

***Megatoma (Pseudohadrotoma) cavani* sp. nov.,
a new dermestid species from Utah, U.S.A.
(Coleoptera: Dermestidae: Megatomini)**

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Abstract. A new species, *Megatoma (Pseudohadrotoma) cavani* sp. nov. from Utah (U.S.A.) is described, illustrated and compared with related species of that genus. The beetles were caught by a special kind of trap (V-FIT or V-shaped FIT). *Megatoma (Pseudohadrotoma) kaliki* (Beal, 1967) is newly recorded from Utah and Wyoming. Furthermore a list of all *Megatoma* species occurring in the U.S.A. is provided.

INTRODUCTION

The genus *Megatoma* Herbst, 1791 consists of 27 different species, up to now 17 are recorded from North America, whereas only three occur in the state of Utah. Those three species belong to the subgenus *Megatoma* (s. str.). So far no species of the subgenus *Pseudohadrotoma* Kalík, 1951 have been detected in that state. Recently a new species was collected in Utah by a quite rarely used kind of trap (V-FIT), and is described herein. It was detected between the unidentified dermestids sent by the entomologist Daniel J. Cavan (Utah, USA) to the first author. At the first glance it could easily be mistaken with the extremely similar looking *Megatoma (Pseudohadrotoma) kaliki* (Beal, 1967), but during a closer examination of morphological details, some distinct and constant differences between these two species came up. *Megatoma kaliki* was described from British Columbia (Beal 1967). Although that species shows some variability (Beal, 1967) a lack of the elytral fascia has never been mentioned in the literature so far, also not in his adjuvant paper about its range extension and character variation (Beal, 1994). In his checklist of the Nearctic Dermestidae, Beal extended the known distribution of *Megatoma kaliki* to Colorado and Idaho (Beal 2003), with no additions in his paper about regarding corrections (Beal 2005); whereas the recently actualized version of that checklist added Montana too (Háva & Herrmann 2021). During the examination of the trap material it turned out that *Megatoma kaliki* occurs also in Wyoming and Utah, so the distribution range of the two species is overlapping.

MATERIAL AND METHODS

The specimens were stored for seven days in a solution of 1% pepsin in hydrochloric acid to free them roughly from protein tissues and making the extremities of the body moveable. The abdomen was disconnected from the body and glued upside-down onto the same cardboard plate, just behind the beetle. Before doing this, the genitalia was excluded and then cleaned with a fine needle in a drop of 99% glycerol. Afterwards it was also glued onto the plate behind the beetle, firmly embedded in a drop of a solution consisting of polyvinylpyrrolidone, aqua demineralisata and diglycerin (the liquid solution becomes permanently solid after a few minutes). Photos of the body and the abdomen were taken with a Sony alpha 35 digital SLR camera, connected with a Nikon CF N Plan Achromat 4x 160/-objective and extension rings; for the photos of the genitalia and antenna a Bresser Junior USB-Handmikroskop at 200x magnification was used. Because of the low depth of field all photos were taken as layered images, afterwards combined by using the stacking program CombineZP. Nomenclature and systematics in this paper follow Háva (2024).

The following measurements were made:

total length (TL) - linear distance from anterior margin of pronotum to apex of elytra;
pronotal length (PL) - maximal length measured from anterior margin to posterior margin;
pronotal width (PW) - maximal linear transverse distance;
elytral length (EL) - linear distance from shoulder to apex of elytron;
elytral width (EW) - maximal linear transverse distance.

The specimens of the species described here are provided with a red, printed label with text as follows: „HOLOTYPE [respectively PARATYPE], *Megatoma (Pseudohadrotoma) cavani* sp. nov., A. Herrmann & J. Háva det. 2024”.



Figs. 1-2. Photos of V-FIT traps (both taken from Löbl et al. 2021): 1- V-flight intercept trap, with metal frame; 2- travel version of V-flight intercept trap.



TAXONOMY

Megatoma (Pseudohadrotoma) cavani sp. nov. (Figs. 3 a-f)

Type material. Holotype (♂): USA, Utah, Sanpete County, Log Canyon Road, 19.VI.-13.VII.2021 leg. D. Cavan (V-FIT), (AHEC). Paratypes: (34 spec.): with the same record data as the holotype; (16 spec.): USA, Utah, Sheeprock Mountains/Tooele County, North Oak Brush Creek, 1.-28.VII.2021 leg. D. Cavan (V-FIT); (9 spec.): USA, Utah, Sheeprock Mountains/Tooele County, North Oak Brush Creek, 18.VI.-1.VII.2021 leg. D. Cavan (V-FIT); (15 spec.): USA, Utah, South Willow Canyon/Tooele County, Loop Campground, 15.VI.-1.7.VII.2021 leg. D. Cavan (V-FIT); (18 spec.): USA, Utah, South Willow Canyon/Tooele County, Loop Campground, 25.V.-15.VI.2021 leg. D. Cavan (V-FIT); (2 spec.): USA, Utah, South Willow Canyon/Tooele County, Loop Campground, 1.-28.VII.2021 leg. D. Cavan (V-FIT); (7 spec.): USA, Utah, Sanpete County, Log Canyon Road, 13.VII.-19.VIII.2021 leg. D. Cavan (V-FIT); (18 spec.): USA, Utah, Sanpete County, Log Canyon Road, 31.V.-19.VI.2021 leg. D. Cavan (V-FIT). The paratypes are deposited in AHEC and JHAC.

Description of the holotype (male). Body measurements (mm): TL 3.4, PL 0.7, PW 1.4, EL 2.7, EW 1.6; color of the body deep black, longish oval, head densely and coarsely punctate, the apical part the puncture is evenly umbilicate, dulled by the dense punctures. Eyes big with hardly visible microsetae. Ocellus distinctly present on frons. Pronotum two times broader than long, narrowed from the apical to the anterior edges, margins untoothed

and visible from above, punctation almost as dense and coarse as in the head, covered somewhat sparsely by short strong setae which are dark and suberect, with a few brighter setae intermixed near the apical edges. Scutellum small, triangular rounded, naked and without punctation. Elytra also dense and coarsely punctate, the unicolorous dark pubescens formed as in the pronotum (Fig. 3a). Antennae consist of 11 antennomeres each; the shaft honey yellow with a distinctly darkened basal segment and club; antennal club large and longish oval, its final segment conspicuously extended (Fig. 3b). Sternites I-V black, with similar punctation and pubescens as in the elytra. Legs thin and darkish brown, with sparse decumbent short light setae front tarsi distinctly shorter than the tibiae, the middle and hind tarsi almost as long as the tibiae. Genitalia and aedeagus as in Fig. 3 (d-e).

Female. Very similar to the male, but with the final antennal segment being much smaller (Fig. 3 b-c).

Variation. Variation in body size: TL 2.5-3.8 mm.

Differential diagnosis. Because of the morphological characters, the new species belongs in the subgenus *Pseudohadrotoma* Kalík, 1951. Within this subgenus it resembles mostly *Megatoma kaliki* (Beal, 1967), but can easily be distinguished from that species by its unicolorous elytral pubescence, whereas *Megatoma kaliki* shows a more or less indistinct fascia of bright setae located in the anterior third of the elytra. Furthermore there are differences between these species given by the form of the genitalia and antennae (see the provided photos).

Etymology. The species name is dedicated to the collector of the specimens, Daniel J. Cavan (Utah, U.S.A.).

Distribution. So far known only from Utah, U.S.A.

***Megatoma (Pseudohadrotoma) kaliki* (Beal, 1967)**
(Figs. 4 a-f)

Material examined: USA: Utah, Uintah Mountains, Uintah County, Hwy 191 at Limestone Road, 10.07.2021, leg. D. Cavan by V-VIT, 16 spec. + ca. 100 spec. wasted, (AHEC); USA: Wyoming WY, Green Mountain, Fremont County, Cottonwood Campground, 15.07.2021, leg. D. Cavan by V-VIT, 39 spec. + ca. 100 spec. waste, (AHEC, JHAC); USA: Utah, Red Creek, Juab County Nebo Loop, 15.06.2022, leg. D. Cavan by V-VIT, 16 spec. + ca. 100 spec. wasted, (AHEC).

Distribution. A species known from Canada: British Columbia; U.S.A.: Colorado, Idaho, Montana (Háva & Herrmann 2021), new to Utah and Wyoming.

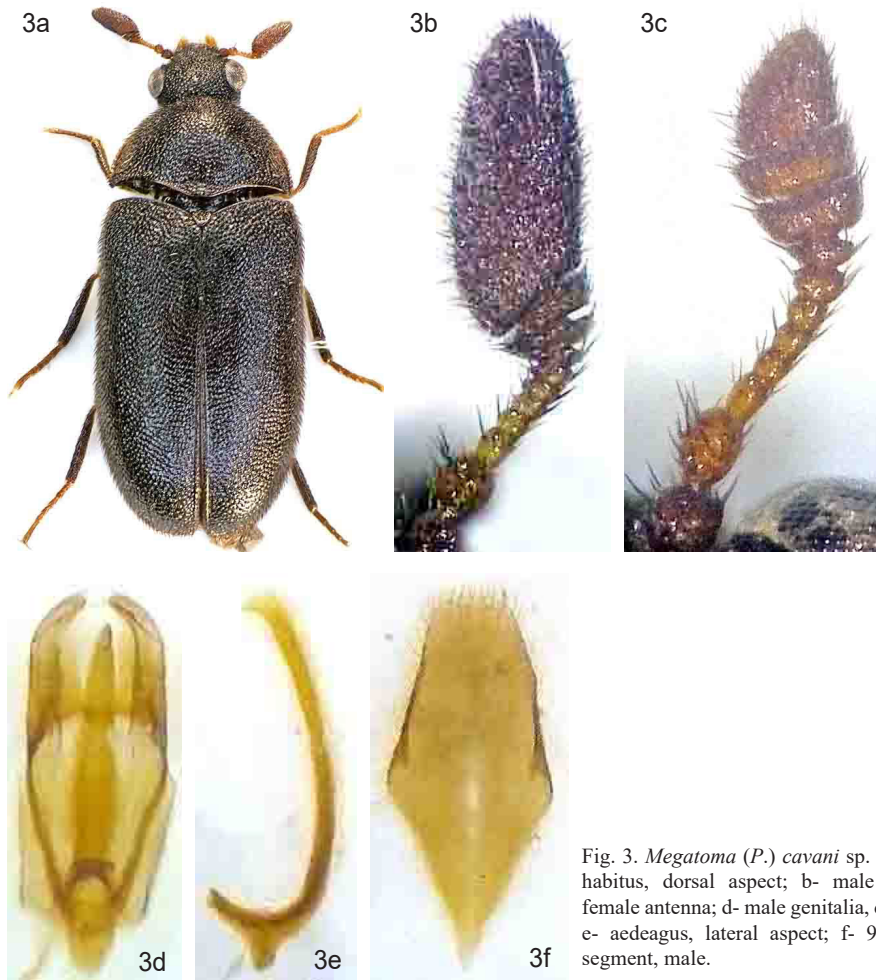


Fig. 3. *Megatoma (P.) cavani* sp. nov.: a- male habitus, dorsal aspect; b- male antenna; c- female antenna; d- male genitalia, dorsal aspect; e- aedeagus, lateral aspect; f- 9th abdominal segment, male.

LIST OF ALL *MEGATOMA* SPECIES KNOWN FROM THE U.S.A.

subgenus *Megatoma*

- Megatoma (Megatoma) ampla* (Casey, 1900)
- Megatoma (Megatoma) angularis* (Mannerheim, 1853)
- Megatoma (Megatoma) belfragei* (LeConte, 1874)
- Megatoma (Megatoma) cylindrica* (Kirby, 1837)
- Megatoma (Megatoma) dolia* Beal, 1967
- Megatoma (Megatoma) giffardi* (Blaisdell, 1927)
- Megatoma (Megatoma) leucochlidon* Beal, 1967
- Megatoma (Megatoma) polia* Beal, 1967
- Megatoma (Megatoma) pubescens* (Zetterstedt, 1828)

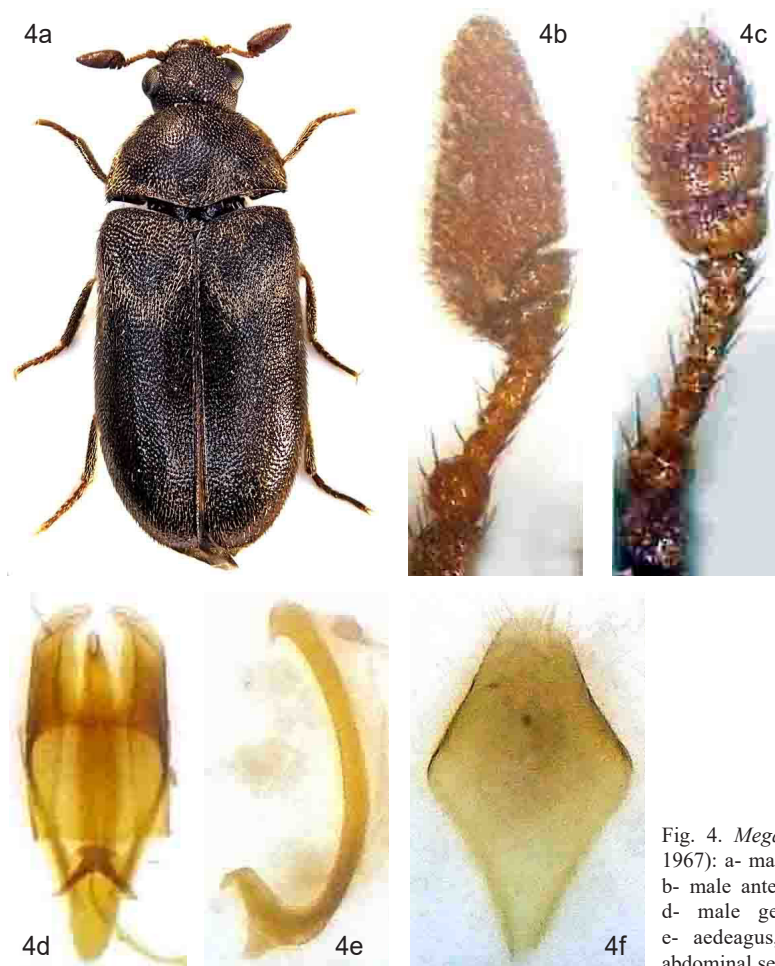


Fig. 4. *Megatoma (P.) kaliki* (Beal, 1967): a- male habitus, dorsal aspect; b- male antenna; c- female antenna; d- male genitalia, dorsal aspect; e- aedeagus, lateral aspect; f- 9th abdominal segment, male.

Megatoma (Megatoma) undata (Linnaeus, 1758)

Megatoma (Megatoma) variegata (Horn, 1875)

subgenus *Pseudohadrotoma*

Megatoma (Pseudohadrotoma) cavani sp. nov.

Megatoma (Pseudohadrotoma) falsa (Horn, 1875)

Megatoma (Pseudohadrotoma) graeseri (Reitter, 1887)

Megatoma (Pseudohadrotoma) kaliki (Beal, 1967)

Megatoma (Pseudohadrotoma) perversa (Fall, 1926)

Megatoma (Pseudohadrotoma) trichorhopalum (Beal, 1967)

Megatoma (Pseudohadrotoma) trogodermoides (Beal, 1967)

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