Insect systematics A journal of world insect systematics

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An illustrated type catalog of *Trichodesma* LeConte, 1861 (Coleoptera: Ptinidae) from Mexico, with description of a new species

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Date of issue: December 29, 2023

Schnepp KE. 2023. An illustrated type catalog of *Trichodesma* LeConte, 1861 (Coleoptera: Ptinidae) from Mexico, with description of a new species. Insecta Mundi 1024: 1–19.

Published on December 29, 2023 by Center for Systematic Entomology, Inc. P.O. Box 141874 Gainesville, FL 32614-1874 USA http://centerforsystematicentomology.org/

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An illustrated type catalog of *Trichodesma* LeConte, 1861 (Coleoptera: Ptinidae) from Mexico, with description of a new species

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Abstract. *Trichodesma nancyae*, **new species** (Coleoptera: Ptinidae), is described from Mexico. The species is illustrated and diagnosed, bringing the total number of extant species in the genus to 73. **Lectotypes** for *Trichodesma beyeri* Fall, *Trichodesma scripta* Champion, and *Trichodesma texana* Schaeffer are here designated. Habitus and label photographs are provided for types of 12 of the 13 species occurring in Mexico.

Key words. Anobiinae, death-watch beetle, spider beetle, Central America.

ZooBank registration. urn:lsid:zoobank.org:pub:F608D6CF-885B-49EA-9E8C-F0A12AE39424

Introduction

The genus *Trichodesma* LeConte (Coleoptera: Ptinidae) contains 73 extant, described species worldwide, 44 of which occur in North and South America (Schnepp 2023). With the inclusion of the new species described herein, there are 13 named species known to occur in Mexico. Many additional undescribed species are known, and several species known from the southern United States and Guatemala are likely to also occur in Mexico.

Laporte de Castelnau (1838) described the first species from Mexico ("Mexique"), *Trichodesma imperator* (Castelnau), under the genus *Anobium* Fabricius. Gorham (1883) added one species from Atoyac, *Trichodesma w-album* Gorham, and Horn (1894) added *Trichodesma sellata* Horn from Baja California. Pic (1901) added two additional species, *Trichodesma gorhami* Pic and *Trichodesma mexicana* Pic, both from Almolonga. Schaeffer (1903) added *Trichodesma texana* Schaeffer to the Texas fauna, but the species was subsequently found in Matamoros, and Fall (1905) described *Trichodesma beyeri* Fall from Baja California. Champion (1913) added *Trichodesma scripta* Champion from Veracruz and *Trichodesma tricristata* Champion from Orizaba, and Champion (1914) described *Trichodesma convexa* Champion, *Trichodesma discigera* Champion, and *Trichodesma sublineata* Champion from Acapulco.

Along with Schnepp (2023), this work was undertaken in preparation for a larger revision. The purpose is to describe this unique new species, establish a foundational list with type illustrations, and to make necessary lectotype designations to stabilize nomenclature.

Materials and Methods

Specimens examined. Specimens were examined with a Leica S6D microscope. Photographs were taken with a Canon Eos 6D Mark II camera mounted to a Nikon SMZ1500 microscope. Photographs were stacked with HeliconFocus 8.2.2 and images compiled into plates using GIMP 2 software (version 2.10.12). Specimens from the following collections were studied:

CAS California Academy of Sciences, San Francisco, CA, USA FSCA Florida State Collection of Arthropods, Gainesville, FL, USA

MCZC Museum of Comparative Zoology Collection, Cambridge, MA, USA

MNHM Muséum National d'Histoire Naturelle, Paris, France NHMUK Natural History Museum, London, England, UK

USNM National Museum of Natural History, Washington, D.C., USA

Label data. Label data are given verbatim in quotes. A space+slash+space (/) indicates line breaks and space+double-slash+space (//) indicates a different label. Labels are on white paper unless otherwise indicated by information between brackets ([]).

Results and Discussion

Trichodesma LeConte, 1861

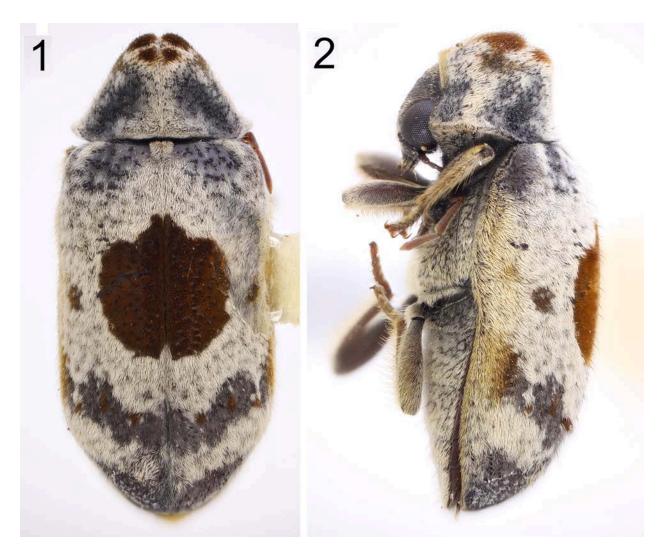
Type species: *Anobium gibbosum* Say, 1825; by original designation.

Trichodesma nancyae Schnepp, new species

Figures 1-2, 23-28

Type material. Holotype, male (FSCA): "MEXICO: Guerrero / 10 km. N Chilpancingo / 22 July 1987 / R. Turnbow // [on red] HOLOTYPE / *Trichodesma nancyae* / Schnepp, 2023".

Paratype, undissected (FSCA): "MEXICO, GUERRERO: / HWY. 95, 3.6 Km S. / Zumpango del Rio // G. H. Nelson / 7-VII-92 // on *Acacia / cochliacantha //* [on yellow] PARATYPE / *Trichodesma / nancyae* / Schnepp, 2023".



Figures 1–2. Trichodesma nancyae Schnepp, new species, paratype. 1) Dorsal habitus. 2) Lateral habitus.

Diagnosis. *Trichodesma nancyae* is distinguished from all other named species of *Trichodesma* by the large, dark, brown circle on the middle of the elytra, as well by the lack of long, erect setae on the elytra. The only similar species in Mexico with a round marking on the elytra are *Trichodesma beyeri* Fall and *Trichodesma discigera* Champion, both of which differ from *T. nancyae* by the circle being created by a reduction of setae, not the presence of dense, short brown setae. They also differ in having distinct, long erect setae.

Description. Holotype: Sex: male. Length: 6.1 mm; width: 3 mm. Overall body form elongate oval. Head: Frons covered with short, pale pubescence that becomes shorter and less dense posteriorly. Eyes large, interocular distance slightly wider than each eye in anterior view. Antennae with 11 antennomeres, the last three forming a club; antennomeres IX and X equal in length, antennomere XI as long as antennomeres II-VIII combined; antennomere IX securiform, widening on one side from base to apex; antennomere X widening on one side from base to apex but not as wide at apex as antennomere IX; antennomere XI similar width throughout, becoming slightly wider apically. Pronotum: Gibbous, covered in shiny, generally distributed round asperities; widest in anterior third, converging slightly anteriorly with anterior angles produced, converging very broadly posteriorly with a sinuation in the basal third. Laterally with a strong carina from base to apex. Generally covered in pale appressed setae with a sparsely covered patch each side posterolaterally and at the anterolateral angles. On the disc, at the apex of the gibbosity, are four patches of brown setae, the anterior pair larger than the posterior pair, each separated by a thin line of white pubescence. Elytra: Basally with irregularly distributed shiny, round asperities. Generally covered in a dense, pale, appressed pubescence, with a denuded sparse patch on each elytron mediobasally, apically, and the apical ¼ from the suture anterolaterally. The general pale pubescence developing a brown tinge laterally. Dark, erect setae are present irregularly; punctures are deep and distinct, and clearly separated. There is a common brown circle medially on the disc made of a dense patch of short setae, basally this circle with a slight divot of white pubescence either side of the suture, and the apex with a slight intrusion of white pubescence along the suture; the lateral portion of the divot with erect brown setae. Lateral to the central spot is a smaller brown spot on the lateral ¼ of each elytron. In the denuded patch at the apical ¼ are three small brown patches of erect setae. Legs: Covered in pale, generally appressed pubescence, tibiae with outer margin with denser pubescence and long, erect setae. Femur and tibia equal in length; tarsi with basal and apical tarsomeres equal in length, middle three tarsomeres slightly shorter and equal in length to one another; each tarsomere with dense pale setae beneath; tarsal claws with basal tooth. Venter: Ventral portions of the thorax with distinctly separated shiny, round asperities, between which is appressed, moderately dense pale pubescence. Abdomen generally covered with appressed, moderately dense, pale pubescence with tracks or small patches of denuded areas where instead there are shiny asperities. Genitalia (Fig. 28): Viewed dorsally, parameres elongate with a lateral extension that first curves arcuately away from the genitalia and then back toward the median lobe where it ends as it begins to recurve laterally again; this lateral extension is slightly longer than the median lobe. The portion of the parameres beyond this extension is more heavily sclerotized and bifid at the apex. The median lobe expanding from the base, widest in the middle, and converging to an acuminate apex. Medially there is a slightly impressed channel basally that expands apically until it opens up and merges with the opposite surface at about the middle of the lobe.

Variation (n = 2). The paratype is slightly larger than the holotype at 6.3 mm long and 3.1 mm wide but is similar in virtually all characters. It is not dissected but matches the holotype in antennal size and length, and eye size, often dimorphic characters in this genus.

Distribution. Both specimens were collected between Chilpancingo and Zumpango in the state of Guerrero, Mexico.

Etymology. Named for Nancy Schnepp, whose endless support allowed the author to professionally do what he loved and research insects; not all mothers are thrilled with a freezer full of bugs, but she was never fazed.

Temporal data. Two specimens, both collected in July.

Species of Trichodesma LeConte in Mexico

Trichodesma beyeri Fall 1905: 174

Figures 3–6

A small number of specimens were seen by Fall from "Santa Rosa, Lower California", with no holotype specified. In the MCZC there are three specimens with that data, one of those specimens labeled as type, but it is unclear as to when this label was added. In accordance with ICZN Recommendation 73F to not assume types, I am **designating here** one of the other two, a male, as lectotype with the following labels "Santa Rosa / Low, Cal. // H.C. Fall / Collection // MCZ-ENT [QR code] 00732367 // [on red] LECTOTYPE / *Trichodesma beyeri* / Fall Designated by / Schnepp, 2023"; deposited in the MCZC.

Trichodesma convexa Champion 1914: 669

Figures 7-10

One specimen, holotype, was seen by Champion with the following labels "Acapulco, / Guerrero. / Höge. // 1907–156. // B.C.A.Coll.III.(2). / Trichodesma // [handwritten] Trichodesma / convexa / Ch. // [circle outlined in red] Type / H.T."; deposited in the NHMUK.

Trichodesma discigera Champion 1914: 668

Figures 11–14

One specimen, holotype, was seen by Champion with the following labels "Acapulco, / Guerrero. / Höge. // 1907–156. // B.C.A.Coll.III.(2). / Trichodesma // [handwritten] Trichodesma / discigera Ch. // [circle outlined in red] Type / H.T."; deposited in the NHMUK.

Trichodesma gorhami Pic 1901: 93

Figures 15-18

There is ambiguity regarding the names and relationships between this and *Trichodesma imperator* (Laporte de Castelnau). Pic (1901) provides a new name for *T. imperator* without any explanation why a name is needed. He indicates the author as Gorham even though Gorham (1883) attributes authorship to Laporte de Castelnau (1838) and Gorham simply provides a figure for the species. If Pic believed that Gorham was describing it and created a homonym, then his new name would be justified. It seems, however, that Pic simply renamed the species, as Champion (1913) states; "Pic renamed the insect from this figure, but he did not describe it in any way". If we believe that both Pic and Champion thought that the figure for *T. imperator* from Gorham (1883) did not match the description from Laporte de Castelnau (1838), then it is possible that Pic's 1901 name is simply a new name and not a replacement name.

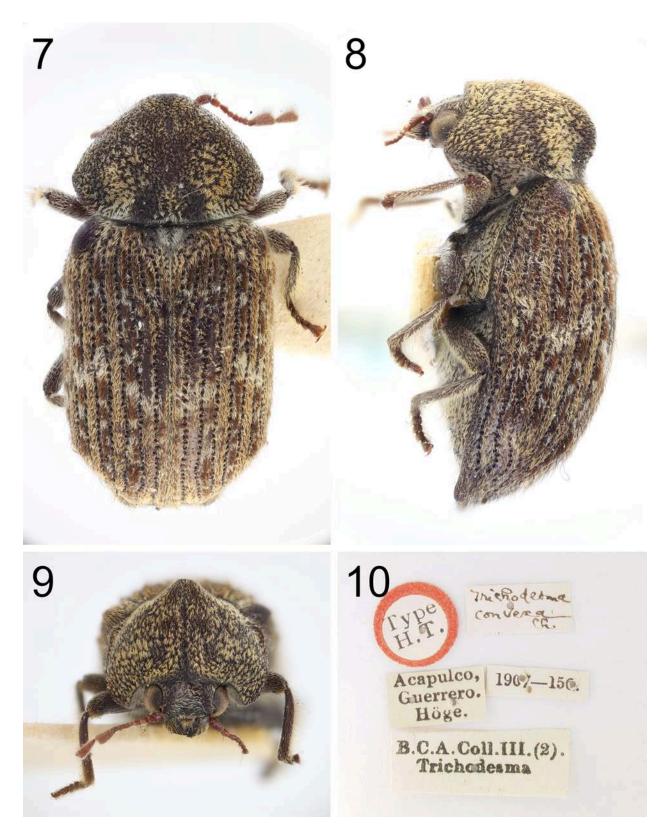
The specimen Gorham's figure is based on is from Almolonga, Mexico, and is from Höge's collection. This specimen, which would be the holotype, should be in the NHMUK as Champion (1913) states "The above description is taken from the two examples in the "Biologia" collection, one of these having been figured by Gorham as *T. imperator*." There is a specimen in the MNHM labeled as the type of both *T. imperator* Gorham and *T. gorhami* Pic. While this specimen is from Almolonga and the "Hoege" collection, it does not match Gorham's figure nor Champion's description and may be mislabeled. This specimen, figured here, is the putative type from the MNHM and has the following labels "Almolonga, / Mexico. / Hoege. // [handwritten] type // [handwritten] gorhami / Pic // Museum Paris / Coll. M. Pic // [on red] SYNTYPE // SYNTYPE / *Trichodesma* / *imperator* Gorham, 1883 // SYNTYPE / *Trichodesma* / *gorhami* Pic, 1901 // MNHN, Paris / EC19799 / [QR code]". Additional research into the identity of the specimen figured in Gorham (1883) is ongoing.

Trichodesma imperator (Laporte de Castelnau 1838: 58)

This species has no type and the description does not allow for confident determination. Gorham (1883) comments on "*Hedobia imperator*" occurring in Salle's collection and provides a figure. This specimen, in addition to others seen by Gorham, are not *T. imperator* as understood by Pic (1901) and Champion (1913). The species



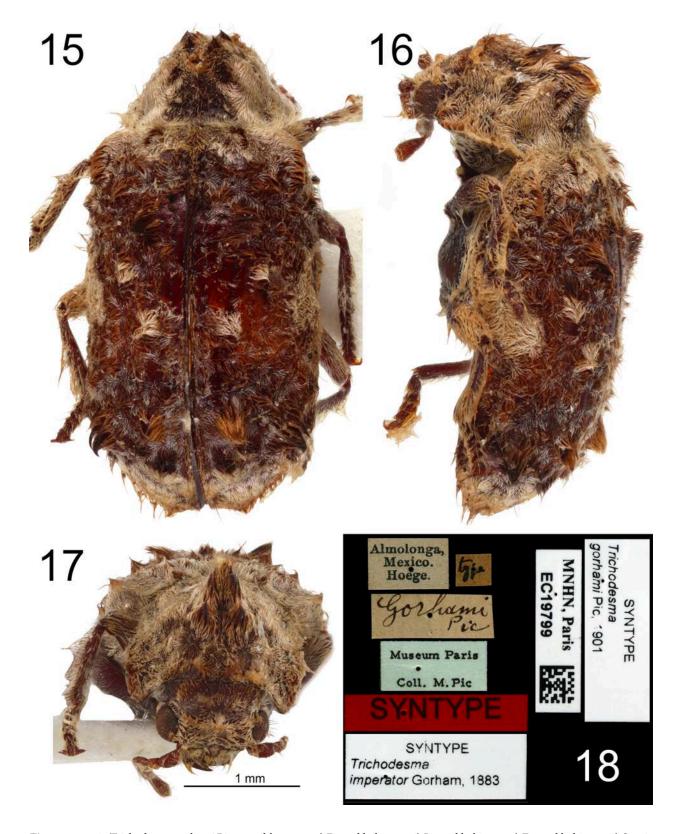
Figures 3–6. *Trichodesma beyeri* Fall, lectotype. 3) Dorsal habitus. 4) Lateral habitus. 5) Frontal habitus. 6) Specimen labels.



Figures 7–10. *Trichodesma convexa* Champion, holotype. 7) Dorsal habitus. **8)** Lateral habitus. **9)** Frontal habitus. **10)** Specimen labels.



Figures 11–14. *Trichodesma discigera* Champion, holotype. **11**) Dorsal habitus. **12**) Lateral habitus. **13**) Frontal habitus. **14**) Specimen labels.



Figures 15–18. *Trichodesma gorhami* Pic, possible type. **15**) Dorsal habitus. **16**) Lateral habitus. **17**) Frontal habitus. **18**) Specimen labels.

figured in Gorham (1883) was given a new name by Pic, *T. gorhami*, and was discussed by Champion as being undiagnosable. Laporte's description is as follows: "Anobium imperator. – Long. 3 lig. Larg. 1 ½ lig. Granuleux, brun, couvert d'un duvet blanc; corselet avec une strie longitudinale et présentant au milieu une forte élévation de couleur jaune; élytres couvertes de gros points enfoncés, brunes avec quelques lignes longitudinales; sur la base un trait sinueux au milieu et une large bande transversale en arriére formée d'un duvet blanc; dessous du corps noir et velu, ainsi que les pattes; antennes rougeâtres. Mexique. De la belle collection de M. Gory." Additional research into the identity of this species is ongoing and a potential neotype may be designated with a revision of the Mexican fauna.

Trichodesma mexicana Pic 1901: 93

Figures 19-22

Although the specimen figured here is labeled with syntype labels, Pic (1901) does not specify how many specimens he had available, the description is written using a singular tense, indicating there was one specimen. The specimen available, presumably the holotype, is labeled as follows "Sierra de / Durango // [handwritten] Mexique // [handwritten] mexicana / Pic // [handwritten] type // [on red] TYPE // [handwritten] L. Ech. no 204 / 1901 p. 93 // Museum Paris / Coll. M. Pic // [on red] SYNTYPE // SYNTYPE / Trichodesma / mexicana Pic, 1901 // MNHN, Paris / EC19798 / [QR code]"; deposited in the MNHN.

Trichodesma nancyae Schnepp, new species

Figures 23–28

Two specimens were seen by the author, the holotype with the following labels "MEXICO: Guerrero / 10 km. N Chilpancingo / 22 July 1987 / R. Turnbow // [on red] HOLOTYPE / *Trichodesma nancyae* / Schnepp, 2023"; deposited in the FSCA.

Trichodesma scripta Champion 1913: 136

Figures 29–32

Two specimens were seen by Champion, with no holotype specified. Lectotype, **here designated**, with the following labels "Atoyac, / Vera Cruz. / May. H.H.S. // 1907–156 // B.C.A.Coll.III.(2). / Trichodesma // Tr. Ent. Soc. L. / 1913. / det. Champion // Sp. figured. // [handwritten] Trichodesma / scripta, Ch. // [circle outlined in red] Type // [on red] LECTOTYPE / *Trichodesma scripta* / Champion Designated by / Schnepp, 2023"; deposited in the NHMUK.

Trichodesma sellata Horn 1894: 386

Figures 33–36

One specimen, holotype, was seen by Horn with the following labels "El Taste. // 10,152 // [handwritten] No 31.E. // Horn. / Type // California Academy / of Sciences / Type / No. [handwritten] 41 // [on red] HOLOTYPE / sellata"; deposited in the CAS.

Trichodesma sublineata Champion 1914: 667

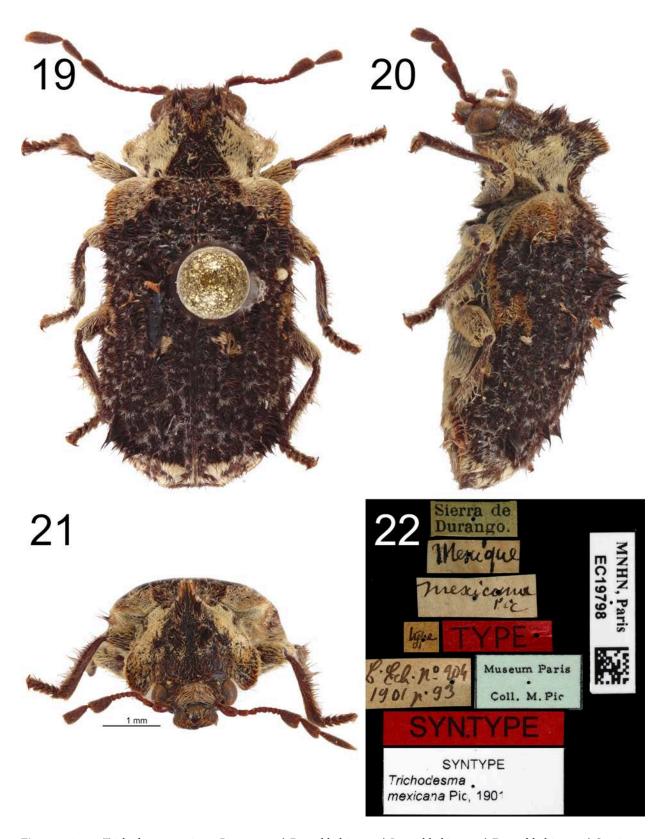
Figures 37-40

One specimen, holotype, was seen by Champion with the following labels "Acapulco, / Guerrero. / Höge. // 1907–156. // B.C.A.Coll.III.(2). / Trichodesma // [handwritten] Trichodesma / sublineata, Ch. // [circle outlined in red] Type / H.T."; deposited in the NHMUK.

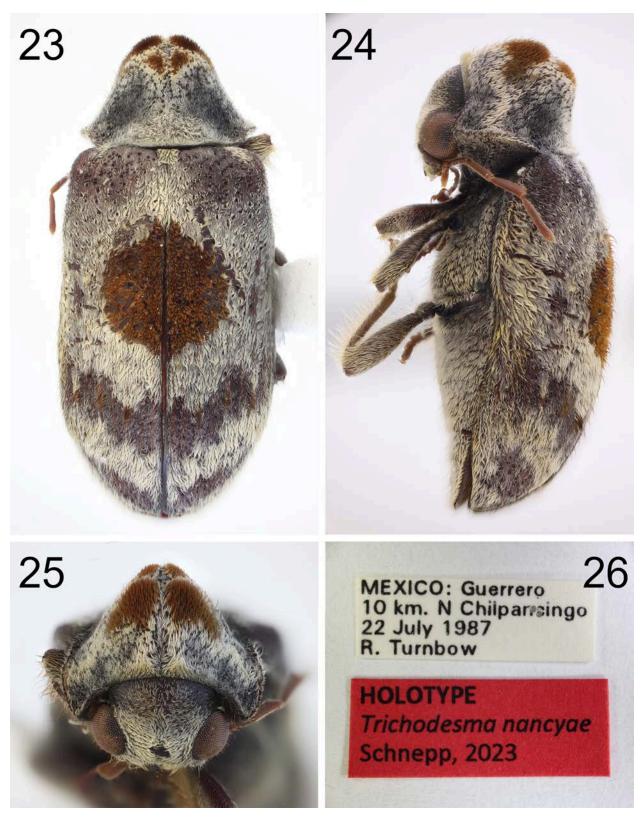
Trichodesma texana Schaeffer 1903: 263

Figures 41-44

Several specimens were seen by Schaeffer, with no holotype specified. Lectotype, **here designated**, with the following labels "[handwritten] Esper. Rch. / Brownsville / VII. Tex. // Brooklyn / Museum / Coll. 1929 // Catal. No



Figures 19–22. *Trichodesma mexicana* Pic, type. 19) Dorsal habitus. 20) Lateral habitus. 21) Frontal habitus. 22) Specimen labels.



Figures 23–26. *Trichodesma nancyae* Schnepp, **new species**, holotype. 23) Dorsal habitus. 24) Lateral habitus. 25) Frontal habitus. 26) Specimen labels.



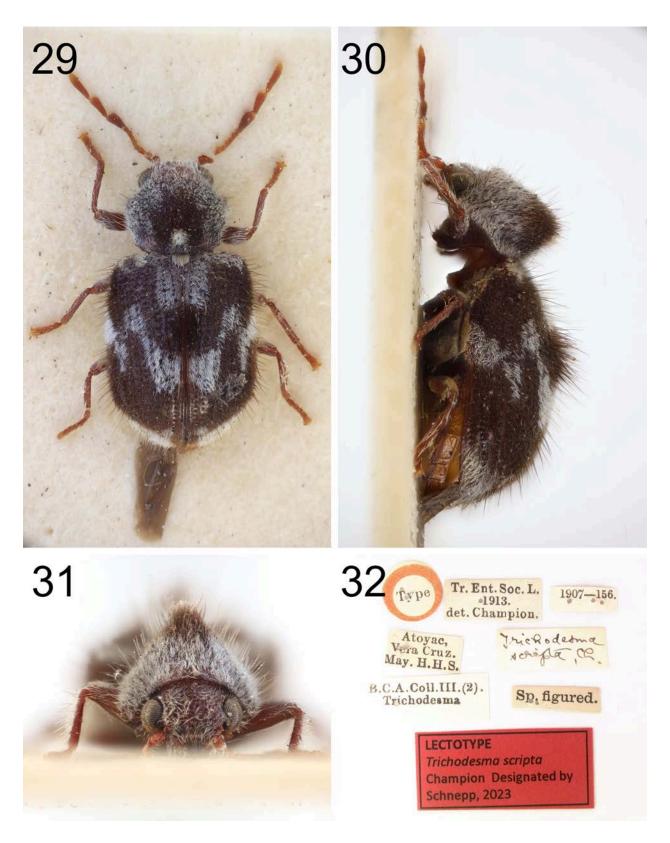
Figures 27–28. Trichodesma nancyae Schnepp, new species, holotype. 27) Ventral habitus. 28) Male genitalia.

/ [handwritten] 703 // [on red] Cotype / No. [handwritten] 42595 / U.S.N.M. // Type // [handwritten] T. texana / Schaeffer / Type. // USNMENT [QR code] 01474029 // [on red] LECTOTYPE / *Trichodesma texana* / Schaeffer Designated by / Schnepp, 2023"; deposited in the USNM.

Trichodesma tricristata Champion 1913: 133

Figures 45–48

One specimen, holotype, was seen by Champion with the following labels "Orizaba // Mexico. / Salle Coll. // 635 // B.C.A.Coll.III.(2). / Trichodesma // Tr. Ent. Soc. L. / 1913. / det. Champion. // [handwritten] Hedobia / imperator, Cast. / [illegible] Sallé. // [handwritten] Trichodesma / tricristata Ch // [circle outlined in red] Type"; deposited in the NHMUK. This specimen was one of several considered *T. imperator* by Gorham but does not match the figure in Gorham (1883) and was subsequently described and given a name by Champion.



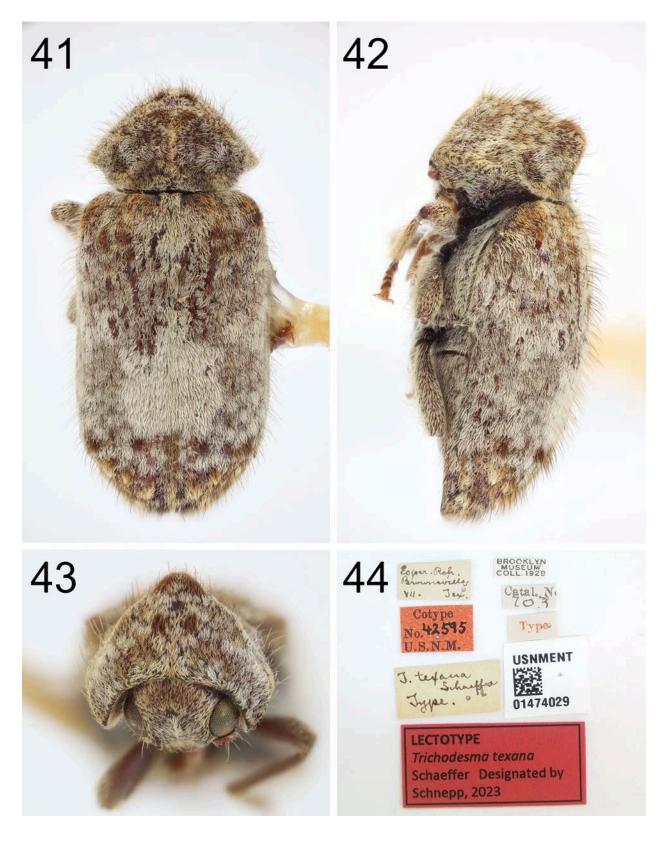
Figures 29–32. *Trichodesma scripta* Champion, lectotype. 29) Dorsal habitus. 30) Lateral habitus. 31) Frontal habitus. 32) Specimen labels.



Figures 33–36. *Trichodesma sellata* Horn, holotype. **33)** Dorsal habitus. **34)** Lateral habitus. **35)** Frontal habitus. **36)** Specimen labels.



Figures 37–40. *Trichodesma sublineata* Champion, holotype. **37**) Dorsal habitus. **38**) Lateral habitus. **39**) Frontal habitus. **40**) Specimen labels.



Figures 41–44. *Trichodesma texana* Schaeffer, lectotype. **41)** Dorsal habitus. **42)** Lateral habitus. **43)** Frontal habitus. **44)** Specimen labels.



Figures 45–48. *Trichodesma tricristata* Champion, holotype. **45**) Dorsal habitus. **46**) Lateral habitus. **47**) Frontal habitus. **48**) Specimen labels.

Trichodesma w-album Gorham 1883: 200

Figures 49-52

One specimen, holotype, was seen by Gorham with the following labels "Sinanja, / Vera Paz. / Champion. // B.C.A.Coll.III.(2). / Trichodesma // \bigcirc // Type // [circle outlined in red] Type // [handwritten] Trichodesma / w-album / Gorham"; deposited in the NHMUK.

Acknowledgments

I thank Lily Deeter and Gareth Powell for providing comments that improved the manuscript. I also thank Christophe Rivier and Antoine Mantilleri for type images from the MNHN and the Florida Department of Agriculture and Consumer Services – Division of Plant Industry for their support in this work.

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Received December 1, 2023; accepted December 7, 2023. Review Editor Paul Skelley.



Figures 49–52. *Trichodesma w-album* Gorham, holotype. **49**) Dorsal habitus. **50**) Lateral habitus. **51**) Frontal habitus. **52**) Specimen labels.