A contribution to knowledge of *Attagenus* Latreille, 1802 from the Socotra Island (Coleoptera: Dermestidae: Attageninae)

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Abstract. Three new species, *Attagenus socotranus* sp. nov., *Attagenus dixam* sp. nov. and *Attagenus variabilis* sp. nov., all from Yemen, the Socotra Island, are described, illustrated and compared with similar species. The new species differ by the structure of antennae, male genitalia and elytral colours.

INTRODUCTION

The genus *Attagenus* Latreille, 1802 is divided into two subgenera and recently contains 237 species worldwide (Háva 2015, 2020). Eleven species from continental Yemen and one species from Socotra Island have still been known.

In the material deposited in National Museum (Prague) from expeditions of Czech entomologists to Yemen and the Socotra Island, I found three new species from the Socotra Island, which are described here. Some proportions of the material from the Socotra Island were dealt with formerly by Háva (2013, 2014 and 2017). A Catalogue of known Coleoptera from the Socotra Island was published recently by Hájek & Bezděk (2019).

MATERIAL AND METHODS

The size of the beetles or of their body parts can be useful in species recognition and thus, the following measurements were made:
total length (TL) - linear distance from anterior margin of pronotum to apex of elytra.
elytral width (EW) - maximum linear transverse distance.

Acronyms of type depositories:
JHAC Jiří Háva, Private Entomological Laboratory & Collection, Únětice u Prahy, Prague-West, Czech Republic;
NMPC National Museum, Praha, Czech Republic.

Specimens of the species described here are provided with red, printed labels with texts as follows: „HOLOTYPE [or PARATYPE, respectively] *species name* sp. nov. Jiří Háva det. 2020".

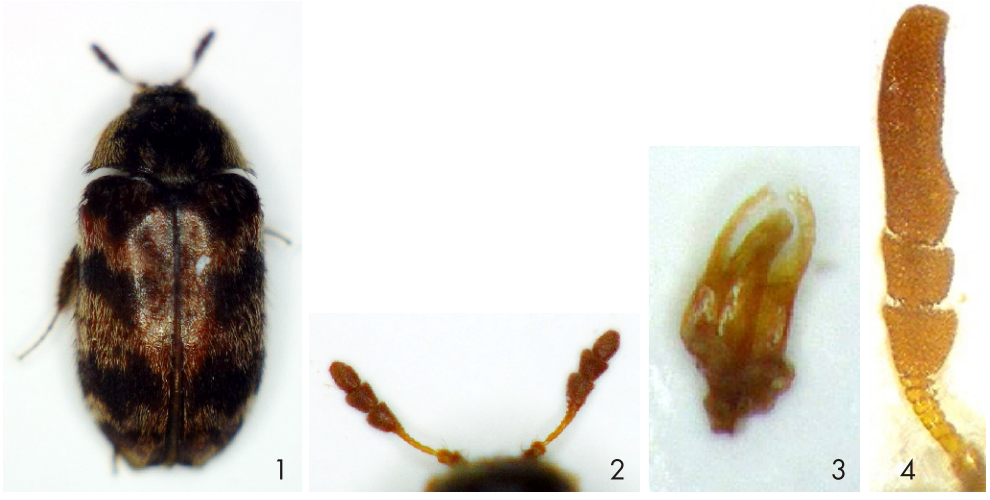
RESULTS

Subfamily Attageninae Laporte de Castelnau, 1840
Tribe Attagenini Laporte de Castelnau, 1840
Genus *Attagenus* Latreille, 1802

Attagenus dixam sp. nov.

(Figs. 1-3)

Type material. Holotype (♂): Yemen, Socotra Isl., Dixam plateau, 850-920 m, 15°31.24´N, 53°58.29´E, 5.ii.2010, L. Purchart & J. Vybíral lgt., (NMPC). Paratypes (1 ♂, 4 ♀♀): the same data as holotype (4 NMPC, 1 JHAC).



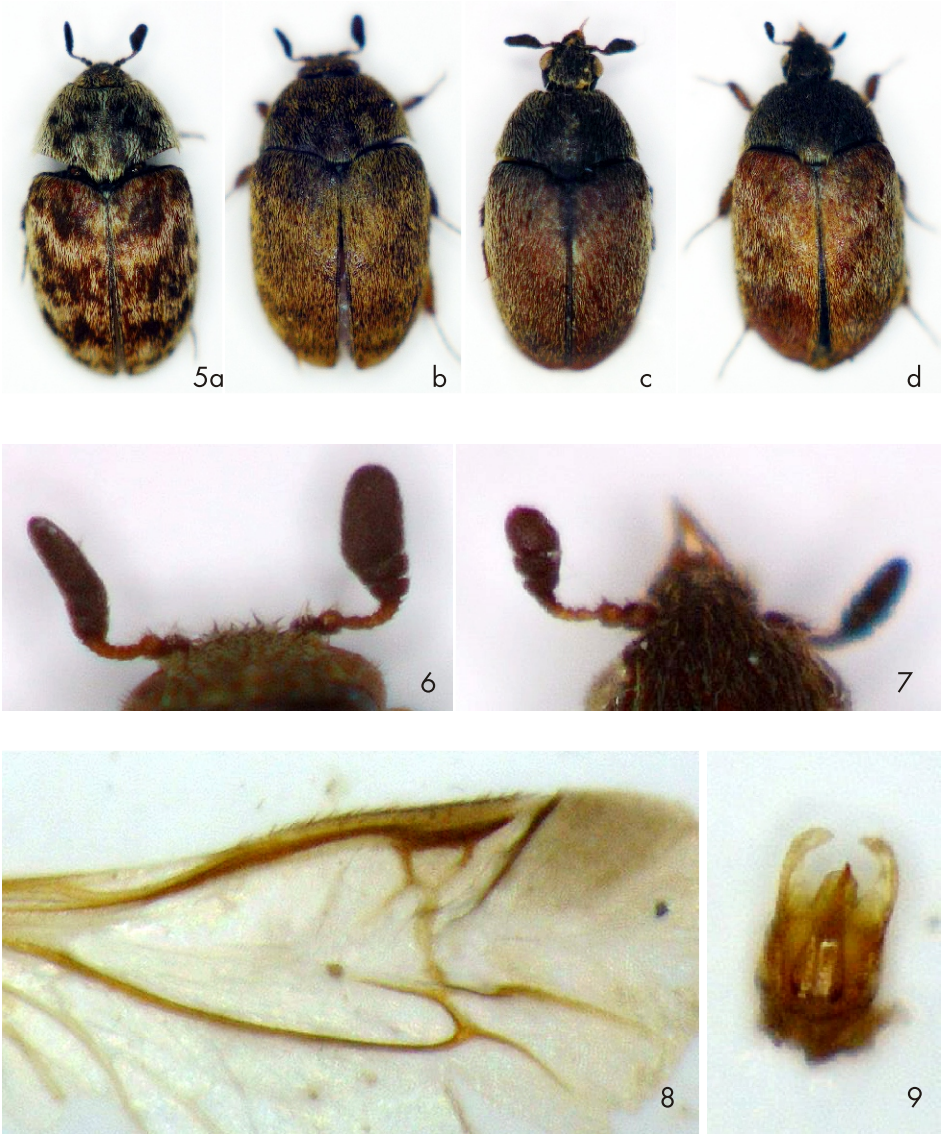
Figs. 1-4. *Attagenus dixam* sp. nov.: 1- habitus, dorsal aspect; 2- antenna of male; 3- male genitalia; *Attagenus papei* Háva, 2009: 4- antenna of male.

Description. Male. Body measurements (in mm): TL 3.5 mm, EW 1.8 mm; elongate and oval (Fig. 1), slightly convex; dorsally and ventrally brown, slightly shining; dorsum covered with short and erect, brown and grey setation; thoracic underside with comparatively long and recumbent, grey setation; visible abdominal ventrites with recumbent, grey setation, sparser than that on thoracic surface. Head finely punctured, with grey setation. Palpi brown. Frontal median ocellus present. Antennae brown, with short, light brown setation, consisting of 11 antennomeres, antennal club with 3 antennomeres (Fig. 2). Pronotum finely punctate on the disc, coarsely punctate on lateral margins, covered by grey and brown setation; grey setation present laterally and forming two spots medially and one spot nearscutellum. Hypomeron matt with very small punctures. Scutellum small and triangular, matt, with rounded apex, with greysetation. Elytra coarsely punctate on humeri and with one small humeral bump, other parts finely punctate, brown with three light brown transverse fasciae and scutellar and apical spots allconnected on suture, covered by brown setation and fasciae or spots covered by grey setation (Fig. 1). Epipleuron brown, long and broad, with short grey setae. Prosternum without "collar", mouthparts free. Prosternal process short and narrow, with grey setation. Meta- and mesosternum finely punctate discally, lateraly coarsely punctate, with grey, recumbent setation. Abdomen brown, with five visible abdominal ventrites, each ventrite laterally with small depressions, covered by recumbent, grey setation. Legs dark brown, covered with comparatively short and thick, grey setation and with short, brown thorns. Tarsi very long. Male genitalia as in Fig. 3.

Female. Externally similar to male, but differs by the structure of antennae, antennal club consisting of smaller antennomeres.

Variability. Body TL 3.1-3.5 mm, EW 1.8-2.0.

Differential diagnosis. The new species is very similar to *Attagenus papei* Háva, 2009 (Oman, United Arab Emirates), according to arrangement of elytral fasciae, but differs from it and other species by the structure of antennae and male genitalia.



Figs. 5-9. *Attagenus socotranus* sp. nov.: 5a-d- habitus, dorsal aspect, colour variability; 6- antenna of male; 7- antenna of female; 8- wing with radial cell; 9- male genitalia.

Attagenus socotranus sp. nov.

(Figs. 5-9)

Type material. Holotype (♂): Yemen, Socotra Island, Noged plain, Abataro, border of sand dunes and shrubland, 12-13.vi.2012, 12°22.1´N, 54°03.4´E, 20 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg., (NMPC). Paratypes: (2 ♂♂, 8 ♀♀): the same data as holotype (8 NMPC, 2 JHAC); (2 ♀♀): Yemen, Socotra Island, Noged plain (sand dunes), Sharet Halma vill. env., 12°21.9´N, 54°05.3´E, 20 m, 10-11.xi.2010, Jiří Hájek lgt., (NMPC); (1 ♂, 2 ♀♀): the same data, but J. Bezděk lgt., (2 NMPC, 1 JHAC); (1 ♂): the same data, but J. Batelka lgt., (NMPC); (4 ♂♂, 8 ♀♀): Yemen, Sokotra Isl. N., Di Lishe beach, 20 m, L. Purchart lgt., (10 NMPC, 2 JHAC); (2 ♂♂, 1 ♀): Yemen, Socotra Island, Aloove area, Aloove vill. env., Jatropha unicostata shrubland with Boswellia elongata trees, 19-20.vi.2012, 12°31.2´N, 54°07.4´E, 221 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg., (2 NMPC, 1 JHAC).

Description. Male, holotype. Body measurements (in mm): TL 3.1 mm, EW 1.8 mm; oblong-oval (Fig. 5a), slightly convex; dorsally and ventrally unicolorously brown, matt; dorsum covered with short and erect, brown and white setation; thoracic underside with comparatively long and recumbent, white setation; visible abdominal ventrites with recumbent, white setation, sparser than that on thoracic surface. Head finely punctured. Palpi long, brown. Frontal median ocellus present. Antennae brown, with short, yellow setation, consisting of 11 antennomeres, antennal club dark brown, compact with 3 antennomeres (Fig. 6). Pronotum (Fig. 5a) finely punctate on the disc, coarsely punctate on lateral margins, covered by white and brown setation; brown setation forming spots. Hypomeron matt with very small punctures. Scutellum broad, small and triangular, matt, with rounded apex, with white setation. Elytra coarsely punctate on humeri and with one small humeral bump, other parts finely punctate, covered by intermixed white (with intermixed yellowish setae) and brown setation with transverse fasciae from white setation (Fig. 5a). Epipleuron brown, very short, with short white setae. Wing with radial cell (Fig. 8). Prosternum without "collar", mouthparts free. Prosternal process short and narrow. Meta- and mesosternum finely punctate discally, laterally coarsely punctate, with white, recumbent setation. Abdomen brown, with five visible abdominal ventrites, each ventrite laterally with small depressions, covered by recumbent, white setation. Legs dark brown, covered with comparatively short and thick, white setation and with short, brown thorns. Tarsi moderately short. Male genitalia as in (Fig. 9).

Female. Externally similar to male, but differs by the structure of antennal club (Fig. 7).

Variability. Specimens in type series are variable in length (TL 2.6-3.7 mm) and in colour setation on dorsal surfaces (Figs. 5a-d). Extreme variability can be probably caused by the environment in different habitats. Specimens from Di Lishe beach are different in dorsal body (Fig. 5c), but antennae and male genitalia are identical.

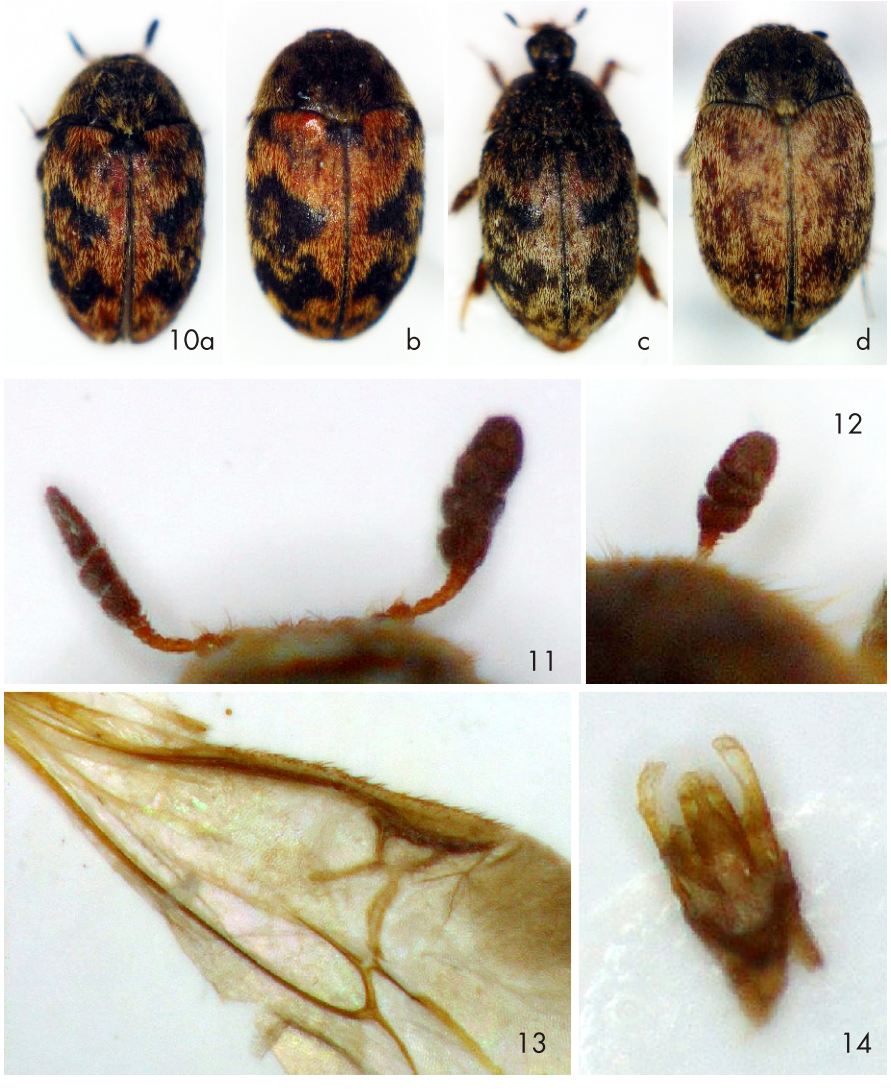
Differential diagnosis. The new species very similar to *Attagenus herrmanni* Háva, 2012 and *Attagenus maseki* Háva, 2013 but differs from them by the structure of antennae, male genitalia and colour patterns on pronotum and elytra.

Attagenus variabilis sp. nov.

(Figs. 10-14)

Type material. Holotype (♂): Yemen, Socotra Island, Deiqub cave, 12.vi.2012, cave & Croton socotranus + Jatropha unicostata shrubland, 12°23.1´N, 54°00.9´E, 115 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I.

Malenovský, J. Niedobová & L. Purchart leg., (NMPC). Paratypes: (2 ♂♂, 5 ♀♀): the same data as holotype, (5 NMPC, 2 JHAC); (3 ♂♂, 1 ♀): Yemen, Socotra Island, Aloove area, Aloove vill. env., Jatropha unicostata shrubland with Boswellia elongata trees, 19-20.vi.2012, 12°31.2´N, 54°07.4´E, 221 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg., (2 NMPC, 2 JHAC); (1 ♂, 1 ♀): Yemen, Socotra Island, Homhil protected area, openwoodland with Boswellia & Dracaena trees, 10-11.vi.2012, 12°34.5´N, 54°18.5´E, 360-500 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg., (NMPC, JHAC); (1 ♀): Yemen, Socotra Island, Dixam plateau, 15+22.vi.2012, Wadi Dirhor, open woodland with Boswelliaameero trees, 12°28.0´N, 54°00.5´E, 340 m / Socotra expedition 2012, J. Bezděk, J. Hájek, V. Hula, P. Kment, I. Malenovský, J. Niedobová & L. Purchart leg., (NMPC); (1 ♂, 6 ♀♀): Yemen, Sokotra Isl. NW, Di Hamri, 20 m, 12°37.59´N, 54°15.40´E, 27.ii.2010, L. Purchart leg., (6 NMPC, 1 JHAC); (1 ♀): Socotra (Yemen), Zam Hom, 7.iv.2008, A. Carapetta leg., (NMPC).



Figs. 10-14. *Attagenus variabilis* sp. nov.: 10a-d- habitus, dorsal aspect, colour variability; 11- antenna of male; 12- antenna of female; 13- wing with radial cell; 14- male genitalia.

Description. Male. Body measurements (in mm): TL 3.0 mm, EW 1.8 mm; oblong-oval (Fig. 10), slightly convex; dorsally brown and black, matt, ventrally dark brown; dorsum covered with short and erect, brown and white setation; thoracic underside with comparatively long and recumbent, white setation; visible abdominal ventrites with recumbent, white setation, sparser than that on thoracic surface. Head finely punctured. Palpi brown. Frontal median ocellus present. Antennae brown, with short, yellow setation, consisting of 11 antennomeres, antennal club dark brown, compact with 3 antennomeres (Fig. 11). Pronotum (Fig. 2) finely punctate on the disc, coarsely punctate on lateral margins, covered by white and brown setation; brown setation forming large spots. Hypomeron matt, with very small punctures. Scutellum narrow, small and triangular, matt, with rounded apex, with white setation. Elytra coarsely punctate on humeri and with one small humeral bump, other parts finely punctate, covered by intermixed grey and brown setation, cuticle brown with ornament as in (Fig. 10). Epipleuron brown, very short, with short,white setae. Wing with radial cell (Fig. 13). Prosternum without "collar", mouthparts free. Prosternal process very short and narrow. Meta- and mesosternum finely punctate discally, laterally coarsely punctate, with white, recumbent setation. Abdomen brown, with five visible abdominal ventrites, each ventrite laterally with small depressions, covered by recumbent, white setation. Legs dark brown, covered with comparatively short and thick, grey setation and with short, brown thorns. Tarsi moderately short. Male genitalia as in (Fig. 14).

Female. Externally similar to male, but differs by the structure of antennal club (Fig. 12).

Variability. Specimens in type series are variable in length (TL 2.7-3.3 mm) and in colour setation on dorsal surfaces (Figs. 10a-d).

Differential diagnosis. The new species is very similar to *Attagenus herrmanni* Háva, 2012 and *Attagenus maseki* Háva, 2013 but differs from them by the structure of antennae and bicolorous colour patterns on pronotum and elytra; from *A. socotranus* sp. nov. differs by the structure of antennae, male genitalia, radial cell on wings and elytral patterns.

Tab. 1. List of *Attagenus* recorded from Yemen and Socotra Island.

species	Continental Yemen	Socotra Island
Attagenus atripennis Pic, 1938	*	
Attagenus dixam sp. nov.		*
Attagenus fasciatus (Thunberg, 1795)	*	
Attagenus herrmanni Háva, 2012	*	
Attagenus kadeji Háva, 2012	*	
Attagenus kadleci Háva, 2012	*	
Attagenus maseki Háva, 2013	*	
Attagenus omanicus Zhantiev, 2007	*	
Attagenus ornatus Háva, 2007		*
Attagenus posticalis Fairmaire, 1878	*	
Attagenus smirnovi Zhantiev, 1973	*	
Attagenus socotranus sp. nov.		*
Attagenus vanharteni Háva, 2009	*	
Attagenus variabilis sp. nov.		*
Attagenus yemensis Háva & Herrmann, 2014	*	

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