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New *Cryptophagus* HERBST, 1792 (Coleoptera: Cryptophagidae) from New Mexico (United States of America)

Jens ESSER

A b s t r a c t : Three new species of *Cryptophagus* HERBST, 1792 (Cryptophagidae) from New Mexico (USA) are described.

K e y w o r d s : Cryptophagidae, *Cryptophagus*, Nearctic Region, USA, New Mexico, new species.

Introduction

The examination of specimens in several collections shows, that New Mexico is relatively rich in endemic and mostly wingless species (ESSER 2017). Species with wider distribution also were found.

So far known the wingless species are restricted on more or less small mountains ranges or single mountains with relatively moist conditions and forests in contrast to the surrounding areas which are more arid. The species are not able to get in contact because of the more dry environment between the different mountains.

Material and methods

The material examined is deposited in the following collections:

UNM-MSBAUniversity of New Mexico - Museum of Southwestern Biology,
Albuquerque (NM), USA

cBU.....Richard J. Buss, Albuquerque (NM), USA

cES.....author's private collection, Berlin, Germany

The morphological studies were conducted using a Euromex DZ-1605 and Euromex BB.1153.PLI. Photographs were created with a ToupCam 14MP (ToupTek).

Body length was measured from the head to the apex of the elytra, length of pronotum in the middle, broadness on the broadest part.

Description of new species

***Cryptophagus redondoensis* nov.sp. (fig. 5)**

T y p e m a t e r i a l : Holotype ♂: "USA NM Sandoval Co., Valles Caldera Nat. Preserve,

Redondo Peak, Felsenmeer El. 11,000 ft, N35°52'22.9", W108°33'50.5", 26 Aug - 1 Oct 2014 / Cryptophagidae, *Cryptophagus varus* Woodroffe & Coombs det. R J Buss 2017" [UNM-MSBA].

Paratypes: 1♀ "USA NM Sandoval Co., Valles Caldera Nat. Preserve, Redondo Peak, Felsenmeer El. 11,000 ft, N35°52'22.9", W108°33'50.5", 24 June - 30 July 2014 / Cryptophagidae, *Cryptophagus varus* Woodroffe & Coombs det. R J Buss 2017" [UNM-MSBA]; 2♂♂, 3♀♀ "USA NM Sandoval Co., Valles Caldera Nat. Preserve, Redondo Peak, Felsenmeer El. 11,000 ft, N35°52'22.9", W108°33'50.5", 30 July - 26 Aug 2014 / Cryptophagidae, *Cryptophagus varus* Woodroffe & Coombs det. R J Buss 2017" [UNM-MSBA, cES]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-07 Pit#B; El. 11,200 ft, N35°52'13.5", W106°33'48.7", 27 May-12 June 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA, cES]; 2♂♂ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-03 Pit#B; El. 11,200 ft, N35°52'14.2", W106°33'42.7", 27 May-12 June 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♂♂, 3♀♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-09 Pit#B; El. 11,200 ft, N35°52'12.8", W106°33'50.4", 27 May-12 June 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-08 Pit#A; El. 11,200 ft, N35°52'13.1", W106°33'49.7", 12-23 June 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-09 Pit#A; El. 11,200 ft, N35°52'12.8", W106°33'60.4", 23 June-29 July 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-05 Pit#B; El. 11,200 ft, N35°52'15.9", W106°33'40.4", 23 June-29 July 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-01 Pit#B; El. 11,200 ft, N35°52'12.5", W106°33'44.5", 23 June-29 July 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-MAL-1; El. 11,200 ft, N35°52'11.8", W106°33'46.3", 1-8 July 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA]; 1♂ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-03 Pit#A; El. 11,200 ft, N35°52'14.2", W106°33'42.7", 25 August-30 September 2014 / Cryptophagidae, *Cryptophagus confertus* Casey det R J Buss 2017" [UNM-MSBA].

E t y m o l o g y : Named after the Redondo Peak (Valles Caldera National Preserve) where the types were collected.

D e s c r i p t i o n : Male, 2,2 mm, pale reddish-brown, membranous wings absent, eyes small. Covered with long and whitish hair, pubescence decumbent. Beetle shiny. Legs long but strong, tarsi 5-jointed, hind tarsi 4-jointed (not in female). Fore tarsi (segments I to IV) hardly widened (not in female). Antennae moderately slender and 11-segmented with a 3-segmented club. Segments IX and X moderately transverse, segment XI drop-shaped. Segments IV to VIII more (segment IV) or less (segment VIII) longer than broad. Segments II and III distinctly longer than wide, segment nearly spherical. Pronotum nearly wide as long, punctuation moderately strong and dense. Anterior callosity not prominent, with a little tooth oriented backwards. Lateral tooth placed in the middle of the lateral margin. Margin before the lateral tooth slightly concave, behind the tooth slightly convex. Elytra elongated, slightly flattened, punctuation (basal third) less strong and dense than on pronotum.

C o m m e n t : Quite typical species with legs and antennae slender and small eyes. It differs from *Cryptophagus bussi* ESSER, 2017 by it less convex posterior part of the margin and more flattened pronotum and elytra.

***Cryptophagus jemezmontanus* nov.sp. (fig. 1, 3)**

Type material: Holotype ♂: "USA NM Sandoval Co, Valles Caldera Nat. Preserve, N35°55'42" W106°26'51", Site MC-04 Trap #A, 14-28 Sept 2011 / Cryptophagidae, Cryptophagus sp. det R. J. Buss 2017" [UNM-MSBA].

Paratypes: 1♂ "USA NM Sandoval Co, Valles Caldera Nat. Preserve, N35°57'12" W106°35'33", Site MC-12 Trap #A, 17-30 Aug 2011 / Cryptophagidae, Cryptophagus sp. det R. J. Buss 2017" [cES]; 1♀ "USA NM Sandoval Co, Valles Caldera Nat. Preserve, N35°57'12" W106°35'33", Site MC-12 Trap #B, 17-30 Aug 2011 / Cryptophagidae, Cryptophagus sp. det R J Buss 2017" [cES]; 3♀♀ "USA NM Sandoval Co, Valles Caldera Nat. Preserve, N35°57'12" W106°35'33", Site MC-12 Trap #C, 17-30 Aug 2011 / Cryptophagidae, Cryptophagus sp. det R. J. Buss 2017" [UNM-MSBA]; 1♀ "USA NM Sandoval Co, Valles Caldera Nat. Preserve, N35°53'20" W106°29'57", Site MC-10 Trap #A, 12-26 Sept 2011 / Cryptophagidae, Cryptophagus sp. det R. J. Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-03 Pit#A; El. 11,200 ft, N35°52'14.2", W106°33'42.7", 12-23 June 2014 / Cryptophagidae, Cryptophagus tuberculosus Mäklin det R J Buss 2017" [UNM-MSBA]; 1♀ "USA, NM, Sandoval County, Valles Caldera National Preserve, Redondo Peak, Spruce Fir Forest, SF-03 Pit#B; El. 11,200 ft, N35°52'14.2", W106°33'42.7", 29 July-25 August 2014 / Cryptophagidae, Cryptophagus porrectus Casey det R J Buss 2017" [cES]; 1♂, 2♀♀ "New Mexico Sandoval Co., Bandelier National Mon., 35°49'57"N 106°26'05"W, 08/15/95 MC-B 8870, D. C. Lightfoot collector / Mixed conifer habitat 2712 m elevation, pitfall trap B line, COCR0101 / Caenoscelis antennalis (Casey) Det. RA Fagerlund" [UNM-MSBA, cES].

E t y m o l o g y : Named after the Jemez Mountains where the types were found.

Description: Male, 2 mm, reddish-brown, hind wings absent, eyes moderately small. Covered with long and woolly, whitish hairs. Pubescence slightly erected, in the posterior half mixed with shorter and decumbent hairs (pubescence double). Beetle moderately shiny. Legs more stout, tarsi 5-jointed, hind tarsi 4-jointed (not in female). Fore tarsi (segments I to IV) slightly widened (not in female). Antennae moderately slender, 11-segmented with a 3-segmented club. Segments IX and X slightly transverse, segment XI drop-shaped. Segments I to VIII long as broad or indistinct longer. Segment III longer as wide, segment I nearly spherical, broader than the remaining, segment II broader than segments III to VIII. Pronotum moderately wider than long, punctuation strong and dense. Anterior callosity not prominent, with a little tooth oriented backwards. Lateral tooth placed in the middle of the lateral margin. Elytra elongated, oval, with strong punctuation less dense than on pronotum (basal third). Parameres as in fig. 3.

Comment: General shape like a few other species, e.g. *Cryptophagus difficilis* CASEY, 1900 or *C. magdalenamontanus* ESSER, 2017. *C. difficilis* is currently not known from New Mexico. *C. magdalenamontanus* is restricted to the Magdalena Mountains. Both have a anterior callosity forming a more strong tooth. Their pubescence is more erected than in *C. jemezmontanus*.

Cryptophagus jemezmontanus nov.sp. is very similar to *C. sanmateomontanus* nov.sp. (fig. 2). There are no good features to distinguish the species without the parameres (figs. 3, 4). So far known, *C. jemezmontanus* is restricted to the Jemez Mountains.

Distribution: Known only from the Jemez Mountains in New Mexico (USA).

***Cryptophagus sanmateomontanus* nov.sp. (fig. 2, 4)**

Type material: Holotype ♂: "USA: NM: Cibola Co., Mt. Taylor, pitfall trap, N35°15.21' W107°34.17', leg. R. J. Buss, 04.08.2017" [cES].

Paratypes: 4♀♀ with the same data as the holotype [cBU, cES].

E t y m o l o g y : Named after the San Mateo Mountains where the types were collected.

D e s c r i p t i o n : Male, 2.5 mm, reddish-brown, hind wings absent, eyes moderately small. Covered with long and woolly, whitish hairs. Pubescence slightly erected in the anterior half, more erected in the posterior half and also with short and decumbent hairs (pubescence double). Beetle moderately shiny. Legs more stout, tarsi 5-jointed, hind tarsi 4-jointed (not in female). Fore tarsi (segments I to IV) slightly widened (not in female). Antennae moderately slender, 11-segmented with a three-segmented club. Segments IX and X transverse, segment XI drop-shaped. Segments III to VIII more (segment III) or less (segment VIII) longer than wide. Segment I spherical, segment II less broad than I but broader than II. Pronotum hardly wider than long, punctuation strong and dense. Anterior callosity not prominent, with a little tooth oriented backwards. Lateral tooth placed nearly in the middle of the lateral margin. Elytra elongated, oval, with strong punctuation less dense than on pronotum (basal third). Parameres as in fig. 4.

C o m m e n t : General shape like a few other species, e. g. *Cryptophagus difficilis* CASEY, 1900 or *C. magdalenamontanus* ESSER, 2017. *C. difficilis* is currently not known from New Mexico. *C. magdalenamontanus* is restricted to the Magdalena Mountains. Both have a anterior callosity forming a more strong tooth. Their pubescence is more erected than in *C. sanmateomontanus*.

Cryptophagus sanmateomontanus nov.sp. is very similar to *C. jemezmontanus* nov.sp. (fig. 2). There are no good features to distinguish the species without the parameres (figs. 3, 4). So far known, *C. sanmateomontanus* is restricted to the San Mateo Mountains.

D i s t r i b u t i o n : Known only from the San Mateo Mountains in New Mexico (USA).

Acknowledgement

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Zusammenfassung

Drei neue Arten der Gattung *Cryptophagus* HERBST, 1792 aus New Mexico (USA) werden beschrieben und mit ähnlichen Arten verglichen.

References

- ESSER J. (2017): Two new species of *Cryptophagus* HERBST, 1792 (Coleoptera: Cryptophagidae) from New Mexico (USA). — Linzer biologische Beiträge **49** (1): 571-576.

Author's address:

Jens ESSER
Fagottstraße 6
D-13127 Berlin, Germany
E-mail: jens_esser@yahoo.de



Fig. 1-2: (1) *Cryptophagus jemezmontanus* nov.sp. holotype, male; (2) *Cryptophagus sanmateomontanus* nov.sp. holotype, male.

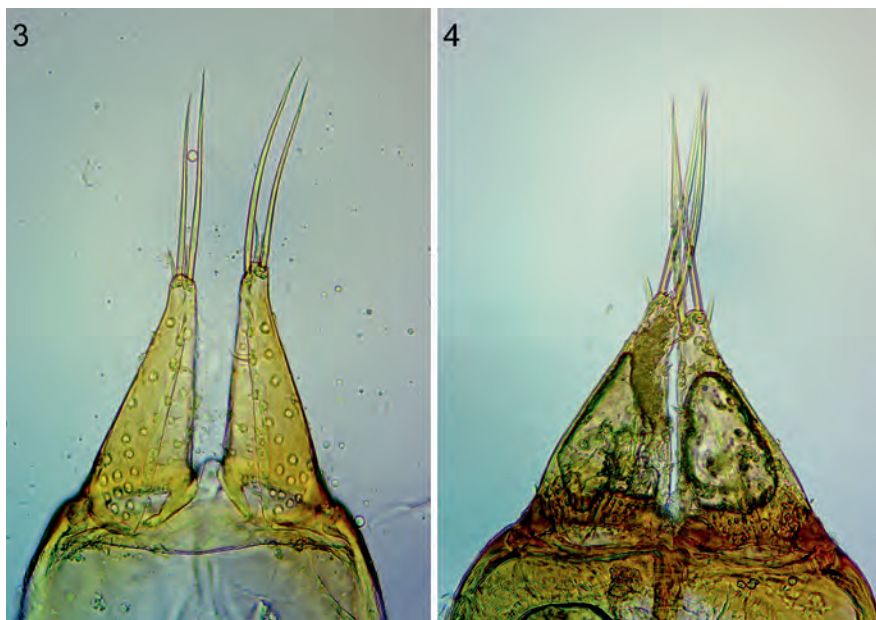


Fig. 3-4: (3) *Cryptophagus jemezmontanus* nov.sp. holotype, parameres; (4) *Cryptophagus sanmateomontanus* nov.sp. holotype, parameres.

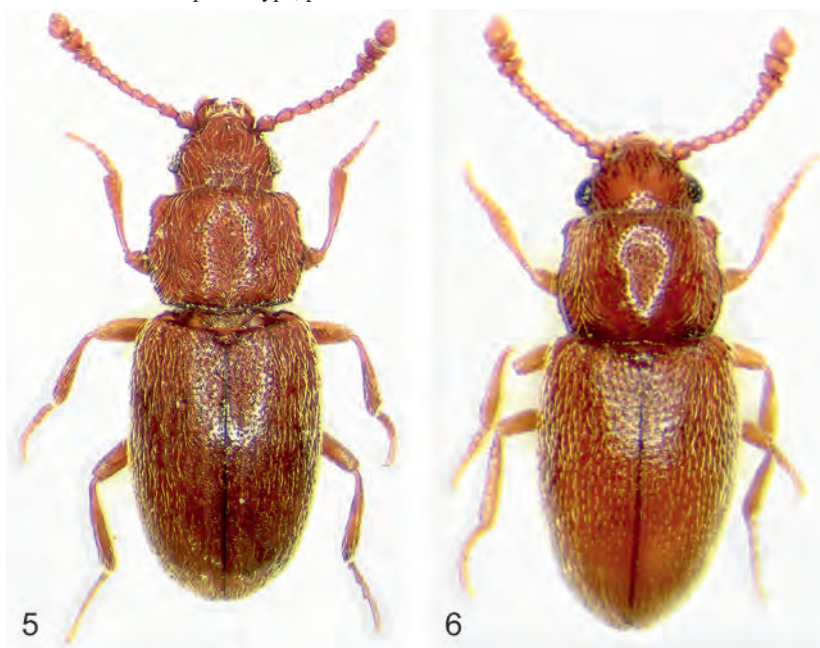


Fig. 5-6: (5) *Cryptophagus redondoensis* nov.sp. holotype, male; (6) *Cryptophagus bussi* ESSER, 2017

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