, 1885 and *Pachyebaeus* Wittmer, 1970. *Mixis* is a typical resident of the African fauna, and all species of *Pachyebaeus* are known from Madagascar, and only one, *P. cameroni* (Pic, 1903), is recorded from Somalia and Arabia, but the latter is questionable or, indeed, incorrect. Four species of *Mixis*, *M. brittoni* (Wittmer, 1954), *M. curvispinus* (Wittmer, 1954), *M. perforatus* (Wittmer, 1954) and *M. pilosoplicatus* Wittmer, 1954, are known from Yemen, and *M. scotti* (Wittmer, 1954) from Yemen and Saudi Arabia.

Three species of Apalochrini are known from the southwestern Palaearctic, namely *Intybia aurantiaca arabica* (Wittmer, 1954) (Yemen, Saudi Arabia), *I. venusta* (Erichson, 1840) (Egypt, Ethiopia, Niger, Saudi Arabia, Senegal, Sudan, Iran, Tajikistan – South Palaearctic-Palaeotropical) and *Hadrocnemus millingeni* (Champion, 1920) (Yemen) (Arefnia & Tshernyshev 2004; Mayor 2007; Plonski 2016). The latter species was described as *Hapalochrus* (*Apalochrus*), and was provisionally transferred to *Hadrocnemus* Kraatz, 1895 when *Apalochrus* Erichson, 1840 was determined as a Palaearctic genus (Mayor 2003; Tshernyshev 2015a, 2015b). The generic attribution of the species is still unclear, since some characters, such as the presence or absence of an appendage on the metathorax, has not been studied. The original description by Champion notes the presence of a tarsal comb on the anterior legs of male: “anterior tarsal joints 1 and 2 slightly thickened, 2 shorter than 1 and narrowly extended over the base of 3”, and the specific shape of the anterior tibiae: “thickened, angularly dilated at about the middle above, and obliquely compressed, and with a diaphanous space on its inner edge, towards the apex”, and intermediate tibiae: “intermediate tibiae much thickened, deeply sinuate within from a little beyond the middle to the apex, and with a curved retractile lobe visible in the cavity” (Champion 1920: 325).

Species of *Intybia* Pascoe, 1866 are typical residents of South-East Asia, and also occur in Eurasia, Africa and Australia (Plonski 2013, 2014a, 2014b, 2016; Plonski & Geiser 2014; Tshernyshev 2015b, 2016a, 2016b). Most of these prefer littoral habitats and can be found on stones near the water edge, but several species, such as *I. venusta* (Erichson, 1840), occur on trees in semi-desert landscapes, as well as on *Citrus* trees in plantations (Arefnia & Tshernyshev 2004). Taking into account the coastal location of UAE, several more species of *Intybia* are to be expected.

The tribe Colotini is the richest in species number occurring in desert and semi-desert landscapes. The two genera, *Colotes* Erichson, 1840 and *Colotrema* Wittmer, 1979, include six species recorded from, a.o., the Arabian Peninsula, namely: *Colotes* (*Gynedipnis*) *anthicinus* Baudi, 1871 (Cyprus, Jordan,

Saudi Arabia, Syria, Turkmenistan), *Colotrema asirensis* (Wittmer, 1979) (Saudi Arabia, Yemen), *C. testaceus testaceus* (Wittmer, 1979) (Saudi Arabia), *C. testaceus wajjensis* (Wittmer, 1980) (Saudi Arabia, Yemen), *C. impressa* (Wittmer, 1954) (Yemen) and *C. socotrana* Plonski, 2017 (Yemen).

Another species of *Colotes* Erichson, 1840, *C. kovari* Švihla, 1987, is newly recorded from the United Arab Emirates. Thanks to Isidor Plonski, this species was identified, and it is now possible to compare it with *Colotes* and *Colotrema* Wittmer, 1979 (Plonski 2017), and to discover the strong generic differences between this species and representatives of these genera. Previously, *Colotrema* was regarded as a subgenus of *Colotes*, but its typical compact small body and elytra with roundly impressed apices in the male allowed to establish an independent status for the genus. As was mentioned above, the taxonomic structure of the tribe Colotini needs to be revised mainly because of the taxonomic uncertainty in the nominal genus *Colotes* (Tshernyshev 2018). The type species of the genus, *Colotes trinotatus* Erichson, 1840, a junior synonym of *C. maculatus* (Laporte de Castelnau, 1836), was studied and re-described (Tshernyshev 2018), and it is possible to conclude that *C. kovari* in fact should be assigned to a separate genus, probably a monotypic local endemic. Thus, a new genus, *Tonycolotes* gen. nov. is described below.

The tribe Illopiini includes species distributed mainly in the tropics or South-Asian Mountains, the only representative from Saudi Arabia, *Condyllops arabicus* Wittmer, 1979, demonstrating the close relations with the tropic fauna, whereas a single member of the tribe Malachiini, *Clanoptilus (Hypoptilus) hajazensis* (Pic, 1929) contrariwise is atypical for Arabia and characterizes a connection with a temperate Palaearctic fauna.

Beetles of the tribe Troglopini are known to be residents of arid and warm landscapes occurring on bushes and trees of intrazonal biocoenoses. In the Arabian Peninsula, the tribe is represented by four genera and 8 species, namely: *Attalusinus holzschuhi* Wittmer, 1984 (Saudi Arabia), *Troglomorphus omanus* Wittmer, 1996 (Oman), *Troglops buettikeri* Wittmer, 1979 (Saudi Arabia), *T. sonyae* Wittmer, 1982 (Saudi Arabia), *T. maculatus* Wittmer, 1954 (Yemen), *T. muehlei* Wittmer, 1988 (N Yemen), *T. nasutus* Wittmer, 1988 (N Yemen) and *Cephaloncus yemenitus* Wittmer, 1988 (N Yemen). The genus *Attalusinus* Leng, 1918 is distributed in Africa, two species are known from California, USA, and the genus *Troglomorphus* Wittmer, 1996 is a monotypic Arabian endemic occurring in Oman. The other two genera, *Troglops* Erichson, 1840 and *Cephaloncus* Westwood, 1863 are widespread in arid landscapes of Africa, Europe and Asia.

Material loaned from the United Arab Emirates and collected by Antonius van Harten includes a number of specimens of two species, *Colotes kovari* Švihla, 1987 and a species similar to *Malachiomimus buettikeri* (Wittmer, 1980), but nevertheless representing a new species. Amongst these specimens, a tiny beetle ca 1 mm in length was found, with extremely long and slender antennae and typically swollen anteriorly and strongly sinuate at the base pronotum dissimilar to any species of the known genera. Obviously, this species belongs to Troglopini, and sculptures of the head confirm this. Thus, a new genus, *Arabotroglops* gen. nov., is proposed in the present paper for this new species. Descriptions of new taxa, namely: *Tonycolotes* gen. nov. with type species *Colotes kovari*, *Tonyattalus* gen. nov. with type species *Tonyattalus vanharteni* gen. et sp. nov., and *Arabotroglops* gen. nov. with type species *Arabotroglops longantennatus* gen. et sp. nov., are also presented below.

Material and methods

For descriptions, special male structures and genitalia were studied; ‘special male structures’ term refers here to the flabellate antennae, tarsal com in anterior legs and sculptured and weakly swollen metathorax in *Tonyattalus vanharteni* gen. et sp. nov., the 1st antennomere strongly enlarge and modified, compressed at base and depressed at distal part; anterior tibiae impressed and flattened underneath in apical half in *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov., and sculptured head, extremely long antennae and longitudinal pronotum, narrowed and depressed at base in *Arabotroglops longantennatus* gen. et sp. nov.

This term is not analogue to the term ‘Excitatoren’, that means different kinds of structures located in different parts of male body of soft winged flower beetles and bearing ducts of pheromone glands necessary for female attraction and successful copulation (Evers 1956, 1963, 1988; Matthes 1962). The ‘special male structures’ includes all typical parts of male irrespective of providing they with pheromone glands or not.

Illustrations have been prepared using specimens from the type locality: *Tonyattalus vanharteni* gen. et sp. nov., holotype, male and paratype, female – United Arab Emirates (UAE), Sharjah Desert Park; *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov., male – UAE, Wadi Madaq; *Arabotroglops longantennatus* gen. et sp. nov., holotype, male – UAE, Sharjah Desert Park.

The beetles were studied using an Amscope trinocular stereo microscope (Ultimate Trinocular Zoom Microscope 6.7X-90X Model ZM-2TY), and digital photographs were taken using a Carl Zeiss Stemi 2000 trinocular microscope and the AxioVision programme. Male genitalia, embedded in DMHF (dimethyl hydantoin formaldehyde), were mounted onto a transparent card and pinned under the specimen. Specimens have been deposited in the author’s collection (SCH), which is kept at the Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia.

Institutional abbreviations

NHML = Natural History Museum, London, UK
 SCH_ISEA = author’s collection, which is kept at the Institute of Animal Systematics and Ecology, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia

Results

Taxonomy

Class Insecta Linnaeus, 1758
 Order Coleoptera Linnaeus, 1758
 Suborder Polyphaga Emery, 1886
 Superfamily Cleroidea Latreille, 1802
 Family Malachiidae Fleming, 1821
 Subfamily Malachiinae Fleming, 1821
 Tribe Attalini Abeille de Perrin, 1890

Tonyattalus gen. nov.

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Type species

Tonyattalus vanharteni gen. et sp. nov., designated in the present paper.

Diagnosis

Moderately small-sized (ca 2.0–2.3 mm) malachiid beetles with the body subparallel and oval with abdomen not completely covered by elytra (Figs 1–10). Colouration from yellow with brown bases and apices of elytra, to black with yellow spots on pronotum and elytra; lacking metallic lustre. Antennae dentate in females and flabellate in males, not long, reaching the base of the elytra; in males 1st antennomere enlarged, sub-conic, 2nd antennomere oval, half as long as the 3rd antennomere, the 3rd antennomere triangular, not wider than the 4th, 4th antennomere wide triangular, with somewhat dilated outer edge, 5th with more strongly dilated outer edge, 6th–10th segments flabellate, cylindrical with long dilated outer edges, terminal antennomere distinctly the longest, curved at basal third, evenly rounded at apex (Fig. 3).

Head narrower than pronotum, slightly elongate, eyes small, weakly protruding over the contour of head; frons and inter-ocular area flat and slightly impressed, glabrous, lacking depression or protuberances; clypeus slightly elongate, transverse, straight; labrum short and transverse; maxillary palpi short, ultimate palpomere thin, cylindrical, slightly narrowed and flattened apically. Pronotum (Figs 2, 4, 10) transverse, with rounded lateral sides, not sinuate or depressed at base; scutellum small, rectangular, narrow, slightly transverse, with slightly subparallel apex.

Elytra subparallel, weakly expanded posteriorly and not covering last segments of abdomen in both sexes; humeri indistinct and small; surface densely punctured, covered with light dense adpressed short hairs. Anterior tarsi (Fig. 5) five-segmented, compressed, with a comb above the 2nd segment, 2nd–3rd tarsomeres equal in length, 1st is 1.2 × as long as 2nd, the terminal tarsomere slightly narrower and depressed, the longest, as long as 1st–4th tarsomeres in anterior legs, 1st–3rd in intermediate legs and 1st–2nd in posterior legs; claws thin, weakly curved and sharp, with dentate small lamellae at base; femora and tibiae simple, not swollen or strongly curved, lacking indentation. Metathorax weakly swollen, narrow, transverse, lacking appendages or tuft of hairs, but with specific straight and edged distal side, which is slightly lamellate. Pygidium (Fig. 6) undivided, evenly rounded and narrowed distally, with oval emargination in middle; 8th ultimate abdominal ventrite (Fig. 7) strongly narrowed, bilacinate, but both lobes narrowly adjoined, evenly rounded distally, with round-triangular emargination in middle and sharp lateral processes; aedeagus (Fig. 8) elongate and strongly curved dorsally, typical of Attalini, with a long sharpened bristle in the inner sac in middle of distal part, tegmen wide, transverse, with thin short appendages.

Etymology

The new genus '*Tonyattalus*', is composed of two words, '*Tony*' – nickname of Antonius van Harten, enthusiastic organiser and participant of the UAE Insect Project, and '*Attalus*' – name of the genus, nominative to the tribe Attalini.

Comparison

The species of the new genus should be compared with species of *Attalus* Erichson, 1840, *Malachiomimus* Champion, 1921, and *Nepachys* Thomson, 1859 from which they can be distinguished by a combination of the following characters: size small, ca 2 mm in length; the elytra abbreviated in both sexes and not covering abdomen completely; apices of elytra simple, lacking impressions; 2nd tarsomere in anterior legs of male with simple small transverse comb above; metathorax weakly swollen, with specific straight, edged and slightly lamellate outer side; aedeagus thin and strongly curved, ultimate ventrite with round emargination and thin sharp processes, the structures necessary to hold curved aedeagus during copulation, is typical of the tribe Attalini.

Notes

The genus *Tonyattalus* gen. nov. includes two species known only from the Arabian Peninsula. Besides the nominal species, the other closely related species is *T. buettikeri* (Wittmer, 1980), originally described as *Attalus* (*Nepachys*) *buettikeri* Wittmer, 1980 due to external characters of male, flabellate antennae and anterior tarsi possessing a comb above the 2nd tarsomere. Simple elytra lacking impressions and appendages in apices questions the generic attribution. Later, Evers (1989) transferred this species to the genus *Malachiomimus* Champion, 1921 based on the flabellate antennae of the male. This new combination is doubtful and confuses the systematics of the Apalochrini because of strong differences of a type species of the genus *Malachiomimus*, occurring in Himalaya Mountains when compared with the Arabian '*Attalus*'. The genus *Malachiomimus* is characterized by its considerably large size (ca 5-6 mm), wide, enlarged and transverse tarsal comb in anterior legs of male and simple pygidium; the body is elongated and subparallel, and the abdomen is completely covered by elytra, typical of Malachiinae-type species.

After the revision of Himalayan and SE Asian species of the genera *Sceloattalus* Wittmer, 1966 and *Dromanthomorphus* Pic, 1921 (Tshernyshev 2015a, 2015b, 2016), *Malachiomimus* is considered as a Himalayan endemic, so the presence of some species in the Arabian Peninsula looks very strange. The specific appearance with abbreviated elytra, of the so-called 'Carphurinae-type', is similar to species of *Carphuroides*, but the tarsal comb above the 2nd tarsomere allows this species to be attributed to the subfamily Malachiinae and compared only with representatives of the tribe Attalini. Formerly, there was no genus with characters compatible with the Arabian '*Attalus*'; therefore, a new genus, *Tonyattalus* gen. nov. is proposed and described above.

List of species in the genus *Tonyattalus* gen. nov.

1. *Tonyattalus buettikeri* (Wittmer, 1980) gen. et comb nov. (Saudi Arabia)
2. *Tonyattalus vanharteni* gen. et sp. nov. (UAE)

Tonyattalus vanharteni gen. et sp. nov.

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Figs 1–10

Differential diagnosis

The new species is comparable with *T. buettikeri* (Wittmer, 1980), and differs in its yellow-brown colouration, the 3rd antennomere simple, lacking small stretched outer edge, 4th antennomere triangular, not dilated as the small flattened process at outer edge, apical antennomere 1.5 × shorter.

Etymology

The new species, designated as the type species of the new genus '*Tonyattalus*', is named in honour of Antonius van Harten, enthusiastic organiser and participant of the UAE Insect Project, who collected series of soft-winged flower beetles in United Arab Emirates for the first time.

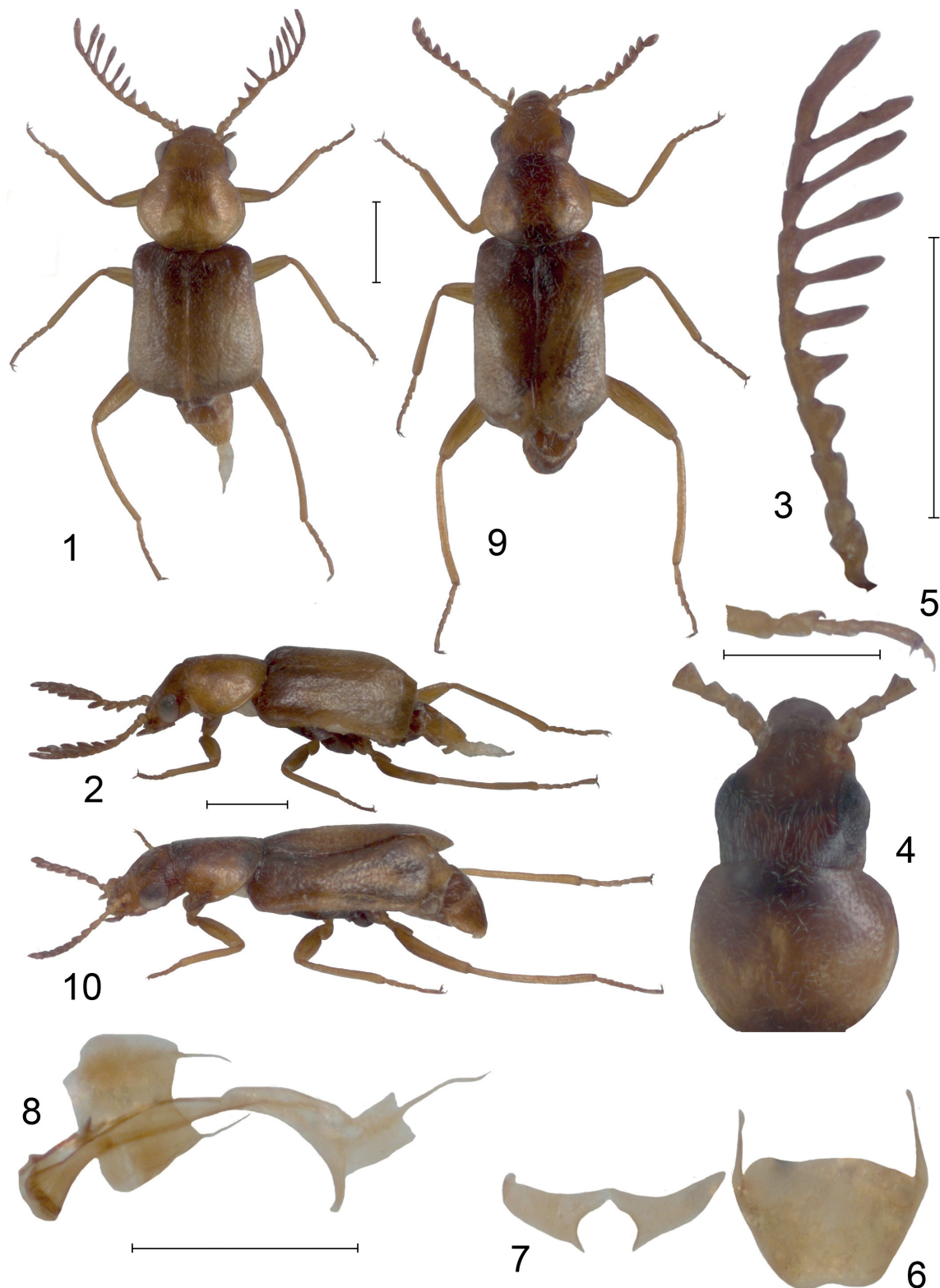
Material examined

Holotype

UNITED ARAB EMIRATES • ♂; Sharjah Desert Park; 25.17° N, 55.42° E; 17–24 Mar. 2007; A. van Harten leg. (9043 UAE); light trap; SCH_ISEA_000133.

Allotype

UNITED ARAB EMIRATES • ♀; same collection data as for holotype; SCH_ISEA_000134.



Figs 1–10. *Tonyattalus vanharteni* gen. et sp. nov., holotype (SCH_ISEA_000133), ♂ (1–8), ♀ (9–10). **1, 9.** External appearance, dorsal view. **2, 10.** External appearance, lateral view. **3.** Left antenna. **4.** Head and pronotum, dorsal view. **5.** Left anterior tarsus. **6.** Pygidium. **7.** Ultimate abdominal ventrite. **8.** Aedeagus, and tegmen, lateral view. Scale bars: 0.5 mm.

Paratypes

UNITED ARAB EMIRATES • 1 ♂; same collection data as for holotype; SCH_ISEA_000135 • 4 ♀♀, same collection data as for holotype; SCH_ISEA_000136–139 • 2 ♀♀; al-Ajban; 24.36° N, 55.01° E; 1 Apr.–2 May 2006; A. Van Harten leg. (5664 UAE); Malaise trap; SCH_ISEA_000140–141 • 3 ♂♂; Wadi Bih dam; 25.48° N, 56.04° E; 6–13 May 2007; A. Van Harten leg. (9463 UAE); light trap; SCH_ISEA_000142–144 • 2 ♀♀; same collection data as for preceding; SCH_ISEA_000145–146 • 3 ♂♂, 2 ♀♀; Sharjah Desert Park; 25.17° N, 55.42° E; 30 Apr.–25 May 2008; A. Van Harten leg. (9535 UAE); light trap; SCH_ISEA_000147–151 • 1 ♂, 2 ♀♀; Wadi Madaq; 25.18° N, 56.07° E; 24 Sep.–22 Oct. 2006; A. Van Harten leg. (8343 UAE); water traps; SCH_ISEA_000152–154 • 1 ♂, 1 ♀; same collection data as for preceding (9482 UAE); SCH_ISEA_000155–156 • 2 ♂♂, 2 ♀♀; same locality as for preceding; 18 Nov.–15 Dec. 2007; A. Van Harten leg.; (9488 UAE); pitfall traps; NHML_000157–160 • 1 ♀; Wadi Wurayah; 25.24° N, 56.17° E; Mar.–Apr. 2007; C. Tourenq leg. (7482 UAE); water traps; SCH_ISEA_000161 • 1 ♀; same locality as for preceding; 25 Feb. 2008; A. Polaszek leg. (8807 UAE); hand-collected; SCH_ISEA_000162 • 1 ♂; Wadi Siji; 25.09° N, 56.02° E; 24 Sep.–22 Oct. 2006; A. Van Harten leg. (8372 UAE); water traps; SCH_ISEA_000163.

Description

Holotype, male (Figs 1–2)

BODY. Parallel, slightly expanded posteriorly, with apical abdominal segments not covered by the elytra.

COLOURATION. Yellow, except for meso- and metathoracic ventrites and two basal abdominal ventrites underside, traces of transverse fascia on head and distal side of pronotum, triangular spot on base of elytra narrowly continuing up into apical part, and narrow margins on apices of elytra brown, vesicles and thoracic mesepimera yellow.

HEAD. Narrower as pronotum (Fig. 4), slightly elongate, eyes small, weakly protruding over contour of head; frons and inter-ocular area flat and slightly impressed, glabrous, lacking depression or protuberances; clypeus slightly elongate, transverse, straight; labrum short and transverse; palpi short, ultimate palpomere thin, cylindrical, slightly narrowed and flattened apically. Surface of head dull, sparsely and finely punctured, evenly covered with white adpressed fine pubescence.

ANTENNAE. Flabellate, not long, reaching base of elytra; 1st antennomere enlarged, sub-conic, 2nd antennomere oval, $\frac{1}{2} \times$ as long as 3rd antennomere, 3rd antennomere triangular, not wider than 4th, 4th antennomere wide triangular, with somewhat dilated outer edge, 5th with more strongly dilated outer edge, 6th–10th segments flabellate, cylindrical with long dilated outer edges, terminal antennomere distinctly longest, curved at basal third, evenly rounded at apex (Fig. 3), surface evenly covered with fine short, pale pubescence and erect long fine pale hairs on outer edges of dilated processes of antennomeres.

PRONOTUM (Figs 2, 4, 10). Transverse, with rounded lateral sides, not sinuate or depressed at base, with straight anterior and posterior sides; margination thin and distinct, surface with smoothed sparse punctures and covered with short white adpressed fine hairs.

SCUTELLUM. Small, rectangular, narrow, slightly transverse, with slightly subparallel apex; surface sparsely punctured and covered with fine adpressed light hairs.

ELYTRA. Subparallel, weakly expanded posteriorly and not covering last segments of abdomen in both sexes (Figs 1–2, 9–10); humeri indistinct, small, protruding; surface densely punctured, covered with light dense adpressed short hairs.

HIND WINGS. Normally developed.

LEGS. Thin and long; posterior femora reaching abdomen apex; anterior tarsi (Fig. 5) five-segmented, compressed, with comb above 2nd segment, 2nd–3rd tarsomeres equal in length, 1st 1.2 × as long as 2nd, terminal tarsomere slightly narrower and depressed, longest, as long as 1st–4th tarsomeres in anterior legs, 1st–3rd in intermediate legs and 1st–2nd in posterior legs; claws thin, weakly curved and sharp, with dentate small lamellae at base; femora and tibia simple, not swollen or strongly curved, lacking indentation; surface indistinctly and covered with short and sparse adpressed light pubescence.

VENTRAL BODY. Surface weakly punctured, very sparsely covered with fine, depressed light pubescence; metathorax weakly swollen, narrow, transverse, lacking appendages or tuft of hairs, but with specific straight and edged distal side, which is slightly lamellate. Pygidium (Fig. 6) undivided, evenly rounded and narrowed distally, with oval emargination in middle; 8th ultimate abdominal ventrite (Fig. 7) strongly narrowed, bilacinate, but both lobes narrowly adjoined, evenly rounded distally, with round-triangular emargination in middle and sharp lateral processes; aedeagus (Fig. 8) elongate and strongly curved dorsally, typical of Attalini, with long sharpened bristle in inner sac in middle of distal part, tegmen wide, transverse, with thin short appendages (Fig. 8).

MEASUREMENTS. Length 2.1 mm, width (at elytral base) 0.7 mm.

Female

Differs from male by somewhat shorter and dentate antennae; anterior tarsi lacking comb on 2nd tarsomere; body slightly larger.

Length 2.3–2.4 mm, width (at elytral base) 0.75 mm (Figs 9–10).

Distribution

United Arab Emirates.

Tribe Colotini Abeille de Perrin, 1890

Tonycolotes gen. nov.

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Type species

Colotes kovari Švihla, 1987, designated by monotypy in the present paper.

Diagnosis

Moderately small-sized (ca 1.5–1.7 mm) malachiid beetles with the body subparallel and oval (Figs 11–12). Colouration yellow with brown bases of scapus, two triangular spots on elytra below the middle and metathoracic segments. Antennae filiform (Fig. 15), long, extending over the middle of the elytra; in males 1st antennomere (Figs 16–18) enlarged, strongly compressed at base and depressed at apex, oval, 2nd antennomere oval, 1.3 × as long as the 3rd antennomere, the 3rd antennomere triangular, not wider than the 4th, 4th–10th segments oval-cylindrical, elongate, simple and equal in length, terminal antennomere oval, evenly rounded and narrowed at apex, 1.2 × as long as 10th antennomere.

Head with same width or slightly narrower as pronotum, slightly elongate and prognathous, eyes small, slightly protruding over the contour of head; frons flat; inter-ocular area flat and slightly impressed, glabrous, lacking depression or protuberances, genae short and straight, lacking excavations or depressions; clypeus narrow and short, transverse, straight; labrum short and transverse; palpi in male with stout and complicatedly sculptured terminal and slightly enlarged cupulate penultimate palpomeres, in female the terminal palpomere subquadrate, slightly flattened, small, the penultimate palpomere small

and subtriangular. Pronotum (Figs 11–13) transverse, narrow, with rounded lateral sides, not sinuate but depressed at base; scutellum small, triangular, with curved and adpressed apex.

Elytra subparallel, evenly expanded just behind the base and evenly rounded posteriorly, apices simple; humeri indistinct and small; surface densely punctured, covered with light dense adpressed short hairs. Anterior tarsi simple, four-segmented, slightly compressed, lacking comb above the 2nd segment, 3rd tarsomere is the smallest, 1st is the longest, twice as long as 2nd, 2nd and 3rd of similar shape, the terminal tarsomere strongly narrower; in anterior and posterior legs the 1st tarsomere is the longest and the penultimate is the shortest; claws thin, weakly curved and sharp, slightly widened at base; anterior tibiae impressed and flattened underneath in apical half, intermediate straight, posterior slightly curved; femora simple, not swollen or strongly curved, lacking indentation, flattened. Metathorax weakly swollen, transverse, lacking appendages or tuft of hairs, slightly bituberculate. Pygidium (Fig. 21) undivided, elongate, evenly narrowed and rounded, weakly emarginate in middle; ultimate ventrite (Fig. 22) bilacinate, elongate and wide, evenly narrowed posteriorly, with narrow oval emargination in middle and with curved short apices, aedeagus specific, with curved under right-angle base and straight central lobe, apical lamella depressed, flat, with two sharp processes from both sides; inner sac lacking strong bristles (Fig. 23); tegmen wide and elongate with strongly shortened thin appendages (Fig. 24).

Etymology

The new genus '*Tonycolotes*', is composed of two words, '*Tony*' – nickname of Antonius van Harten, enthusiastic organiser and participant of the UAE Insect Project, and '*Colotes*', the name of the genus, nominative to the tribe Colotini.

Comparison

Due to the fact that the type species of the new genus was previously attributed to the genus *Colotes*, it should be compared with *Colotes* and *Colotrema*, also occurring in the region, from which it can be distinguished by the following characters: the elytral apices simple, not impressed; the 1st antennomere strongly enlarge and modified, compressed at base and depressed at distal part; anterior tibiae impressed and flattened underneath in apical half, head flat, lacking depressions near genae; hind wings normally developed in both sexes; aedeagus with curved under right-angle base and straight central lobe, apical lamella depressed, flat, with two sharp processes from both sides.

Notes

Modified and enlarged palpi in male are typical of representatives of the tribe Colotini. In the Arabian Peninsula, the tribe includes two genera, *Colotes* and *Colotrema*. The taxonomic structure of the tribe needs to be revised mainly because of taxonomic uncertainty in the nominal genus *Colotes* (Tshernyshev 2018). Definition of the subgeneric taxa on the basis of the only character, the shape of female palpi, results in a confusing conception of the genus which was initially identified by male special characters. Recently, the type species of the genus, *Colotes trinotatus* Erichson, 1840 (a junior synonym of *Colotes maculatus* (Laporte de Castelnau, 1836)) has been re-described and illustrated in detail, and the generic characters were determined (Tshernyshev 2018); as a result, a new genus, *Himalacolotes* Tshernyshev, 2018, was described for a group of Himalayan endemic species on the basis of similarity of external morphology, coloration of body and shape of male genitalia. The proposed new genus, *Tonycolotes* gen. nov., differs from the nominal species in a series of strong characters, allowing one to consider it a good separate genus.

List of species in the genus *Tonycolotes* gen. nov.

1. *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov. (Iran, Oman, UAE)

Tonycolotes kovari (Švihla, 1987) gen. et. comb. nov.
Figs 11–24

Colotes kovari Švihla, 1987: 277–279, figs 1–2.

Diagnosis

See Diagnosis given above for the new genus.

Material examined

UNITED ARAB EMIRATES • 3 ♂♂; Wadi Bih dam; 25.48° N, 56.04° E; 6–13 May 2007; A. van Harten leg. (9463 UAE); light trap; SCH_ISEA • 1 ♂; Wadi Madaq; 25.18° N, 56.07° E; 24 Sep.–22 Oct. 2006; water traps; A. van Harten leg. (8343 UAE); water traps; SCH_ISEA • 2 ♂♂; same collection data as for preceding; 26 Oct.–9 Nov. 2006; SCH_ISEA • 1 ♂; same collection data as for preceding; 2–16 Feb. 2006; (8444 UAE); light trap; SCH_ISEA • 5 ♂♂, 1 ♀; Sharjah Desert Park; 25.17° N, 55.42° E; 5–12 May 2007; A. Van Harten leg. (7815 UAE); light trap; SCH_ISEA • 3 ♂♂; same collection data as for preceding; 1–6 Apr. 2008; (9422 UAE); SCH_ISEA • 2 ♂♂; same collection data as for preceding; 14 Feb.–1 Apr. 2008; (9500 UAE); SCH_ISEA • 4 ♂♂, 1 ♀; same collection data as for preceding; 25 May–16 Jun. 2008; (9542 UAE); SCH_ISEA • 5 ♂♂; same collection data as for preceding; 28 May–4 Jun. 2007; (8650 UAE); SCH_ISEA • 2 ♂♂; same collection data as for preceding; 15–22 Apr. 2007; (7651 UAE); SCH_ISEA • 6 ♂♂; same collection data as for preceding; 21–28 May 2007; (7671 UAE); SCH_ISEA • 4 ♂♂; same collection data as for preceding; 5–12 May 2007; (8399 UAE); SCH_ISEA • 1 ♂; same collection data as for preceding; 10–17 Mar. 2007; (9260 UAE); SCH_ISEA • 2 ♂♂; same collection data as for preceding; 12–21 May 2007; (9273 UAE); SCH_ISEA • 6 ♂♂; Hatta; 24.49° N, 56.07° E; 17–24 May 2006; A. van Harten leg. (8363 UAE); light trap; SCH_ISEA • 4 ♂♂; Sharjah – Khor Kalba, near tunnel; 24.59° N, 56.09° E; 31 May–7 Jun. 2006; A. van Harten leg.; (8405 UAE); light trap; SCH_ISEA • 5 ♂♂; same collection data as for preceding; 7–14 Jun. 2006; (7544 UAE); SCH_ISEA • 2 ♂♂; same collection data as for preceding; 31 May–17 Jun. 2006; (9029 UAE); NHML.

Description

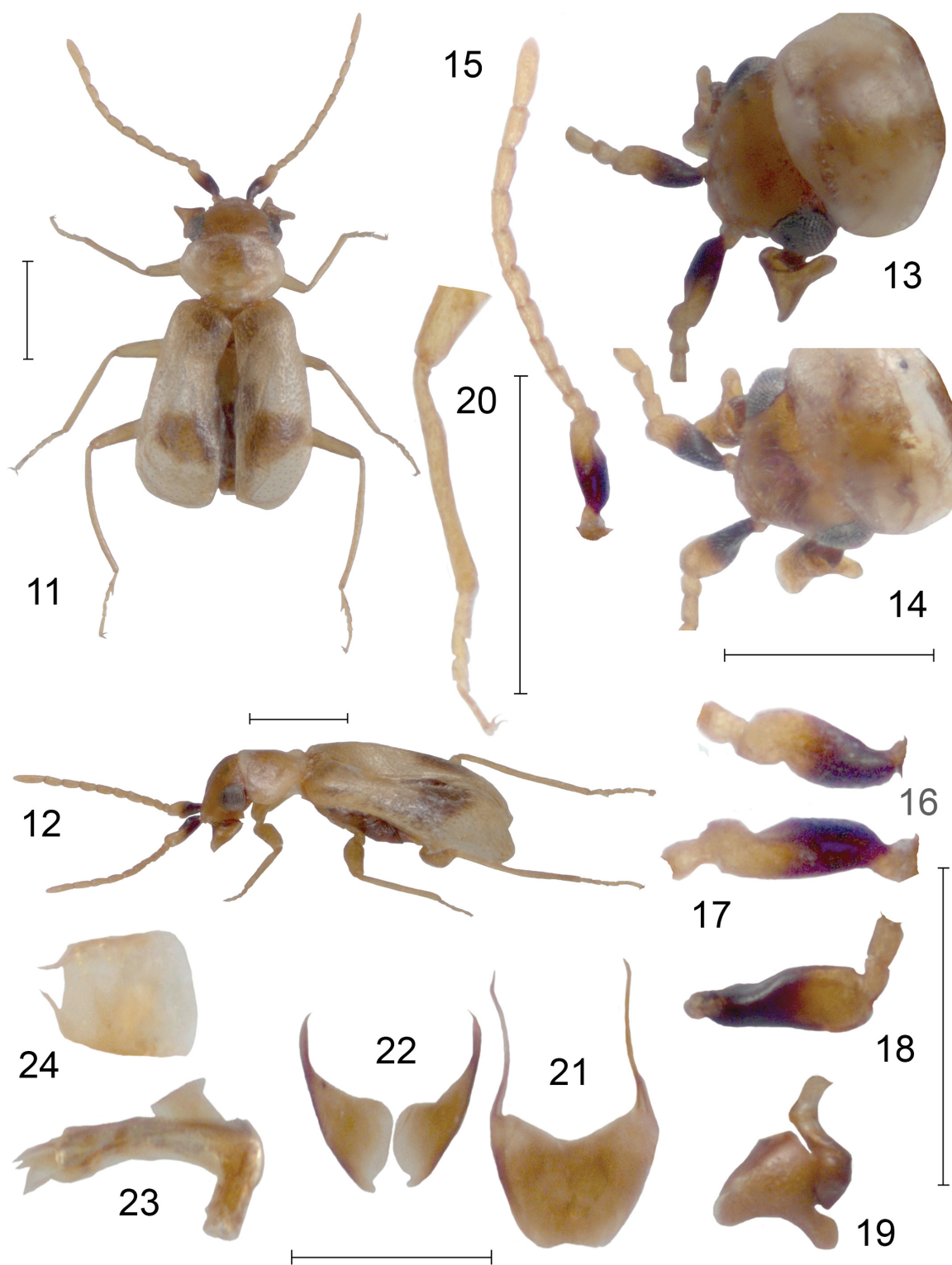
Male (Figs 11–12)

BODY. Subparallel, oval, slightly expanded posteriorly.

COLOURATION. Yellow, with brown bases of scapes, two triangular spots on elytra below the middle and metathoracic segments. Vesicles and thoracic mesepimera yellow.

HEAD. Of the same width or slightly narrower as pronotum (Figs 13–14), slightly elongate and prognathous, eyes small, slightly protruding over the contour of head; frons flat; inter-ocular area flat and slightly impressed, glabrous, lacking depression or protuberances, genae short and straight, lacking excavations or depressions; clypeus narrow and short, transverse, straight; labrum short and transverse; palpi in male (Figs 13–14, 19) with stout and complicatedly sculptured terminal palpomere, triangular-shaped, with flattened rectangular apical lobe and thin clavate process on outer side near base (Fig. 13), penultimate palpomere slightly enlarged and cup-shaped. Surface of head dull, with smoothed punctures, evenly covered with sparse white adpressed pubescence.

ANTENNAE. Filiform (Fig. 15), 1.55 mm in length, extending over middle of elytra; 1st antennomere (Figs 16–18) enlarged, strongly compressed at base and depressed at apex, oval, 2nd antennomere oval, 1.3 × as long as 3rd antennomere, 3rd antennomere triangular, not wider than 4th, 4th–10th segments oval-cylindrical, elongate, simple and equal in length, terminal antennomere oval, evenly rounded and



Figs 11–24. *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov., ♂ (SCH_ISEA). **11.** External appearance, dorsal view. **12.** External appearance, lateral view. **13.** Head and pronotum, subdorsal view. **14.** Head and pronotum, dorsal view. **15.** Right antenna. **16–18.** Scapus in different positions. **19.** Left palp. **20.** Left anterior leg. **21.** Pygidium. **22.** Ultimate abdominal ventrite. **23.** Aedeagus, lateral view. **24.** Tegmen. Scale bars: 0.5 mm.

narrowed at apex, $1.2 \times$ as long as 10th antennomere; surface evenly covered with fine short, pale erect pubescence.

PRONOTUM (Figs 11–13). Transverse, narrow, with rounded lateral sides, not sinuate but depressed at base, distinctly marginate; surface sparsely and finely punctured, with indistinct microsculpture, dull, locally covered with fine depressed pale pubescence. Scutellum small, triangular, with curved and adpressed apex; sparsely indistinctly punctured and covered with sparse pale adpressed pubescence.

ELYTRA. Subparallel, distinctly marginate with slightly thickened lateral edge, evenly expanded just behind the base and rounded posteriorly, apices simple, suture thin, distinct; humeri indistinct and small; surface densely punctured, covered with light sparse adpressed short hairs.

HIND WINGS. Normally developed.

LEGS. Thin and long; posterior femora reaching elytral apices; anterior tarsi simple, four-segmented, slightly compressed, lacking comb above the 2nd segment, 3rd tarsomere smallest, 1st longest, $2 \times$ as long as 2nd; 2nd and 3rd of same shape, terminal tarsomere strongly narrower; in anterior and posterior legs 1st tarsomere is longest and penultimate is shortest; claws thin, weakly curved and sharp, slightly widened at base; anterior tibiae impressed and flattened underneath in apical half, intermediate straight, posterior slightly curved; femora simple, not swollen or strongly curved, lacking indentation, flattened; surface covered with short and sparse adpressed pubescence.

VENTRAL BODY. Surface weakly punctured, dull, sparsely covered with fine, depressed light pubescence, distinctly visible on metathorax which is weakly swollen, transverse, lacking appendages or tuft of hairs, slightly bituberculate. Pygidium (Fig. 21) undivided, elongate, evenly narrowed and rounded, weakly emarginate in middle; ultimate ventrite (Fig. 22) bilacinate, elongate and wide, evenly narrowed posteriorly, with oval not deep emargination in middle and with curved short apices, aedeagus specific, with curved under right-angle base and straight central lobe, apical lamella depressed, flat, with two sharp processes from both sides; inner sac lacking strong bristles (Fig. 23); tegmen wide and elongate with strongly shortened thin appendages (Fig. 24).

MEASUREMENTS. Length 1.7 mm, width (at elytral base) 0.5 mm.

Female

Differs from male by somewhat shorter and more slender antennae; 5-segmented anterior tarsi lacking a comb on 2nd tarsomere; 1st antennomere pale-yellow, not compressed, with a weak depression near apex; the terminal palpomere subquadrate, flattened, the penultimate palpomere small and subtriangular; hind wings normally developed; length 1.7 mm, width (at elytral base) 0.6 mm.

Distribution

Iran (Minab), Oman (Bid Bid, Sama il Qaylah), United Arab Emirates (Mayor 2007).

Tribe Troglopini Mulsant & Rey, 1867

Arabotroglops gen. nov.

[urn:lsid:zoobank.org:act:3B5C9DBD-BED3-48EA-B173-82456696552D](https://zoobank.org/urn:lsid:zoobank.org:act:3B5C9DBD-BED3-48EA-B173-82456696552D)

Type species

Arabotroglops longantennatus gen. et sp. nov., designated by monotypy in the present paper.

Diagnosis

Size small, 1.3 mm, with the body elongate, parallel-sided and twice narrowed, at the base of pronotum and at the middle of elytra (Fig. 25), slightly expanded posteriorly. Body brown, antennae, legs, commissure of abdominal ventrites, underside of head yellow, spots on elytra pale-yellow. Antennae filiform, long, extending over apices of elytra, 1st segment sub-conic, 2nd oval, 3rd triangular, 4th cylindrical, 5th–10th elongate, narrow with stretched outer edge at the apical fourth, apical antennomere the longest, oval, 1.2 × as long as 10th, 6th–10th antennomeres of the same length, 5th 1.2 × as long as 4th, 4th 1.1 × as long as 3rd, and 1st, 2nd and 3rd are almost of equal length. Head small, flat, wider than pronotum, interocular area slightly impressed in the middle with U-shaped carina between antennae; eyes simple, not large, slightly protruding. Pronotum longitudinal, trapezoid, strongly sinuate at base, with evenly rounded angles, straight anteriorly and posteriorly, and with thin margination of sides; disc convex anteriorly and strongly depressed at the base, with posterior margin, elevate and narrow. Elytra subparallel, compressed near the middle, slightly expanded posteriorly, sparsely and finely punctured, with small, distinct and weakly protruding shoulders; apices evenly rounded, simple. Anterior tarsi 5-segmented, lacking comb above the 2nd segment, but the 3rd segment depressed at base, all femora and tibiae thin and straight, simple. Metathorax slightly swollen and weakly bituberculate, with longitudinal median groove, lacking appendage or tuft of hairs.

Pygidium undivided, wide and transverse, evenly rounded and weakly narrowed distally, lacking emargination in distal side; 8th ultimate abdominal ventrite undivided, wide and strongly narrow, weakly rounded distally, with triangular emargination in middle; aedeagus slightly curved dorsally, widened in the middle, with elongate flat and straight lamella; two parallel groups of three black-brown curved and strong bristles are visible in the inner sac at both sides of the aedeagus. Tegmen elongate, with short parameres and protruding lobe between them.

Etymology

The new genus '*Arabotroglops*', is composed of two words, '*Arabo*' – from the name of '*terra typica*' Arabian Peninsula, and '*Troglops*' – name of the genus, nominative to the tribe Troglopini.

Comparison

A species of the genus comparable only with the *Troglomorphus omanus* Wittmer, 1996, but differing in its small size, extremely long antennae, longitudinal pronotum, narrowed and depressed at base.

Notes

This tiny species possesses extremely long antennae, longer than the whole body length, thin and of 'Cantharidae-type'. Massive head with carinate clypeus transversely impressed above, strongly sinuate to the base pronotum and typical genitalia with double-side armed aedeagus and narrow transverse sternite allow this species to be attributed to the tribe Troglopini. Small size (ca 1.3 mm in length), characteristic shape of the body depressed at base of the pronotum and below scutellum as in *Myrmecospectra* Motschulsky, 1858 (see Tshernyshev & Kopetz 2018) differentiate this genus from all other members of the tribe.

The key below differentiates *Arabotroglops* gen. nov. from the other genera of the tribe Troglopini that occur in the Arabian Peninsula.

Distribution

The monotypic genus includes a species known from one locality in the United Arab Emirates, which is presumably endemic to the area.

List of species of the genus *Arabotroglops* gen. nov.

1. *Arabotroglops longantennatus* gen. et sp. nov. (UAE).

Arabotroglops longantennatus gen. et sp. nov.

[urn:lsid:zoobank.org:act:C82EB1BB-BAA2-456A-A4AA-8DE7F5CD63E9](https://zoobank.org/urn:lsid:zoobank.org:act:C82EB1BB-BAA2-456A-A4AA-8DE7F5CD63E9)

Figs 25–34

Material examined

Holotype

UNITED ARAB EMIRATES • ♂; Sharjah Desert Park; 25.17° N, 55.42° E; 17–24 Mar. 2007; A. van Harten leg. (9043 UAE); light trap; SCH_ISEA_000164.

Etymology

The specific epithet reflects its typical character, the elongate antennae.

Description

Holotype, male (Figs 25–26)

BODY. Subparallel, twice compressed at the base of pronotum, and below the base at near the middle of elytra, slightly expanded posteriorly.

COLOURATION. Body brown, antennae, legs, commissure of abdominal ventrites, underside of head yellow, spots on elytra pale-yellow. Vesicles pale, thoracic mesepimera light-brown.

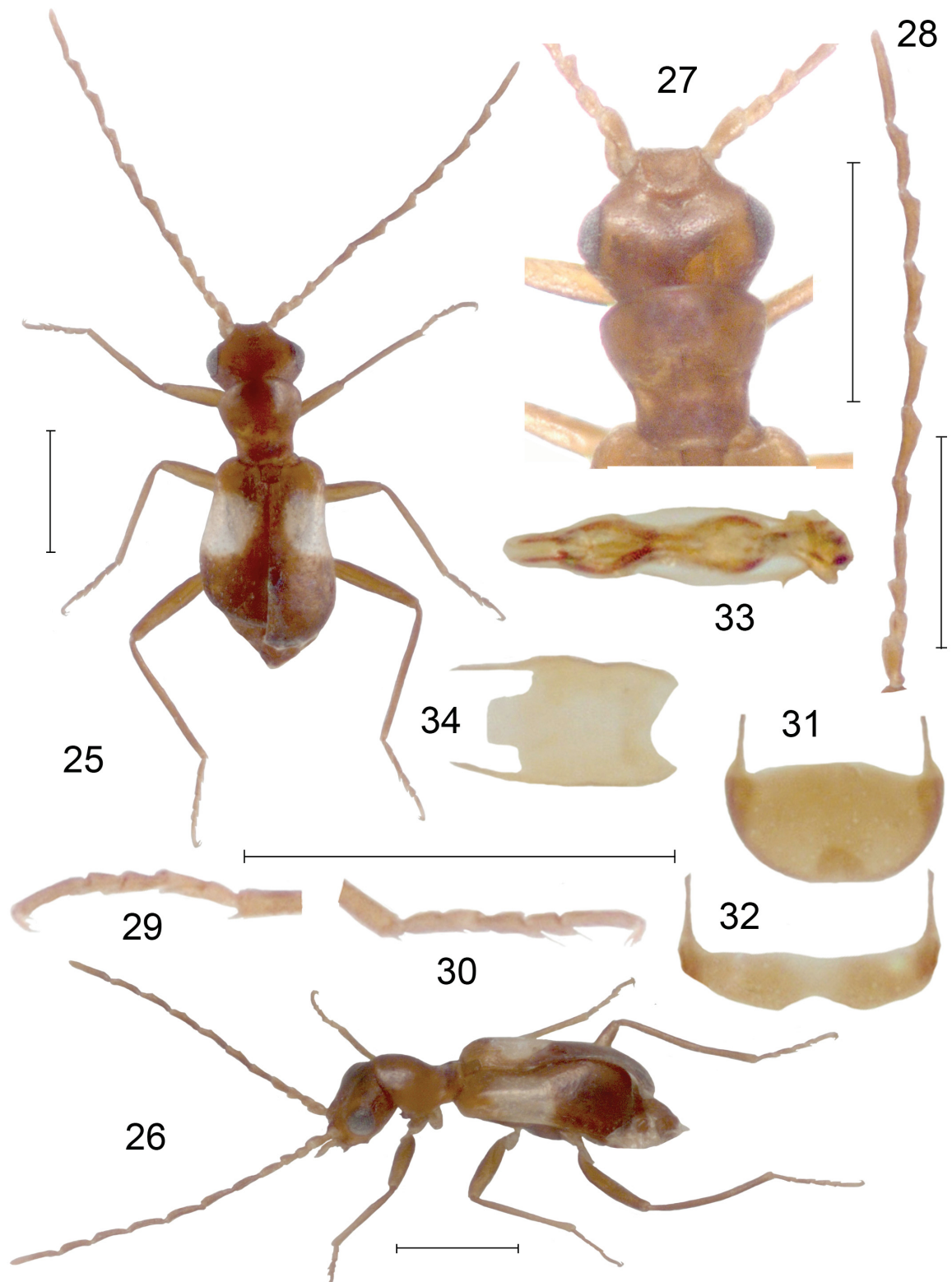
HEAD (Fig. 27). Small, wider than pronotum, interocular area slightly impressed in the middle with U-shaped carina between antennae; eyes simple, not large, slightly protruding; frons flat; genae short and straight; clypeus narrow and short, transverse, straight, impressed in middle; labrum short and transverse; palpi thin, conic, simple. Surface of head shiny, with smoothed punctures, sparsely covered with light adpressed pubescence.

ANTENNAE. Filiform (Fig. 28), 1.5 mm in length, extending over apices of elytra, 1st segment sub-conic, 2nd oval, 3rd triangular, 4th cylindrical, 5th–10th elongate, narrow with stretched outer edge at the apical fourth, apical antennomere longest, oval, 1.2 × as long as 10th, 6th–10th antennomeres of same length, 5th 1.2 × as long as 4th, 4th 1.1 × as long as 3rd, 1st, and 2nd and 3rd almost of equal length; surface covered with fine short, pale erect pubescence, clearly visible on outer edges of antennomeres.

PRONOTUM (Figs 26–27). Longitudinal, trapezoid, strongly sinuate at base, with evenly rounded angles, straight anteriorly and posteriorly; sides narrowly marginate; disc swollen anteriorly and strongly depressed at base, with posterior margin, elevate and narrow; surface with smoothed punctures, shiny, sparsely covered with short fine depressed pale pubescence. Scutellum distinct, subquadrate, with sharp angles at apex; sparse indistinct punctures and covered with sparse pale adpressed pubescence.

ELYTRA. Subparallel, with margination visible on lateral sides and on suture, compressed near middle, slightly expanded posteriorly (Fig. 25), sparsely and finely punctured, with small, distinct and weakly protruding shoulders; apices evenly rounded, simple; surface evenly finely punctured, covered with short white adpressed hairs.

HIND WINGS. Normally developed.



Figs 25–34. *Arabotroglops longantennatus* gen. et sp. nov., holotype (SCH_ISEA_000164), ♂. 25. External appearance, dorsal view. 26. External appearance, lateral view. 27. Head and pronotum, dorsal view. 28. Right antenna. 29. Right anterior tarsus. 30. Left anterior tarsus. 31. Pygidium. 32. Ultimate abdominal ventrite. 33. Aedeagus, dorsal view. 34. Tegmen. Scale bars: 0.5 mm.

LEGS. Thin and long; posterior femora extend over elytral apices; anterior tarsi 5-segmented (Figs 29–30), lacking comb above 2nd segment, but 3rd segment depressed at base, 1st–4th tarsomeres equal in length individually, 5th segment longest, narrow, twice as long as previous tarsomere, claws thin, slightly curved, sharp, slightly widened at base; all femora and tibiae thin and straight, simple, flattened; surface covered with short light semi-erect fine pubescence.

VENTRAL BODY. Surface with invisible punctures, dull, sparsely covered with fine, depressed light pubescence; metathorax weakly swollen, transverse, lacking appendages or tuft of hairs, slightly bituberculate, with longitudinal stria in middle. Pygidium (Fig. 31) undivided, wide and transverse, evenly rounded and weakly narrowed distally, lacking emargination in distal side; 8th ultimate abdominal ventrite (Fig. 32) undivided, wide and strongly narrow, weakly rounded distally, with triangular emargination in middle; aedeagus (Fig. 33) slightly curved dorsally, widened in middle, with elongate flat and straight lamella; two parallel groups of three black-brown curved and strong bristles visible in inner sac at both sides of aedeagus; tegmen (Fig. 34) elongate, with short parameres and protruding lobe between them.

MEASUREMENTS. Length 1.3 mm, width (at elytral base) 0.4 mm.

Female

Unknown.

Distribution

Known only from the type locality, United Arab Emirates.

Key to the genera of the tribe Troglopini Mulsant & Rey, 1867 occurring in the Arabian Peninsula

1. Anterior tarsi in male 4-segmented, male head depressed or strongly emarginate; length 2.0–2.6 mm *Troglops* Erichson, 1840
– Anterior tarsi in male 5-segmented 2
2. Male head deeply emarginate at the middle and sculptured; length 2.0–2.5 mm *Cephaloncus* Westwood, 1863
– Male head slightly depressed or carinate below eyes 3
3. Anterior tarsi in male with a comb above the 2nd segment, antennae reaching elytral apices, pronotum not narrowed or depressed at base; length 1.6–1.9 mm *Attalusinus* Leng, 1918
– Anterior tarsi in male simple, lacking a comb above the 2nd segment 4
4. Antennae not extending over the middle of the elytra, pronotum transverse, not narrowed or depressed at base; length 2.3–2.5 mm *Troglomorphus* Wittmer, 1996
– Antennae extending over the elytra, pronotum longitudinal, narrowed and strongly depressed at base; length 1.3 mm *Arabotroglops* gen. nov.

Discussion

Thirty-seven species of 20 genera from two subfamilies, Carphurinae and Malachiinae, are currently listed from the Arabian Peninsula, including four species of the four genera of the subfamily Malachiinae already known from United Arab Emirates. In the region, the subfamily Carphurinae is represented by one species, *Carphuroides talhouki* Wittmer, 1984 from Saudi Arabia, which is absent in UAE.

In the subfamily Malachiinae, seven tribes, Attalini, Ebaeini, Apalochrini, Colotini, Illopini, Malachiini and Troglopini, are represented in the Arabian Peninsula, of which only three, Attalini, Colotini and Troglopini, are recorded for UAE.

Five species and three genera, *Tonyattalus buettikeri*, *T. vanharteni* gen. et sp. nov., *Brachyattalus arabicus* (Wittmer, 1980), *Attalus testaceimembris* and *A. yemenitus*, are represented in the Arabian Peninsula in the tribe Attalini, and are newly described for UAE. The tribe Ebaeini is represented in the Arabian Peninsula by two genera, *Mixis* and *Pachyebaeus*, and six species: *M. brittoni* (Wittmer, 1954), *M. curvispinus* (Wittmer, 1954), *M. perforatus* (Wittmer, 1954), *M. pilosoplicatus* Wittmer, 1954, *M. scotti* (Wittmer, 1954) and *P. cameroni* (Pic, 1903), yet no species has been recorded from UAE. Two genera, *Intybia* and *Hadrocnemus* and three species of Apalochrini – *Intybia aurantiaca arabica*, *I. venusta* (Erichson, 1840) and *Hadrocnemus millingeni* – are known from the Arabian Peninsula, but not from the UAE. The tribe Colotini includes three genera, *Colotes*, *Colotrema* and *Tonycolotes* gen. nov., with seven (sub)species recorded from the Arabian Peninsula, namely: *Colotes (Gynedipnis) anthicinus* Baudi, 1871, *Colotrema asirensis* (Wittmer, 1979), *C. testaceus testaceus* (Wittmer, 1979), *C. testaceus wajjensis* (Wittmer, 1980), *C. impressa* (Wittmer, 1954), *C. socotrana* Plonski, 2017 and *Tonycolotes kovari* (Švihla, 1987) gen. et. comb. nov., of which only the latter species is recorded for UAE. Two tribes, Illopini and Malachiini, are each represented by a single genus and species in the Arabian Peninsula, namely *Condylops arabicus* Wittmer, 1979 and *Clanoptilus (Hypoptilus) hajazensis* (Pic, 1929), respectively. Beetles of the tribe Troglopini are represented in the Arabian Peninsula by five genera, *Arabotroglops* gen. nov., *Attalusinus* Leng, 1918, *Cephaloncus* Westwood, 1863, *Troglomorphus* Wittmer, 1996 and *Troglops* Erichson, 1840, and 9 species, namely: *Arabotroglops longantennatus* gen. et sp. nov., *Attalusinus holzschuhi* Wittmer, 1984, *Cephaloncus yemenitus*, *Troglomorphus omanus* Wittmer, 1996, *Troglops buettikeri*, *T. sonyae* Wittmer, 1982, *T. maculatus* Wittmer, 1954, *T. muehlei* Wittmer, 1988 and *T. nasutus* Wittmer, 1988; only *Arabotroglops longantennatus* gen. et sp. nov. represents the tribe Troglopini in UAE.

The significant number of new records of species of Malachiidae from the United Arab Emirates above demonstrate a species richness hitherto unrecognised from previous work in the Arabian Peninsula, and indicates that our knowledge will be considerably extended by further studies.

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References

- Arefnia A. & Tshernyshev S.E. 2004. First record of *Laius venustus* Erichson, 1840 (Coleoptera, Malachiidae) in Iran. *Euroasian Entomological Journal* 3 (1): 32.
- Champion G.C. 1920. Notes on various African and Asiatic species of *Hapalochrus*, Er., with an account of their accessory ♂-characters [Coleoptera]. *Annals and Magazine of Natural History* (Ser. 9) (6): 177–201. <https://doi.org/10.1080/00222932008632431>

- Champion G.C. 1920. Notes on various African and Asiatic species of *Hapalochrus*, Er., with an account of their accessory ♂-characters [Coleoptera]. *Annals and Magazine of Natural History* (Ser. 9) (6): 249–266. <https://doi.org/10.1080/00222932008632442>
- Champion G.C. 1920. Notes on various African and Asiatic species of *Hapalochrus*, Er., with an account of their accessory ♂-characters [Coleoptera]. *Annals and Magazine of Natural History* (Ser. 9) (6): 305–327. <https://doi.org/10.1080/00222932008632448>
- Evers A.M.J. 1956. Über die Funktion der Excitatoren beim Liebesspiel der Malachiidae. (11. Beitrag zur Kenntnis der Malachiidae). *Entomologische Blätter für Biologie und Systematik der Käfer* 52: 165–169.
- Evers A.M.J. 1963. Über die Entstehung der Excitatoren und deren Bedeutung für die Evolution der Malachiidae (Col.). (19. Beitrag zur Kenntnis der Malachiidae). *Acta Zoologica Fennica* 103: 1–24.
- Evers A.M.J. 1988. Zur Evolution von Koadaptationen. Die Excitatoren bei den Malachiidae. *Entomologische Blätter* 84: 61–66.
- Evers A.M.J. 1989. Phylogenese der Malachiidae (Col.) der Welt Kladistik und Biogeographie aus der Sicht der Pangaea-Theorie. *Entomologische Blätter für Biologie und Systematik der Käfer* 85: 1–57.
- Matthes D. 1962. Excitatoren und Paarungsverhalten Mitteleuropäischer Malachiiden (Coleopt., Malacodermata). *Zeitschrift für Morphologie und Ökologie der Tiere* 54: 375–546.
- Mayor A.J. 2003. Nomenclatorial corrections for Dasytidae and Malachiidae (Coleoptera). *Insecta Mundi* 17 (1–2): 85–96.
- Mayor A.J. 2007. Family Malachiidae Fleming, 1821. In: Löbl I. & Smetana A. (eds) *Catalogue of Palaearctic Coleoptera, Volume 4. Elateroidea, Derodontoidea, Bostrichoidea, Lymexyloidea, Cleroidea, Cucujoidea*: 415–454. Apollo Books, Stenstrup.
- Plonski I.S. 2013. Studies on the genus *Intybia* Pascoe (Coleoptera: Malachiidae) I. Some nomenclatural acts and faunistic records. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 65: 61–68.
- Plonski I.S. 2014a. Studies on the genus *Intybia* Pascoe, part II. Faunistic and taxonomic notes, with description of a new species of the *I. plagiata*-group (Coleoptera: Malachiidae). *Koleopterologische Rundschau* 84: 313–320.
- Plonski I.S. 2014b. Studies on the genus *Intybia* Pascoe (Coleoptera: Malachiidae) IV. Notes on the fauna of the Philippines. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 66: 39–45.
- Plonski I.S. 2016. Studies on the genus *Intybia* Pascoe, 1866 (Coleoptera: Malachiidae) V. Contribution to internal classification and taxonomy, with faunistic and nomenclatorial notes. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 68: 17–38.
- Plonski I.S. 2017. *Colotrema socotrana* sp. nov. from Socotra Island, with new records of the genus from Yemen (Coleoptera: Malachiidae). *Acta Entomologica Musei Nationalis Pragae* 57(suppl.): 125–131. <https://doi.org/10.1515/aemnp-2017-0113>
- Plonski I.S. & Geiser M. 2014. Studies on the genus *Intybia* Pascoe (Coleoptera: Malachiidae) III. On *Intybia rubrithorax* (Pic) and related taxa. *Zeitschrift der Arbeitsgemeinschaft Österreichischer Entomologen* 66: 31–38.
- Tshernyshev S.E. 2015a. A review of species of the genus *Apalochrus* Erichson (Coleoptera, Malachiidae). *Zootaxa* 3941 (3): 358–374. <https://doi.org/10.11646/zootaxa.3941.3.3>

- Tshernyshev S.E. 2015b. Soft-winged flower beetles (Coleoptera, Malachiidae) of the Himalaya region, with notes on Apalochrini. In: Hartmann M. & Weipert J. (eds) *Biodiversität und Naturlausstattung im Himalaya, Volume 5*: 389–405. Verein der Freunde & Förderer des Naturkundemuseums Erfurt e.V.
- Tshernyshev S.E. 2016a. The genus *Dromanthomorphus* Pic, 1921 (Coleoptera, Cleroidea: Malachiidae) in South-East Asia. *Zootaxa* 4139 (4): 551–565. <https://doi.org/10.11646/zootaxa.4139.4.7>
- Tshernyshev S.E. 2016b. Taxonomic revision of *Intybia* species (Coleoptera, Malachiidae) of Thailand and Philippines. *Zootaxa* 4147 (2): 101–123. <https://doi.org/10.11646/zootaxa.4147.2.1>
- Tshernyshev S.E. 2018. *Himalacolotes*, a new genus of soft-winged flower beetles of the tribe Colotini (Coleoptera, Malachiidae) from the Himalayan Region. In: Hartmann M., Barclay M. & Weipert J. (eds) *Biodiversität und Naturlausstattung im Himalaya, Volume 6*: 455–489. Verein der Freunde & Förderer des Naturkundemuseums Erfurt e.V.
- Tshernyshev S. & Kopetz A. 2018. *Myrmecospectra* Motschulsky, 1858 – the real name for *Myrmecophasma* Bourgeois, 1885 (Coleoptera, Cleroidea, Malachiidae), with review of species and description of a new species from the Himalayas. In: Hartmann M., Barclay M. & Weipert J. (eds) *Biodiversität und Naturlausstattung im Himalaya, Volume 6*: 443–453. Verein der Freunde & Förderer des Naturkundemuseums Erfurt e.V.
- Wittmer W. 1980. Fauna of Saudi Arabia. Coleoptera: Fam. Drilidae, Malachiidae, Prionoceridae (2. Beitrag). *Fauna of Saudi Arabia* 2: 114–118.

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