

Revised Supplement To Lepidoptera of North America

14. Geometroidea

Geometridae: Larentiinae: Eupitheciini (Part)



Contributions of the
C.P. Gillette Museum of Arthropod Diversity
Colorado State University

Cover illustration: *Eupithecia ravocostaliata* Packard, photo by Clifford D. Ferris

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Revised Supplement To Lepidoptera of North America

14. Geometroidea

Geometridae: Larentiinae: Eupitheciini (Part)

by

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January 15, 2022

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C.P. Gillette Museum of Arthropod Diversity

Colorado State University

Errata for September 15, 2018 Edition

Page i, line 1. Delete entry. The Abstract was inadvertently omitted. An updated version appears below.

Page viii, correct spelling to read: *multiscripta*.

Page ix, correct spelling to read: *sabulosata*.

Page 8, line 6, correct spelling to Packard.

Page 10, first paragraph. *Eupithecia chlorofasciata* Dietze was omitted in the list of species not included.

Plate 5, an everted vesica image for *E. placidata* was inadvertently placed instead of the image for *E. longidens*. Plate 241 is the corrected plate. Plate 242 is an updated Plate 24.

Abstract

A review of the North American species in the Geometridae: Larentiinae: Eupitheciini (*Eupithecia*, *Nasusina*, and *Prorella*) is presented. A series of species plates arranged in phylogenetic order follows a limited discussion of this group. Each plate illustrates both sexes (when known) of the adult moths and their associated genitalia. Minimal accompanying text provides the following information: literature citation for the original description; type locality; location of the type; biology when known with flight period; geographic distribution; and key diagnostic characters. A comprehensive annotated bibliography is included. The 2018 edition includes ix + 22 pp. + 191 plates and will not be revised.

This Revised Supplement provides 48 additional plates with associated text as appropriate, and replaces the previous 2019 Supplement. Two new species from New Mexico are described: *Eupithecia vargoi* and *E. longispinata*. The additional plates are not in phylogenetic order, but in sequence as the associated specimens were obtained, dissected and photographed.

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Introductory Notes

Rather than revising the 2018 monograph, which would require reorganization of plate numbers and other editorial changes, it was decided in 2019 to issue a Supplement to include new material. Included were 35 new plates arranged in the order in which the additional study material became available. It has now been decided to issue a new Revised Supplement to replace the 2019 publication. There are 16 additional new plates and two new species from New Mexico are described. Thirty-eight *Eupithecia*, two *Nasusina* and one *Prorella* species are now represented.

The new material includes additional plates of species previously presented and the following additional species: *cretata* and *chlorofasciata*, *longispinata* (new species) and *vargoi* (new species). Study material for the following species has yet to be obtained: *Eupithecia pusillata* (see plate 188 in Ferris, 2018 for comments) *litoris*, *albigrisata*, *ammonata*, *olivacea*, *vitreotata*, *dichroma*, *plumasata*, *succenturiata*; *Nasusina mendicata*; *Prorella emmendonina*.

Eupithecia chlorofasciata (Hulst) [Plate 226] was not included in the 2018 edition. No discussion appears in McDunnough's 1949 revision of the *Eupithecia*. This taxon remains somewhat of an enigma. In his original description, Dietze clearly indicates the green color. He had two specimens from "Georgia." The original description does not indicate a designated holotype, nor is deposition location indicated [see comment from Cassino & Swett, below]. Specimens appear to be rarely collected and museum material is very limited. A male was not available for study when preparing this Supplement. The female genitalia indicate close affiliation with *Eupithecia miserulata* Grote [Plates 29, 30 in 2018 monograph]. I have been able to examine fresh specimens by photograph, that clearly show the green color suggested by the species name. The green color appears only in specimens collected in the spring and to date at latitudes below 39°N. Under *miserulata* on the BOLD web site are three photos showing the green coloration. The specimens were collected by Mark Dreiling in the spring in Bartlesville, Oklahoma. It's possible that the green coloration is merely a spring form of *miserulata* in regions where there are two annual generations. More study material is necessary, and

then some careful barcoding work on the *chlorofasciata* phenotype vs. *miserulata*. If *chlorofasciata* clearly codes out as a separate species, then a neotype or lectotype will need to be designated.

In Cassino, S. E. & Swett, L. W., 1922, Some new Geometridae, *The Lepidopterist*, 3(11): 179–180, the authors state:

“A recent letter from Dr. Dietze to the editor says that the type of *chlorofasciata* has been destroyed by anthrenus, and that it was probably not a *Eupithecia*. *Subvirens*, Dr. Dietze says, was probably a *chloroclystis*. The type of *suspiciosata* is now in the Zoological Museum in Berlin, and a drawing of it is in the Casino collection.

It may be best to strike *subvirens* and *chlorofasciata* from our lists of *Eupithecia*.”

Based on the plate that accompanies the original description of *chlorofasciata*, the moth is clearly a *Eupithecia*. As for *subvirens*, McDunnough (1949, p.553; figs. 14, 15; text fig. 2C genitalia) discussed this species in some detail.

Courtesy of Jim Vargo, a photo of a female *chlorofasciata* is shown below. The green has faded somewhat to yellowish-green. The specimen was collected in Perry Co., Indiana on 15 April, 2013. The genitalia agree with those shown in Plate 226.



Description of Two New Species from New Mexico

During the summer of 2021, two new *Eupithecia* species were discovered respectively in Grant (June) and Otero (August) counties, New Mexico. They are now described.

Eupithecia vargoi, New Species, Ferris, 2022

Plate 235

Diagnosis. In habitus adults this species resemble those of *persimulata* (Plate 54) and *prostrata* (Plate 53). Species separation is by the male genitalia (females are currently unknown). The uncus is simple with a decurved hooked tip, whereas in *persimulata* and *prostrata* the uncus tip is bifid. The inflated vesica of the phallus has a large diverticulum and is more heavily armed with robust spines, differing from the other two species.

Description. *Wings.* Ground color of the wings a medium gray, slightly lighter ventrally. There are three indistinct darker post-median irregular spot-lines on the DFW and two indistinct lines on the DHW. Both wings display a dark discal spot, smaller and less prominent on the HW. The dorsal markings appear ventrally, but muted. *Head.* White scales between the antennae becoming mixed dark gray and white on the frons. Palpi vertically broad, length about 2/3 the eye width, very dark gray centrally with white-tipped scales along the outer edges. Antennae very weakly ciliate. *Legs.* Clothed with almost black, dark gray, and pale grayish-white scales; dark rings at tarsal joints. *Abdomen.* All specimens dissected prior to recording characters. *Male genitalia.* Valves broad and rounded apically. Uncus slender with recurved apical hook. Plate U-shaped, incised to about 60% of the overall length, with basal “flanges.” Tines swollen below apical points. Vesica heavily armed as follows: four robust long broad spines, one with an auxiliary narrow brush; one large sickle-like chitinous piece; one small chitinous piece at base. One prominent large broad diverticulum. One smaller and narrow diverticulum.

Type material. This species is described from 3 specimens. The holotype is deposited in the C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Ft. Collins, CO. Two paratypes are in the author’s collection. The type locality is in the

Black Range, vic. Iron Creek, Hwy. 152, 7200' (2196m), 32.9085N, -107.808W, Grant Co., New Mexico, 10 August, 2021, James T. Vargo collector.

Biology and Distribution. The biology is unknown and the distribution is restricted to the type locality.

Etymology. It gives me pleasure to name this species after Jim Vargo, an indefatigable moth collector who manages to find heretofore unknown species.

Eupithecia longispinata, New Species, Ferris, 2022

Plates 233, 237

Diagnosis: In habitus adults resemble the similar form of *Eupithecia assimilata*, (Plate 96) with the prominent black cell spots and otherwise obscure maculation, but are slightly smaller in wing expanse. The genitalia, however, are totally different. Species separation is by the armature of the male genitalia. There is a prominent and distinctive long and slender slightly curved spine, with a fan of smaller spines at its base. The genitalia of the presumed female are similar to those of *annulata*, (Plate 87) but manifest a chitinous plate in the corpus bursae and a moderately large diverticulum from the fundus.

Description. *Wings.* The ground color is a medium gray-brown. There is DFW prominent black cell spot and a squarish dark spot along the costa above and on either side of the cell spot. The cell spot on the DHW is small but prominent. Additional maculation on both wings is obscure. There is a narrow weak post-median band on the DHW. On the DFW, there is an obscure submarginal row of pale spots between the veins. The fringes are uniformly grayish-brown. The putative females are slightly larger and paler than the males, but otherwise similar. Ventrally the wings are paler in color with the dorsal maculation, such that it is, is reproduced. *Head.* Pale gray scales between and behind antennae, frons brown. Palpi short (< 50% of eye diameter), narrow, delicate, gray with paler tips. *Antennae.* Males, pale brown, essentially simple with ventral short sensilla. Females, simple. *Legs.* Pale grayish-brown scales; tarsi ringed with brown scales. *Thorax.* Dorsally brown. *Abdomen.* First segment pale grayish-brown; segments 2–7 essentially brown; terminal segments pale grayish-brown. *Male genitalia* (Plate 236).

Valves of medium width and rounded apically. Uncus tip bifid with short, closely spaced hooks. Plate roughly X-shaped, widening both anteriorly and basally; incised to midsection; tines of uniform width with sharp apical points; base concave. Vesica armed as follows: one long slender curved spine with fan of five shorter (about 1/4 length of long spine) narrow spines basally; one broad robust pointed spine about 1/3 length of long spine with associated less robust “shadow” spine; one irregular U-shaped chitinous piece about length of the latter; one small chitinous irregular inclusion. One long narrow diverticulum projects from base of the longest spine. *Female genitalia* (Plate 237). Similar to *annulata* (Plate 87), but differing as follows: the inclusion of a large chitinous plate bordered on one side by a vertical row of spines in the corpus bursae; the ductus seminals is more robust; the moderately large diverticulum extends from the bottom of the fundus, rather than from the side; a clear and thick membrane surrounds the corpus bursae; membranous ostium, very short membranous ductus bursae, colliculum lightly sclerotized. Irregular patches of dense spines clothe the corpus bursae.

Type material. This species is described from 8 male specimens. The holotype is deposited in the C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Ft. Collins, CO. Two male paratypes are in the author’s collection, and five male paratypes are in the James T. Vargo collection. The type locality is 32.808N, –105.649W, 8100’ (2500m), Sacramento Mts., Otero Co., New Mexico. *Comment:* No female specimens of *longispinata* were collected with the males at the type locality. Two females were collected at a site west of the type locality and at higher elevation. Collection locality data are shown on Plate 237. Based on habitus, these specimens are presumed to be females of *longispinata*. Because speciation is uncertain, they have not been designated as paratypes.

Biology and Distribution. This moth is apparently a high elevation species. The biology is unknown and the known distribution is restricted to the Sacramento Mts., Otero Co., New Mexico, at elevations above 8000’ (2440m). The habitat at the site where the females were collected is shown on the following page.

Etymology. The species name is chosen because of the long spine attached to the vesica of the phallus.



Sacramento Mts., Otero Co., New Mexico habitat, August 26, 2021

***Eupithecia longidens kerrvillaria*, Cassino & Swett, 1924**

Plate 240

This taxon was mentioned briefly in the **Note** on Plate 5. I was recently able to obtain a male specimen and additional distribution data courtesy of Chuck Sexton, Austin, Texas. The male genitalia are consistent with those of *E. longidens* (Plate 241) supporting McDunnough's (1949, p. 549) treatment of *kerrvillaria* as a subspecies of *longidens*. The true placement of *kerrvillaria* remains to be determined by barcoding when additional material becomes available.

The reader should note that an everted vesica image for *E. placidata* was inadvertently placed in Plate 5 instead of the image for *E. longidens*. Plate 241 is a corrected plate to replace the original Plate 5. The other male genitalia components shown are correct, but the images of the capsule and plate have been redone for Plate 241.

The *kerrvillaria* phenotype has now been recorded from 16 counties in Texas (Bandera, Bell, Bexar, Bosque, Comal, Edwards, Gillespie, Hamilton, Hays, Kendall, Kerr [the type locality], Kimble, Mills, Real, Travis, Williamson) and one county in Oklahoma (Cleveland Co.). The known distribution for the moth is central Texas northward to Oklahoma. Adult occurrence is bimodal with an early flight from January to May (peaking in March) and a late flight from August to December (peaking in October). The biology of this moth is unknown, but it inhabits areas dominated by juniper-oak woodlands and savannas.

Acknowledgments

I wish to thank Paul A. Opler (GMAD) who provided specimens for examination, Jim Vargo, Mishawaka, IN for photos and data, and Steve Nanz, Brooklyn, NY for directing me to the Cassino & Swett article. Chuck Sexton , Austin, TX kindly provided Texas material for my examination.

Additional Literature Cited

For those users of this site who might wish to check published original descriptions that appear in older journals, the Biodiversity Heritage Library is an excellent resource: www.biodiversitylibrary.org.

Dietze, K. von., 1872. Beitrage zur Kenntniss der arten des Genus *Eupithecia* Curt. *Stettiner Entomologische Zeitung* 33:184–204.

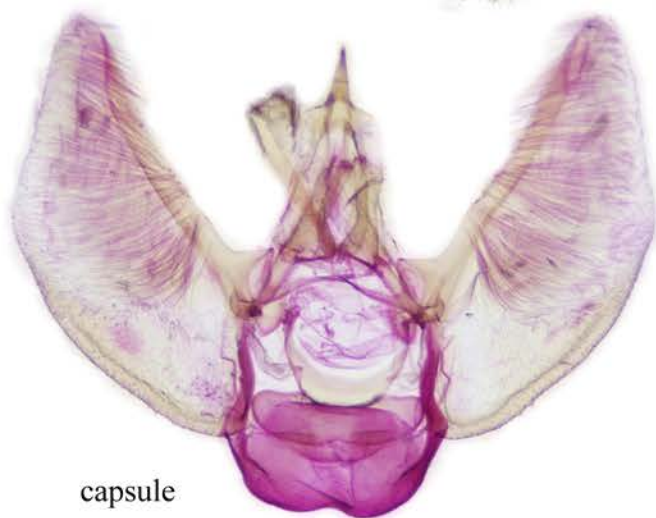
Ferris, C. D., 2018. Lepidoptera of North America 14. Geometroidea, Geometridae: Larentiinae: Eupitheciini (Part). *Contributions of the C. P. Gillette Museum of Arthropod Diversity, Colorado State University*. ix + 22 pp. + 191 plates.

——— 2019. Supplement to Lepidoptera of North America 14. Geometroidea, Geometridae: Larentiinae: Eupitheciini (Part). *Contributions of the C. P. Gillette Museum of Arthropod Diversity, Colorado State University*. iii + 22 pp. + 35 plates.

McDunnough, J. H., 1945. Results from an examination of geometrid types in the Cambridge Museum of Comparative Zoology. *The Canadian Entomologist* 77: 62–68.

Eupithecia matheri Rindge, 1985

male



capsule



plate



phallus,
vesica
everted

Eupithecia bryanti Taylor, 1906

female

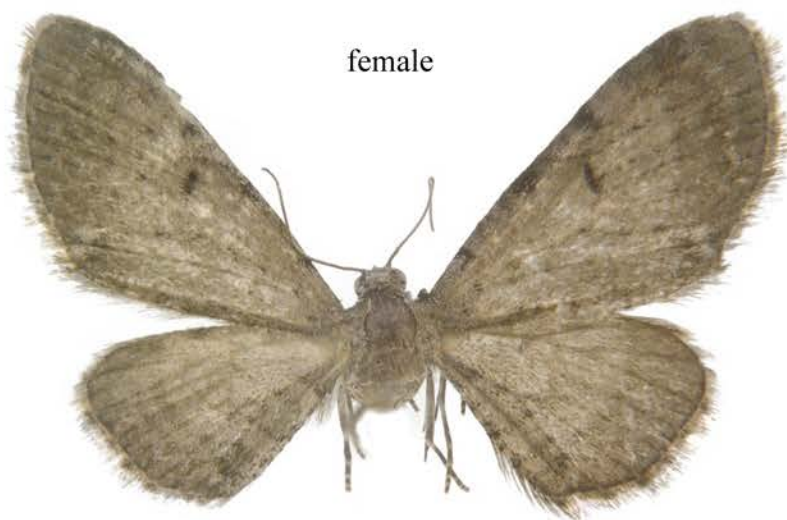


genitalia

Canada, Ontario, Rowan Hills area, 16 June, 2018, leg. J. Troubridge.

***Eupithecia strattonata* Packard, 1873**

female



genitalia

Eupithecia sierrae (Hulst, 1896)

females

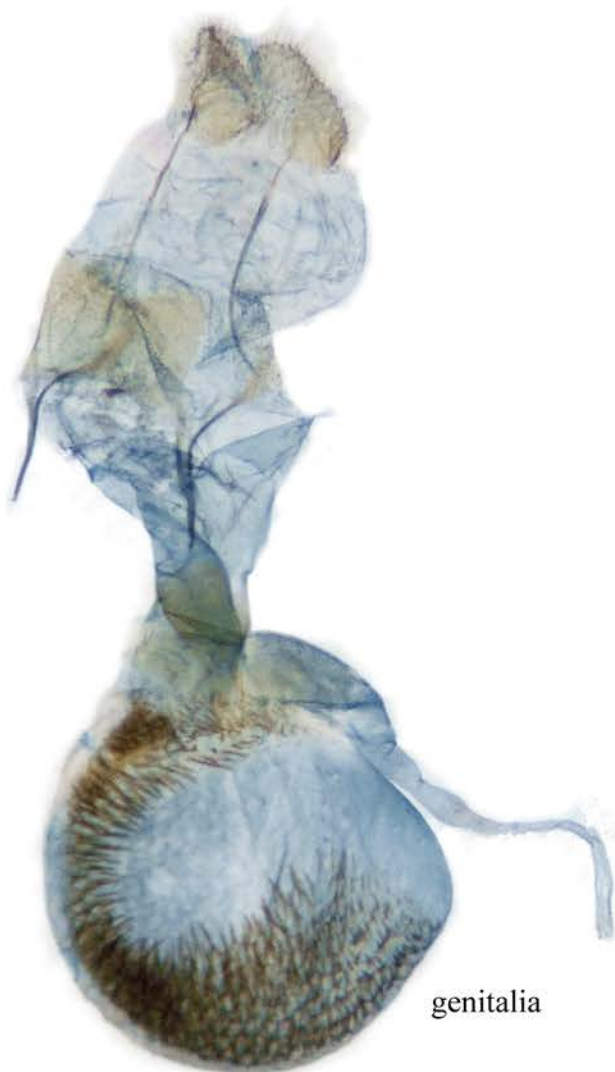


Larimer Co., Colorado



Coconino Co., Arizona

J. S. Nordin collector



genitalia

Eupithecia woodgatata (Cassino & Swett)

males

15 mm

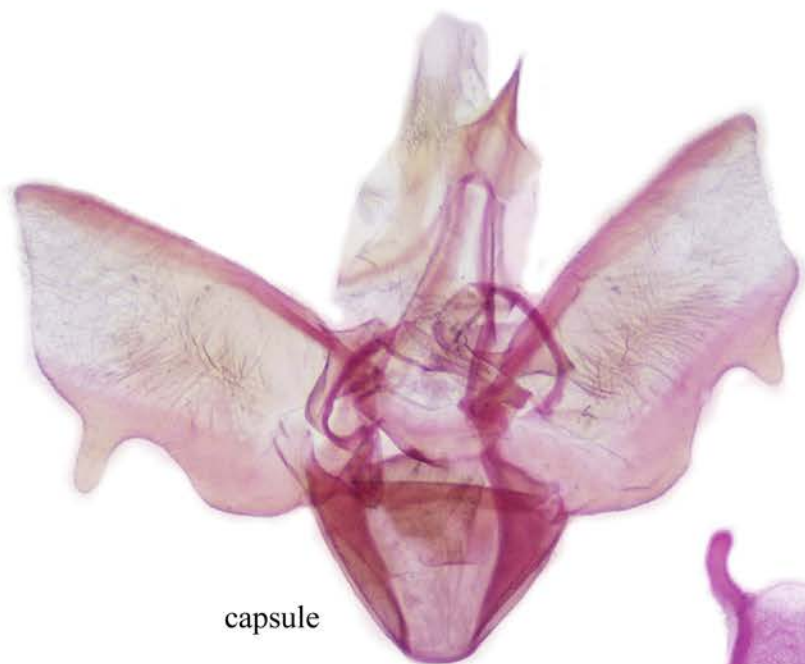


23–24 July, 1987

J. S. Nordin collector

3–4 August, 1987

Wyoming, Albany Co., Sherman Hills East of Laramie, 8200'



capsule



phallus



plate

Eupithecia longidens (Hulst, 1896)

females



Idaho, Bannock Co., 4900', June
J. S. Nordin collector



genitalia

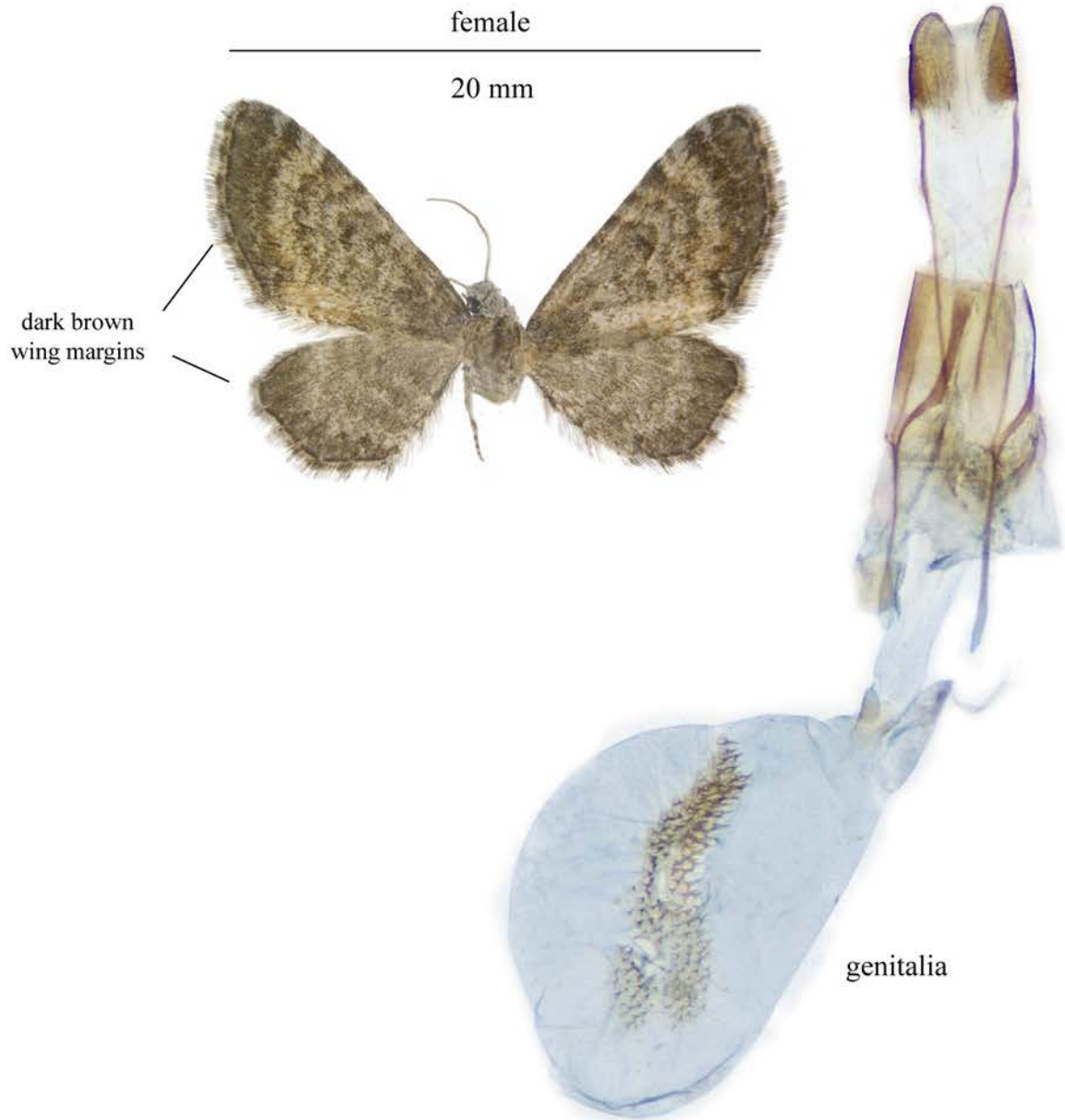
Eupithecia longipalpata Packard, 1876



Colorado, Dolores Co., 7800', 28 May, 2000, J. S. Nordin collector



genitalia

Eupithecia cretata (Hulst, 1896)= ? oddly maculated form of *E. coloradensis* (Hulst, 1896)

Eupithecia cretata was described from a single specimen lacking an abdomen and determined by Hulst to be a male. The type locality is "Colorado" and the holotype is in AMNH. McDunnough (1949) illustrated the type as figure 11, Plate 27. McDunnough (p. 571) provided a brief discussion. The specimen illustrated above was collected on a piñon pine hillside in a black light trap by J. S. Nordin in Larimer Co., Colorado along the east side of Hwy. 287, 5900' on 26 May, 2002. The female genitalia are identical to those of *E. coloradensis*. To my knowledge, the specimen illustrated here is only the second known example of the taxon, which suggests that the moth is a rare or aberrant form of *E. coloradensis*. The specimen is placed in GMAD.

Eupithecia macdunnoughi Rindge, 1952

Enlarged Genitalia Images



phallus



corpus bursae

Eupithecia maestosa (Hulst, 1896)

female



Apache Co., Arizona



genitalia

J. S. Nordin collector

Eupithecia quakerata Pearsall, 1909

female



Apache Co., Arizona



genitalia

J. S. Nordin collector

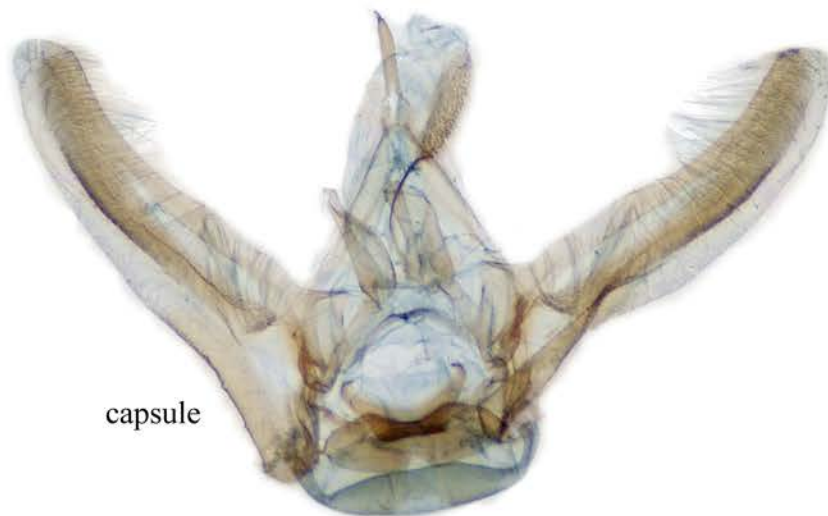
Eupithecia castellata McDunnough, 1944

male

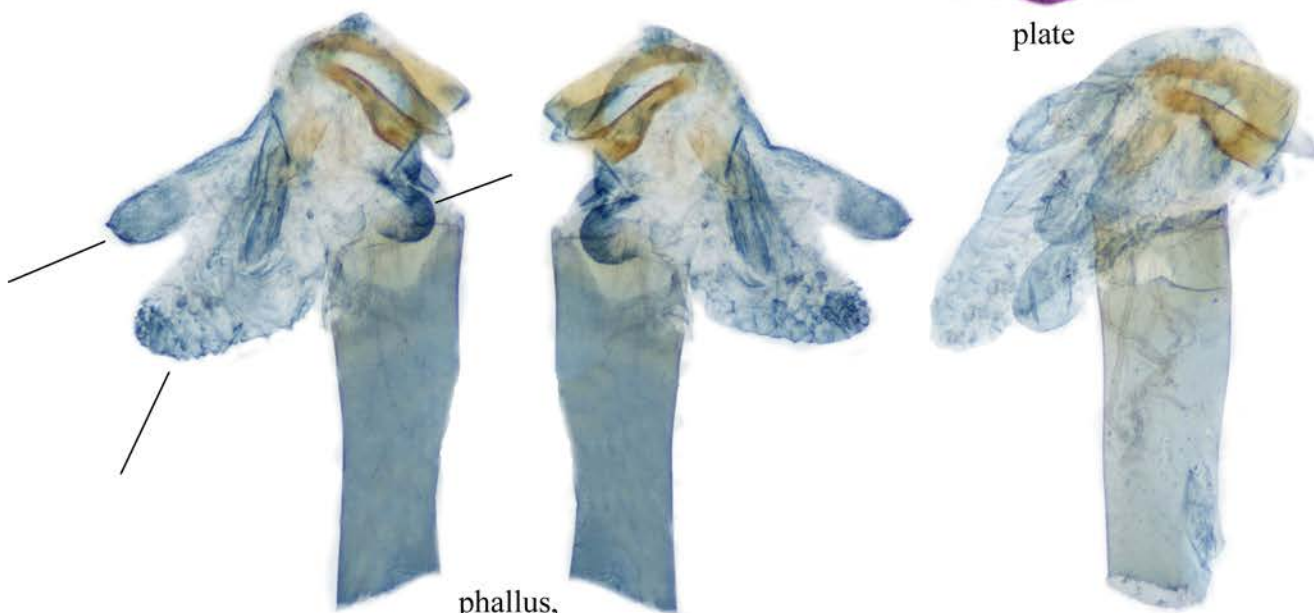
20 mm



capsule



plate

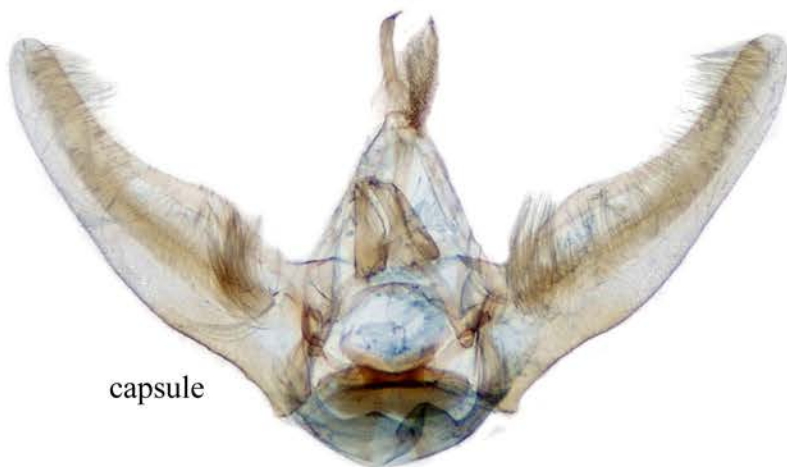
phallus,
vesica everted

Oregon, Lake Co., road 3615 S. end of Bull
Prairie, 6800', 3 July, 1981, at black light,
leg. J. S. Nordin

Eupithecia longipalpata Packard, 1876

male

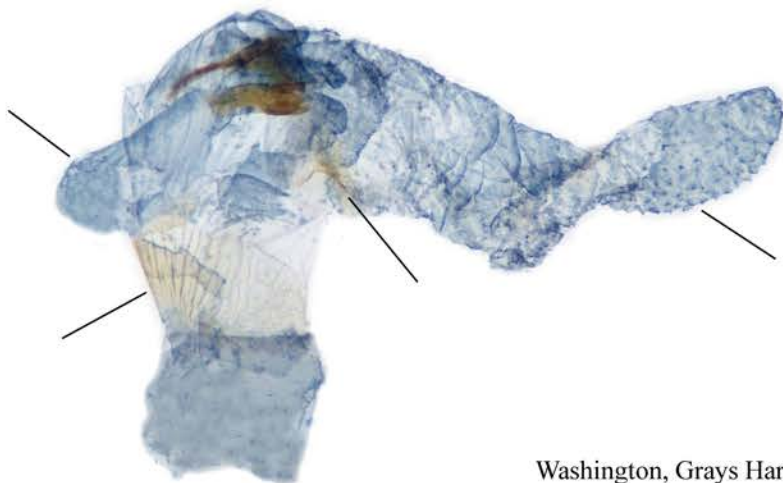
23 mm



capsule



plate



inflated vesica

Washington, Grays Harbor Co., 360', 2 June, 1997

***Nasusina vallis* Ferris, 2004**

female

16 mm



Colorado, Mesa Co., John Brown Canyon,
4966', 7 May, 1996, UV light trap,
leg. J.S. Nordin

genitalia

Eupithecia matheri Rindge, 1985

female

19 mm



New Jersey, Burlington Co.,
10 April, 1980

J. S. Nordin collector

genitalia

Eupithecia regina Taylor, 1906

female

16 mm



genitalia

Kentucky, Woodford Co., Kentucky
River, 650', 4 May, 1981
J. S. Nordin collector

Eupithecia casloata (Dyar, 1904)

female

18 mm



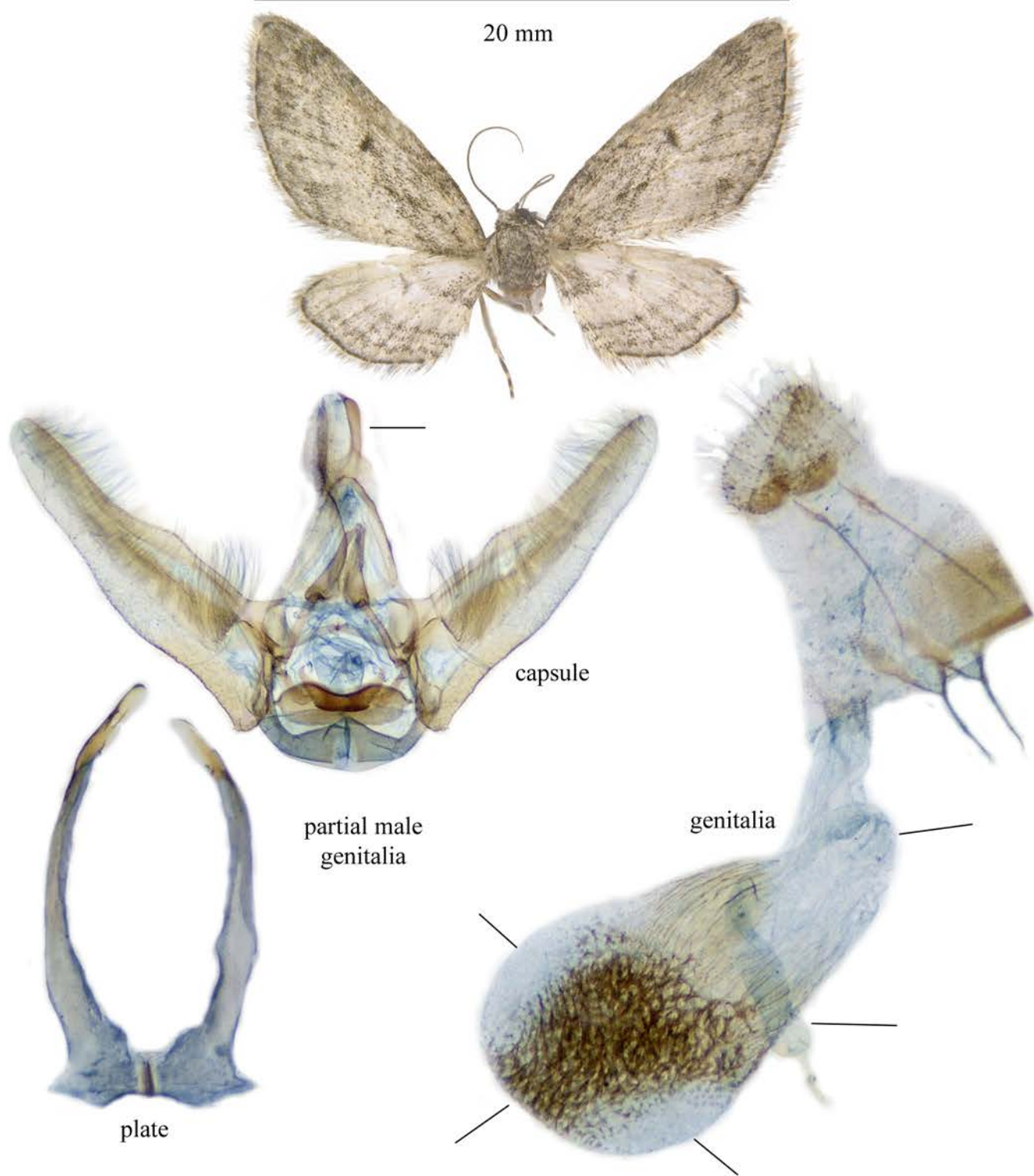
Montana, Glacier Co., 5500', Hwy. 89,
15 miles NW of Kiowa, 19 July, 1967

genitalia (deformed)

Eupithecia longidens (Hulst, 1896)

female

20 mm



Utah, San Juan Co., 7230', 1.5 miles southwest of Monticello, west of Lloyd's Lake, 11 May, 2007

J. S. Nordin collector

Eupithecia interruptofasciata Packard, 1873

female

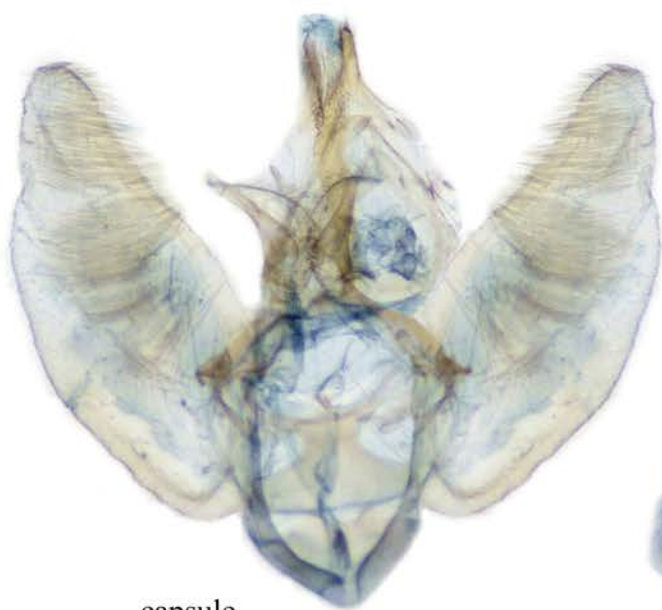


South Dakota, Lawrence Co., 4880',
Iron Creek, T15N, R2E, S30
6 October, 1993
J. S. Nordin collector

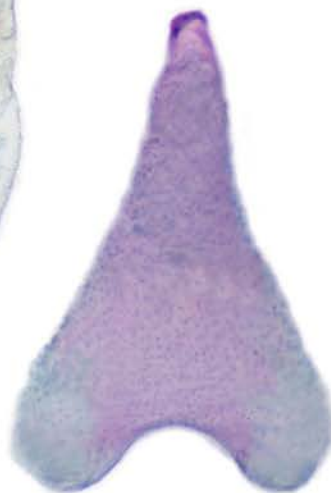
Eupithecia assimilata Doubleday, 1856

male

20 mm



capsule



plate



phallus

Minnesota, Cass Co., Pillsbury State Forest, jct. Hwy. 1 and Orchard Park Lane, 21–22 June, 1984

J. S. Nordin collector

Eupithecia assimilata Doubleday, 1856

female

20 mm



Colorado, Larimer, Co., 5980', T9N, R70W,
S1, east of Hwy. 287, piñon pine hillside,
12 July, 1996, leg. J. S. Nordin



ductus
seminalis

genitalia

Eupithecia cestata (Hulst, 1896)

male

22 mm



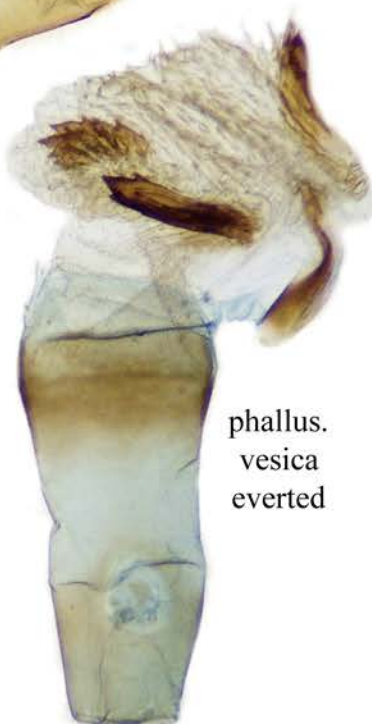
capsule

long, curved,
tapering to
tip
/

phallus

California, Contra Costa Co., Morgan
Territory Road, 1800', 27 March, 1981,
at black light, leg. J. S. Nordin

NOTE: The male specimen illustrated in
Plate 146 is incorrectly identified as
E. cestata. It is apparently a male of
E. cestatoides McDunnough.

phallus.
vesica
everted

plate

***Nasusina minuta* (Hulst, 1896)**

female



Utah, Washington Co., Leads Creek NW of Silver
Reef, 4000', T41S, R74W, S36, 15 May, 1999,
at black light, leg. J. S. Nordin

This is an eastern range extension.

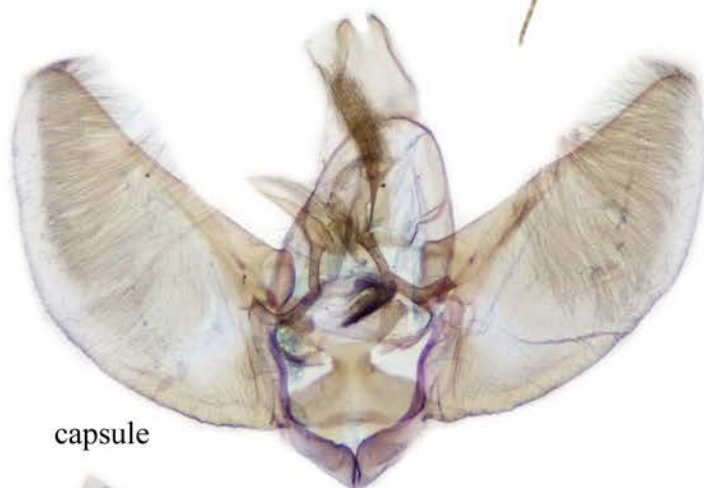


genitalia

Eupithecia cocoata Pearsall, 1908

male

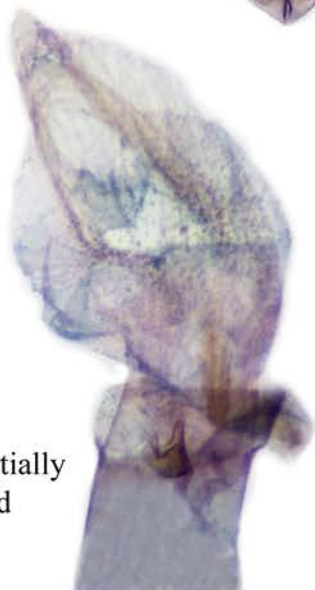
18 mm



capsule



uncus tip, dorsal view

vesica, partially
everted

plate

Kentucky, Mercer Co., Shakers Landing,
Kentucky River, 750', 30–31 May, 1986,
UV light trap, leg. J. S. Nordin

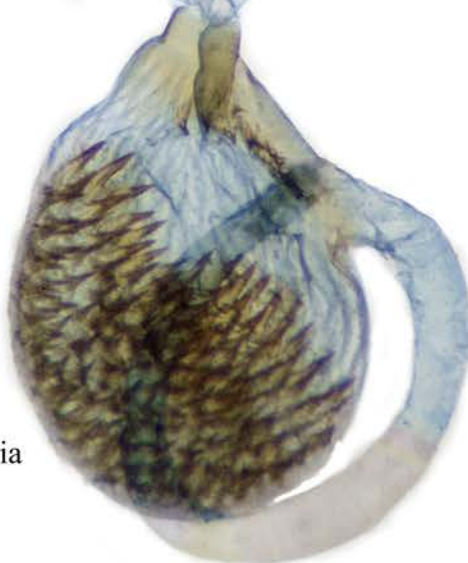
Eupithecia zygadeniata Packard, 1876

female

23 mm



Wyoming, Albany Co., 7468', T15N, R73W,
S1, 22 July, 1998, UV light trap, leg. J. S. Nordin



genitalia

Eupithecia annulata (Hulst, 1896)

female

17 mm



genitalia

Kentucky, Menifee Co., North of Slade,
700', 19 March, 1979, at black light,
leg. J. S. Nordin

Note: *E. annulata* is probably a complex
of species.

Eupithecia mutata Pearsall, 1908 and *E. columbrata* McDunnough, 1940

Female Genitalia



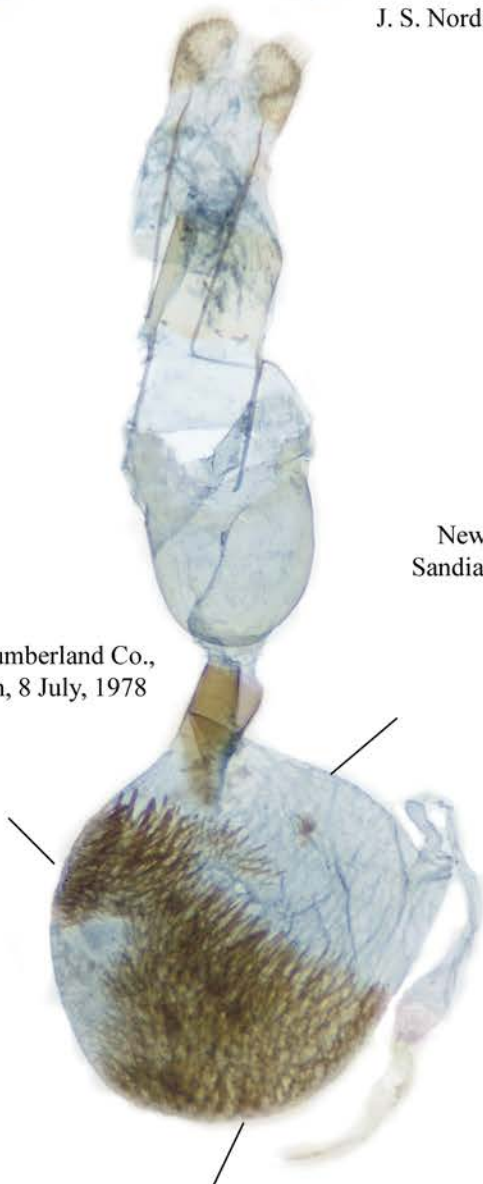
21 mm



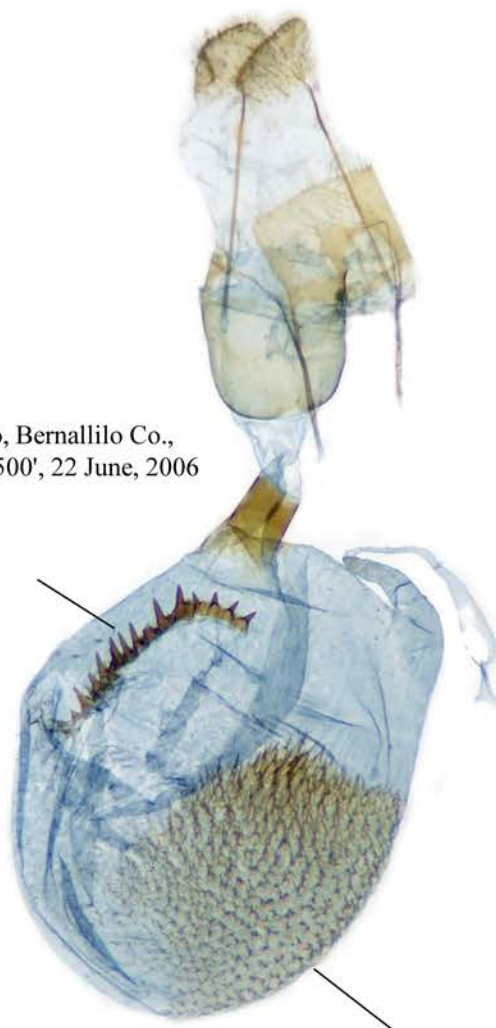
25 mm

J. S. Nordin collector

Maine, Cumberland Co.,
Yarmouth, 8 July, 1978



New Mexico, Bernallilo Co.,
Sandia Mts., 7500', 22 June, 2006



Eupithecia casloata (Dyar, 1904)

female

20 mm



Wyoming, Fremont Co., mile 33.7,
Hwy. 287, 8200', 28 June, 1997
J. S. Nordin collector

genitalia

Eupithecia graefii (Hulst, 1896)

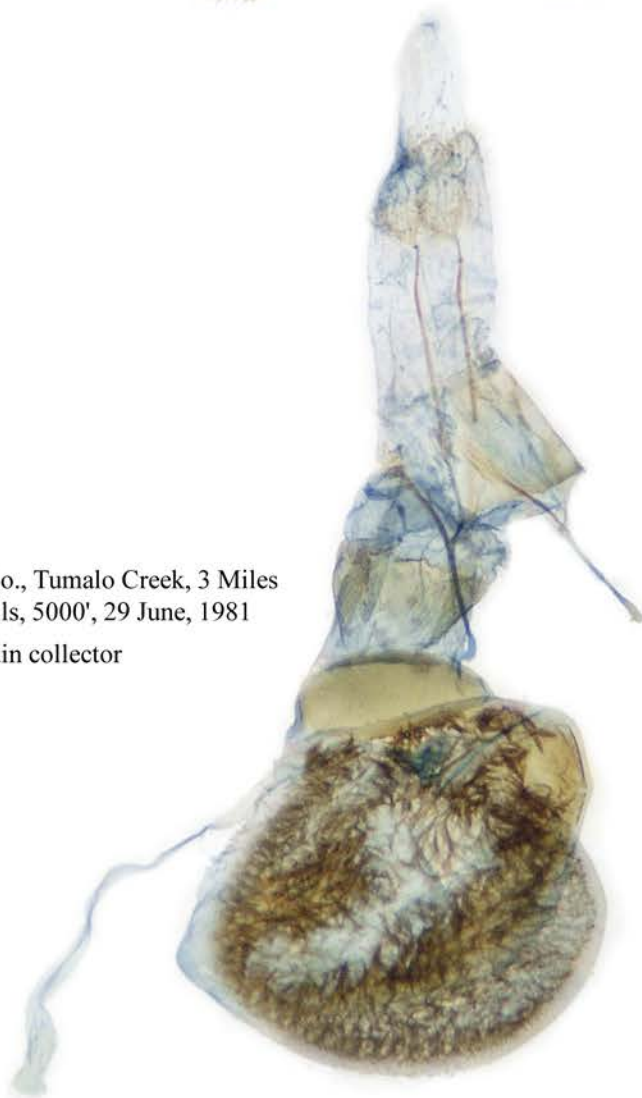
female

24 mm



Oregon, Deschutes Co., Tumalo Creek, 3 Miles
west of Tumalo Falls, 5000', 29 June, 1981

J. S. Nordin collector



genitalia

Eupithecia gelidata Möschler, 1860

male



female

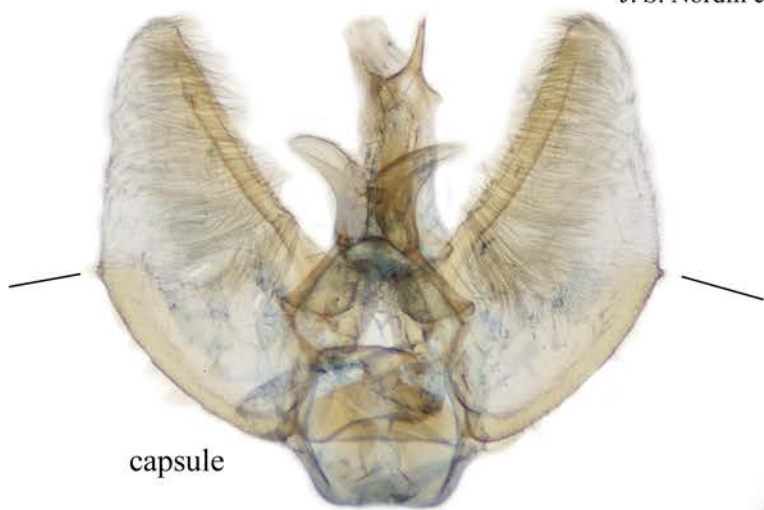


Wyoming, Fremont Co., 20 June, 2001

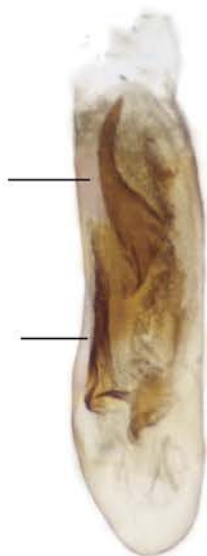
Wyoming, Albany Co., 22 June, 1992

J. S. Nordin collector

capsule



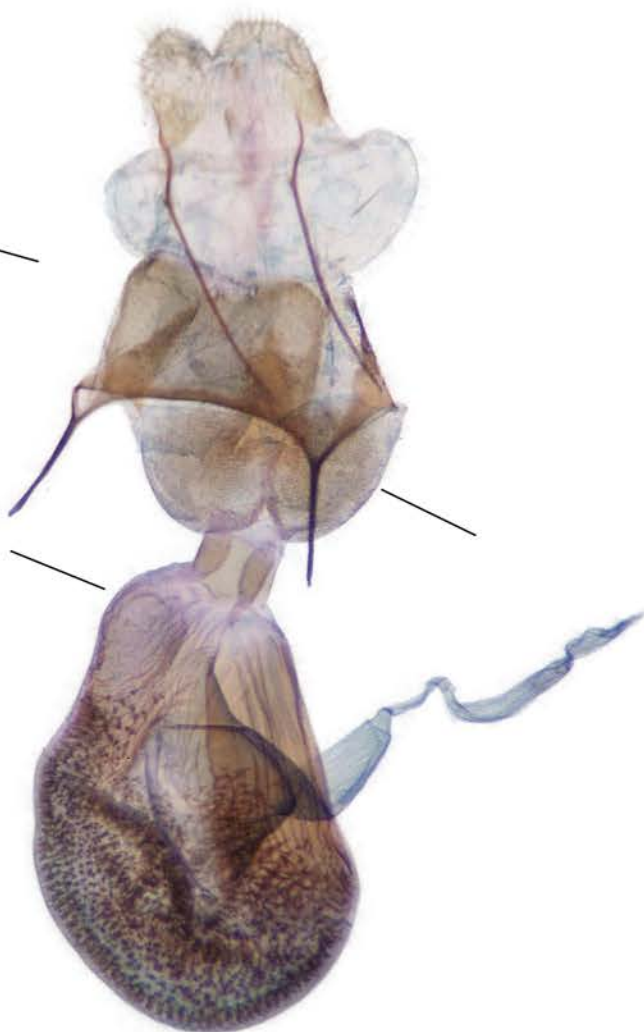
phallus



plate



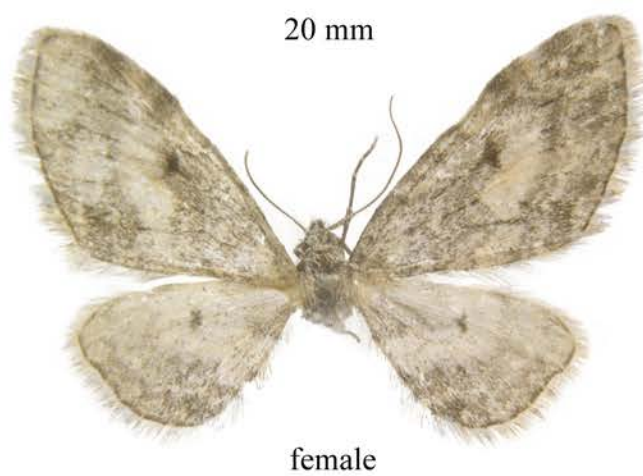
genitalia



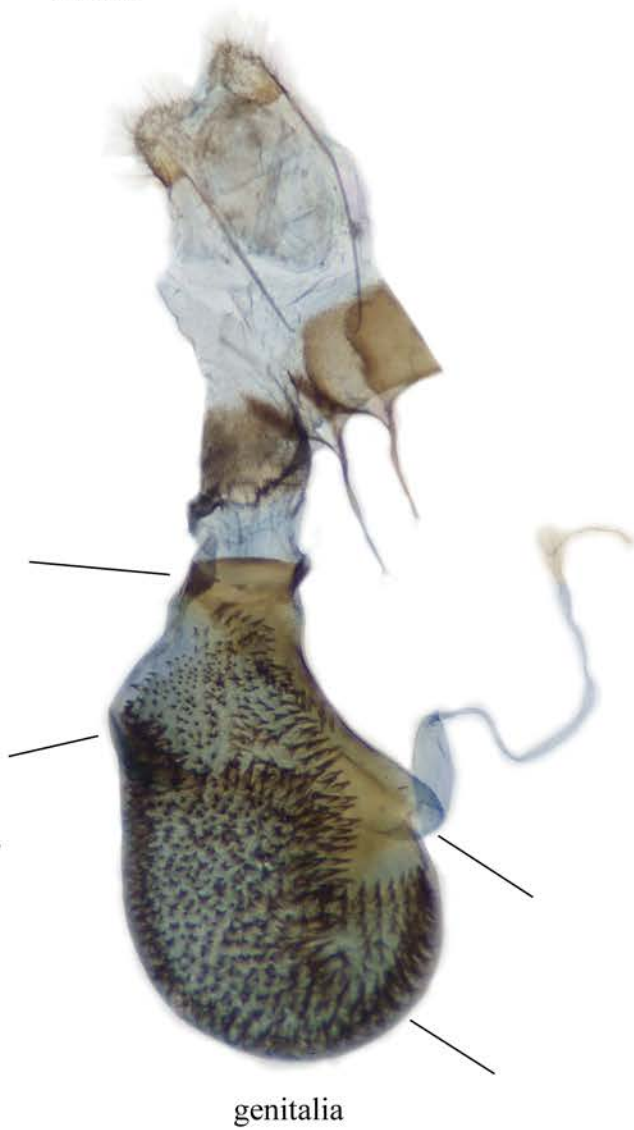
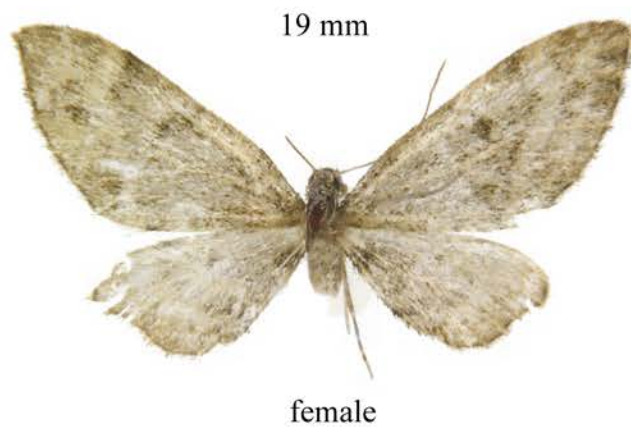
Eupithecia albicapitata Packard, 1876



Oregon, Douglas Co., Hwy. 138, 1.5 miles SW of Tyee, 700', 28 June, 1981, leg. J. S. Nordin

Eupithecia lariciata (Freyer, 1841)

Wyoming, Albany Co., Sherman Hills,
8200', 4 July, 1999, leg. J. S. Nordin

Eupithecia rotundopuncta Packard, 1871

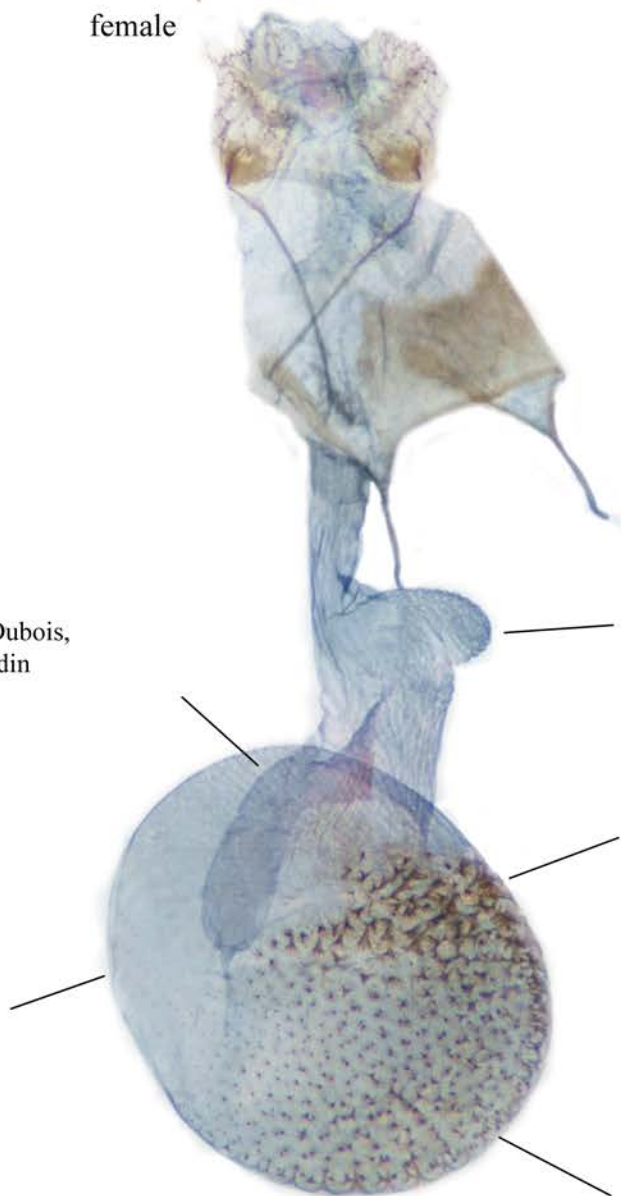
Washington, Mason Co., Hwy. 108, 100',
2 June, 1997, leg. J. S. Nordin

Epithecia unicolor (Hulst, 1896)

22 mm

female

Wyoming, Fremont Co., 10 mi. N. of Dubois,
7900', 22 June, 2001, leg. J. S. Nordin



genitalia

Eupithecia chlorofasciata Dietze, 1872

female



Menifee Co., Kentucky. Specimen deposited in GMAD.

J. S. Nordin collector

**Original description:** *Stettin. ent. Ztg.* 33:192, pl. 1, figs. 8, 9.**Type locality:** Georgia.**Type deposited:** ?**Biology:** Unknown. Apparently a spring flier.**Distribution:** Georgia [type]; Kentucky, Menifee Co.; Maryland, Montgomery Co.; South Carolina; Texas, Hill Co.**Note:** The Maryland (2), South Carolina (1) and Texas (1) specimens are deposited in NMNH and recorded in BOLD.

In fresh specimens, the dorsal forewing pale areas have a greenish aspect. McDunnough (1949) omitted this species.

Additional collection sites are: Indiana, Perry Co.; Oklahoma, Washington Co., Bartlesville.

genitalia

Eupithecia alpinata Cassino, 1927

Arizona, Cochise Co., Huachuca Mts., Ramsey Canyon,
5,500', 8 March, 2021, C. W. Melton collector.

Eupithecia macdunnoughi Rindge, 1952

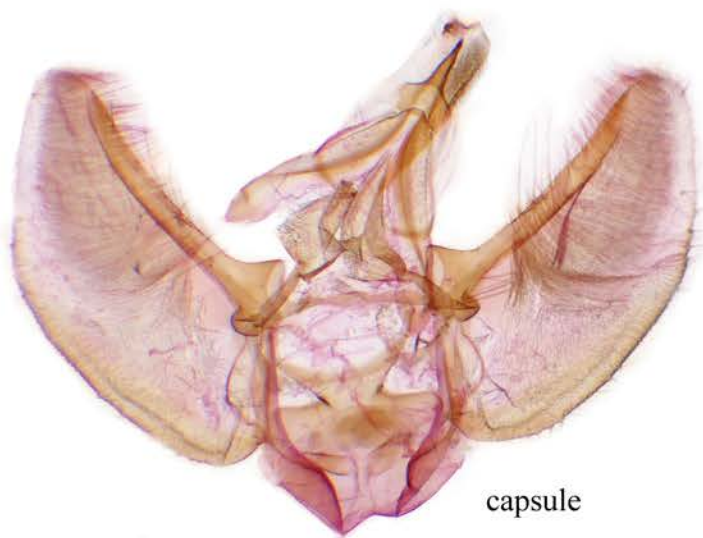
20 mm



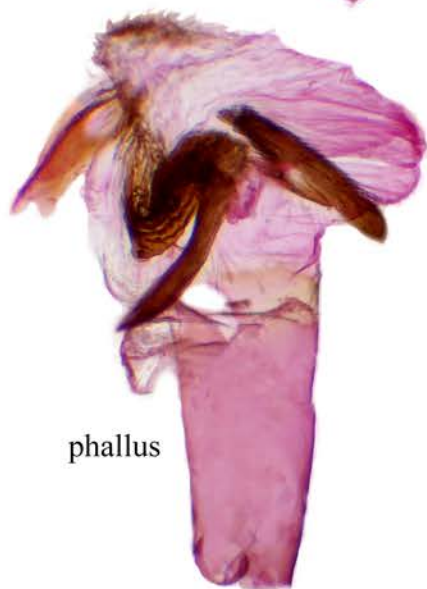
24 February, 2021



8 March, 2021



capsule



phallus



plate



genitalia

Arizona, Cochise Co., Huachuca Mts., Ramsey Canyon,
5,500', C. W. Melton collector.

Eupithecia jejuna McDunnough, 1949

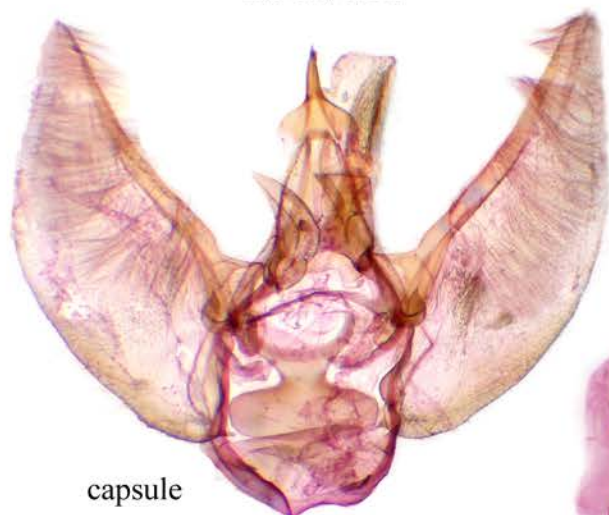


14 mm
male



female

male badly rubbed



capsule



genitalia

specimen not shown

specimen shown above



phallus,
vesica
everted

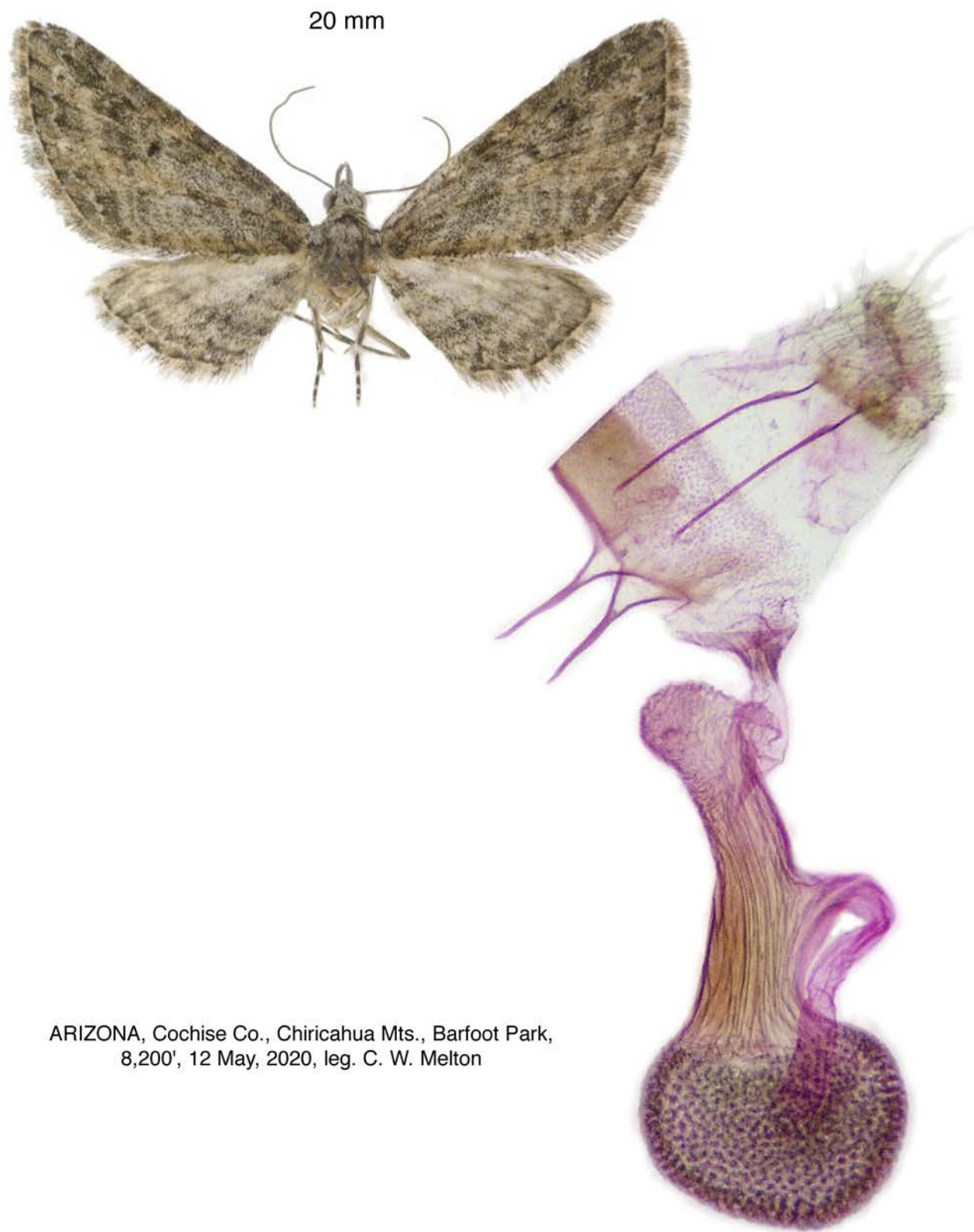


plate

Florida, Citrus Co., 16 February,
2020, J. Troubridge collector.

Eupithecia maestosa (Hulst, 1896)

Arizona, Cochise Co., Chiricahua Mts., Barfoot Park,
8,200', 12 May, 2020, C. W. Melton collector.

Eupithecia maestosa (Hulst, 1896)

ARIZONA, Cochise Co., Chiricahua Mts., Barfoot Park,
8,200', 12 May, 2020, leg. C. W. Melton

Eupithecia ornata (Hulst, 1896)



specimen badly rubbed



Wyoming, Carbon Co., Medicine Bow Mts.,
8,525', 15 July, 2020, C. D. Ferris collector.

Eupithecia edna (Hulst, 1896)



25 October, 2020



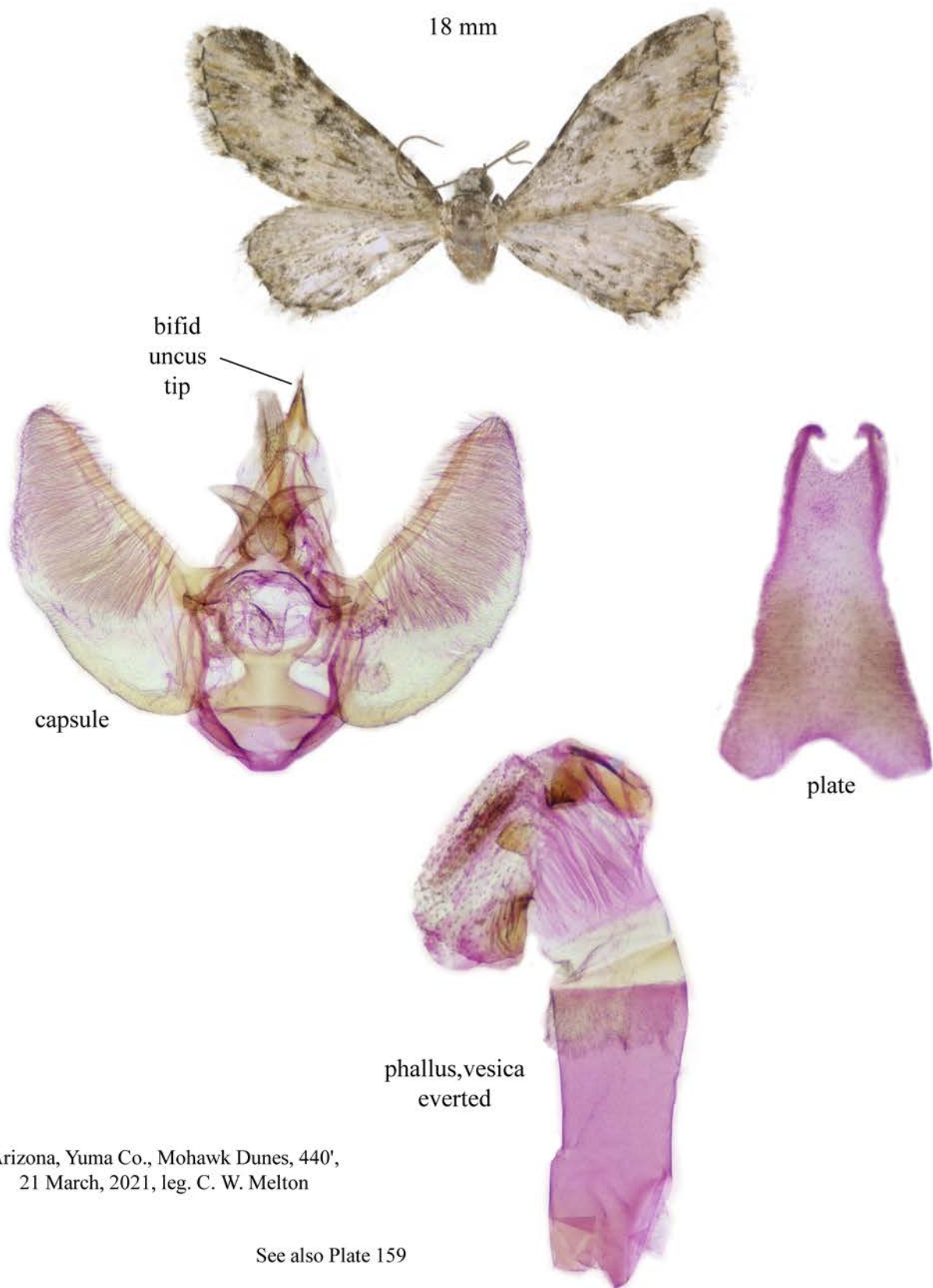
3 May, 2020



Arizona, Cochise Co., Huachuca Mts,
Ramsey Canyon, 5,500', leg. C. W. Melton

See also Plate 19

***Prorella albida* Cassino & Swett, 1923**



Arizona, Yuma Co., Mohawk Dunes, 440',
21 March, 2021, leg. C. W. Melton

See also Plate 159

Eupithecia vargoi Ferris, 2022 – New Species

18 mm

Holotype

Female Unknown

everted
vesicaphallus shaft
digitally
reconstructed

capsule

uncus
tip

phallus

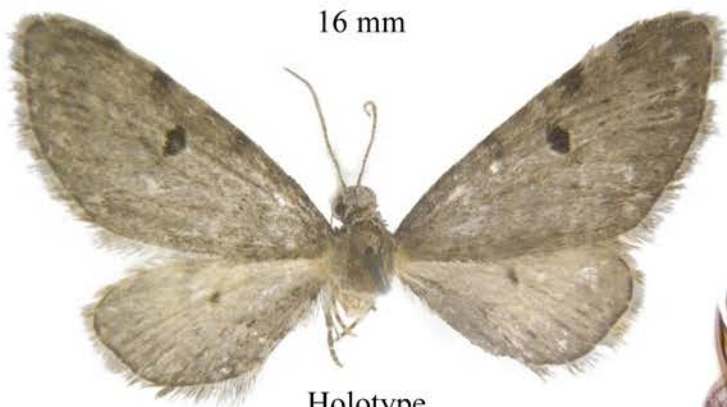


plate

Original description: This monograph – main text.**Type locality:** New Mexico, Grant Co., vic. Iron Creek, Hwy. 152, 32.9085, – 107.808, 7200' (2196m).**Holotype male deposited:** C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Ft. Collins, CO.**Biology:** Unknown. Specimen collection date 10 August, 2021.**Distribution:** Known only from the type locality.

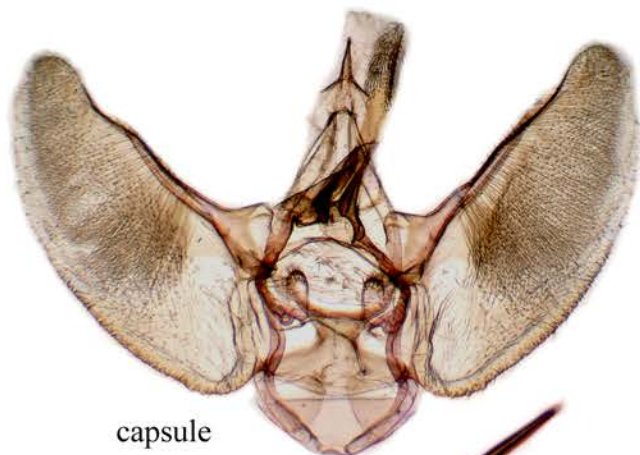
Eupithecia longispinata Ferris, 2022 – New Species

16 mm



Female – Unknown

Holotype



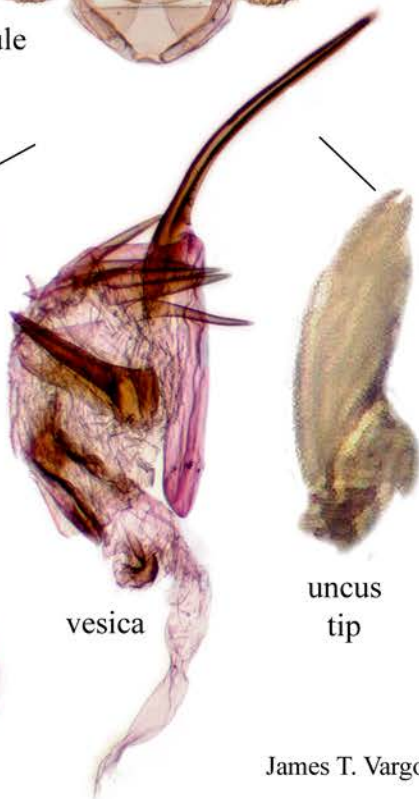
capsule

phallus, vesica
partially everted

phallus



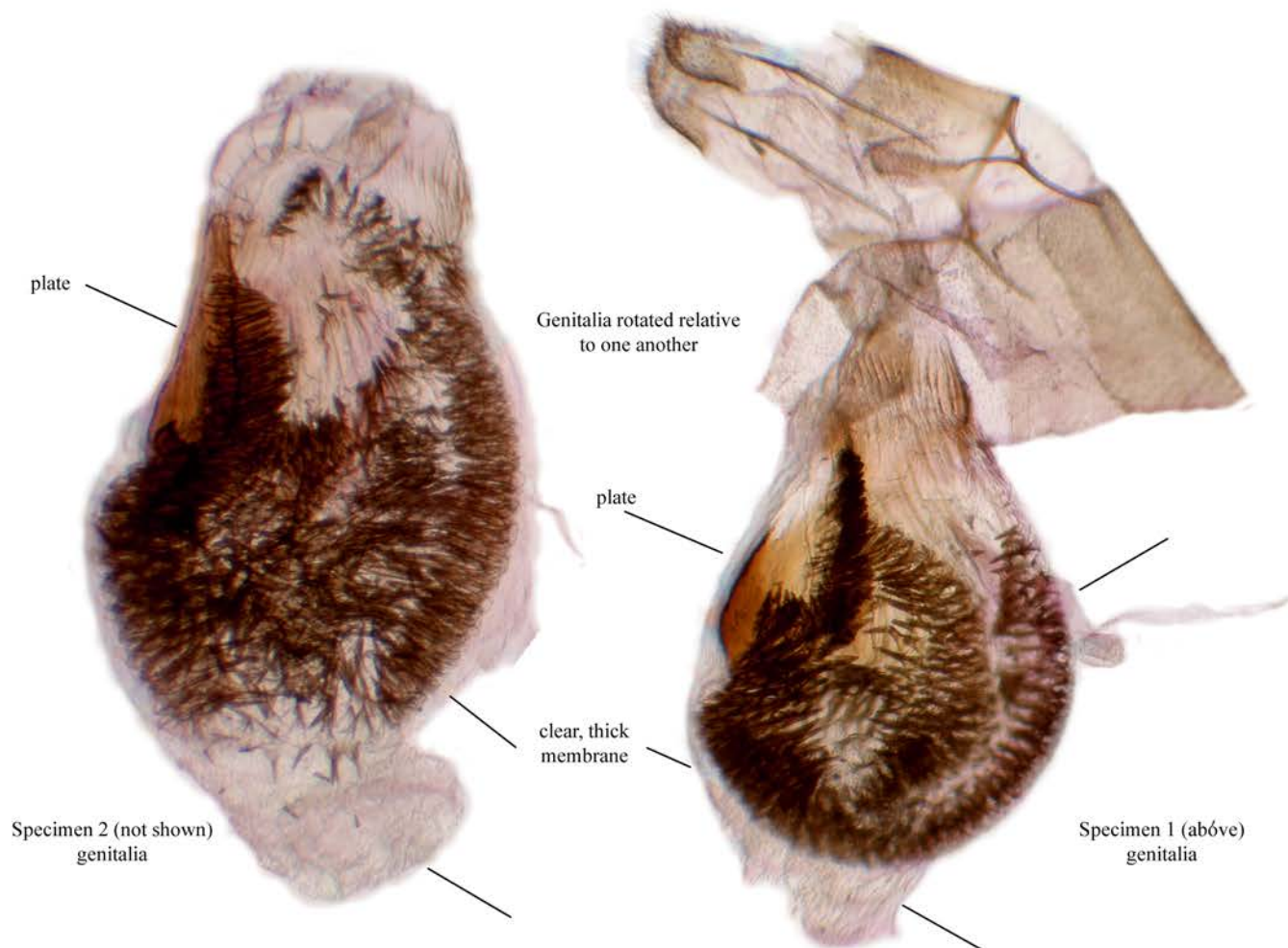
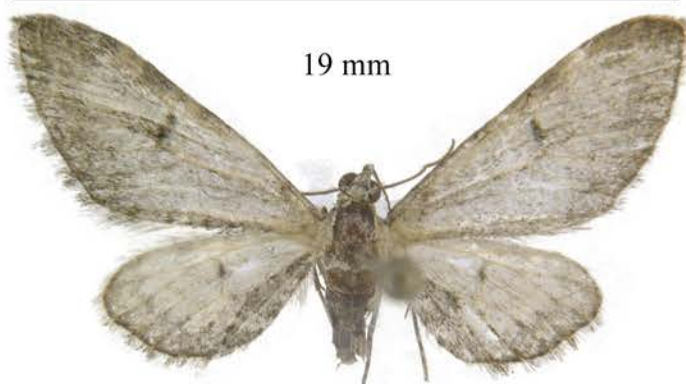
plate



vesica

uncus
tip**Original description:** This monograph – main text.**Type locality:** New Mexico, Otero Co., Sacramento Mts., 8100' (2500m), 32.808N, -105.649W.**Holotype male deposited:** C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Ft. Collins, Colorado.**Biology:** Unknown. Specimen collection date 9 August, 2021.**Distribution:** Known only from the type locality.

James T. Vargo collector

Eupithecia longispinata Ferris, 2022 – New Species

New Mexico, Otero Co., Sacramento Mts., N32°43.66', W105°41.66', 8890' (2711m),
26 August, 2021, UV ight trap, C. D. Ferris collector.

Comment: Based on similarity in habitus, this moth is presumed to be the female sex of the male illustrated in Plate 236. See main text for additional discussion.

Eupithecia ornata – *edna* group (Hulst, 1896)



New Mexico, San Miguel Co., 9550'
(2193m), 18 August, 2015



New Mexico, Grant Co., 7100' (2165m),
25 June, 2021



near *ornata*



near *edna*

James T. Vargo collector

Comment: Until corrected by McDunnough (1945), *ornata* was considered by some workers to be the female of *edna*. Aside from genitalic differences, the palpi of female *ornata* are longer than those of *edna*. The habitus of these two species can be vexingly close.

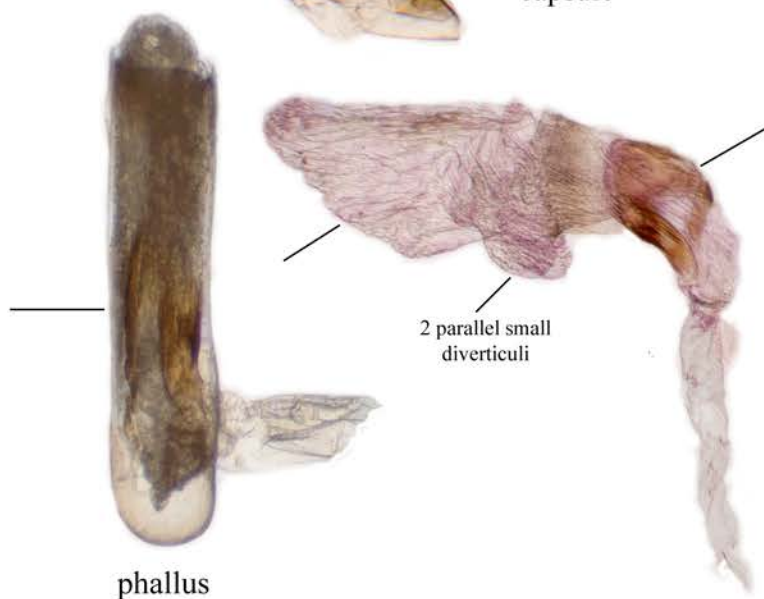
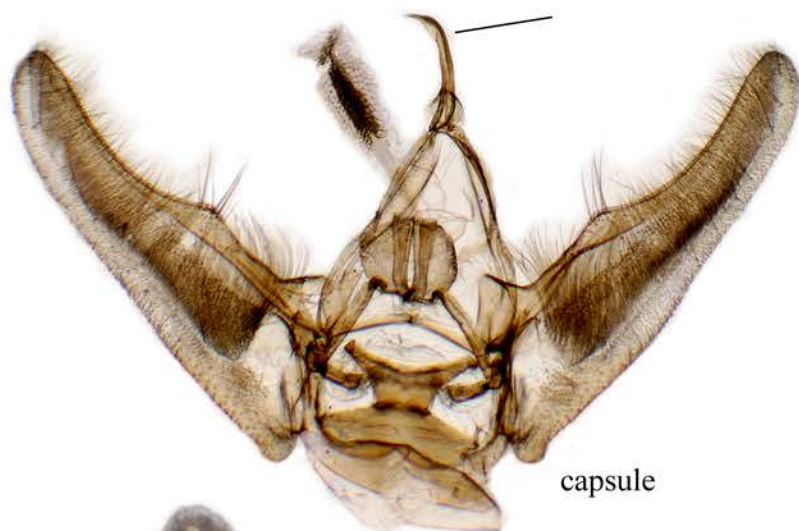
Eupithecia affinata Pearsall, 1908

New Mexico, Otero Co., Sacramento Mts.,
8100' (2500m), 32.808, - 105.649, James T. Vargo collector

Eupithecia longidens kerrvillaria Cassino & Swett, 1924



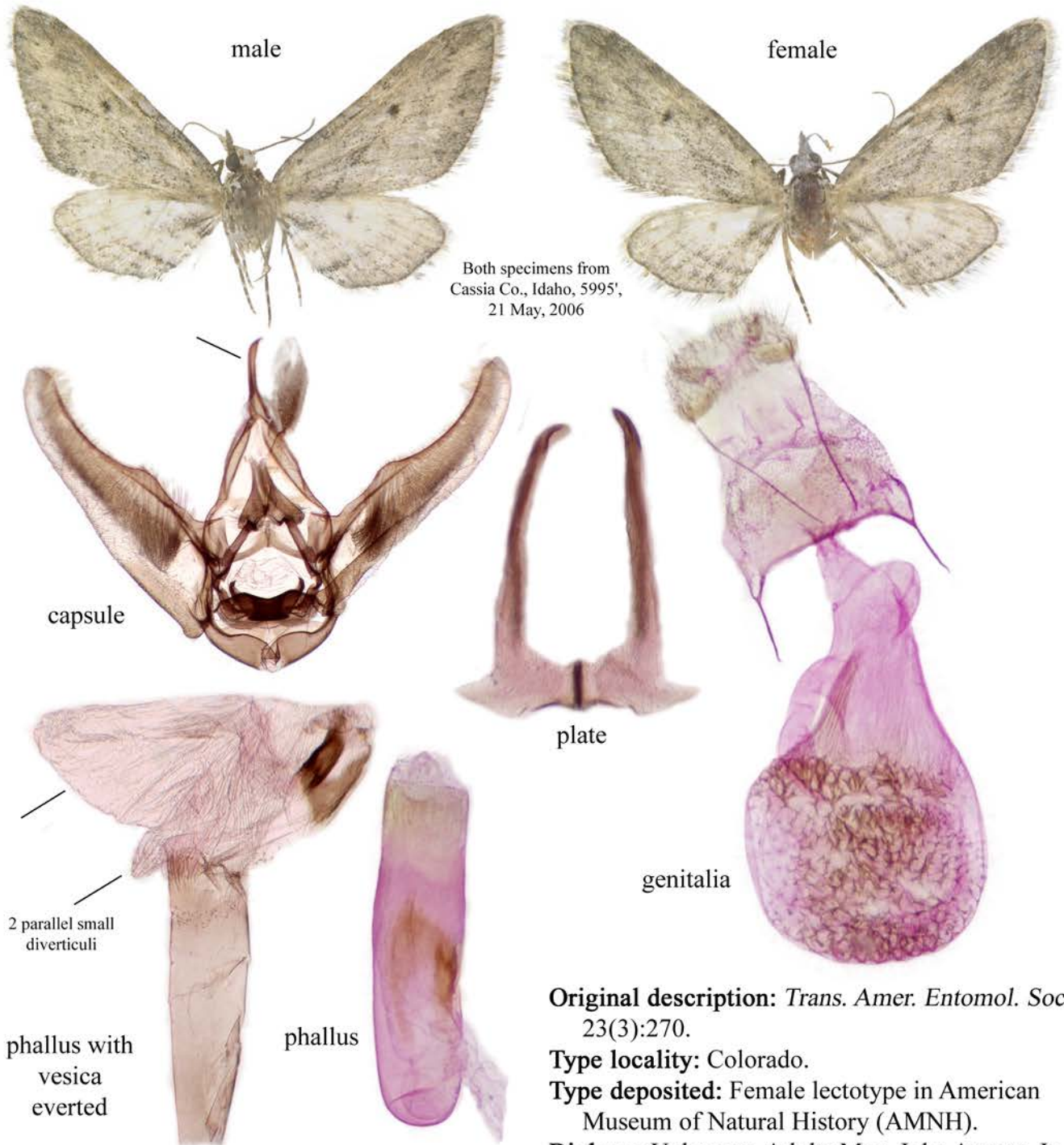
Live photo (moth extracted from original background),
March, 2021, courtesy of Chuck Sexton, Austin, TX



Female not available for study

Note: Compare to Plate 241

Collection locality: Texas, Travis Co., Austin, 30.4177N, -97.7588W, 23 March, 2021,
Chuck Sexton collector.

Eupithecia longidens (Hulst, 1896)

Original description: *Trans. Amer. Entomol. Soc.* 23(3):270.

Type locality: Colorado.

Type deposited: Female lectotype in American Museum of Natural History (AMNH).

Biology: Unknown. Adults May, July, August. In Texas (see below) March, April, October.

Distribution: Arizona (Coconino Co.); Colorado (Garfield Co.); Idaho (Cassia Co.); New Mexico (Sandoval, San Miguel cos.); Texas (ssp. *kerrvillaria*, Bell, Bexar, Bosque, Kerr cos.); Utah (Juab, San Pete cos.).

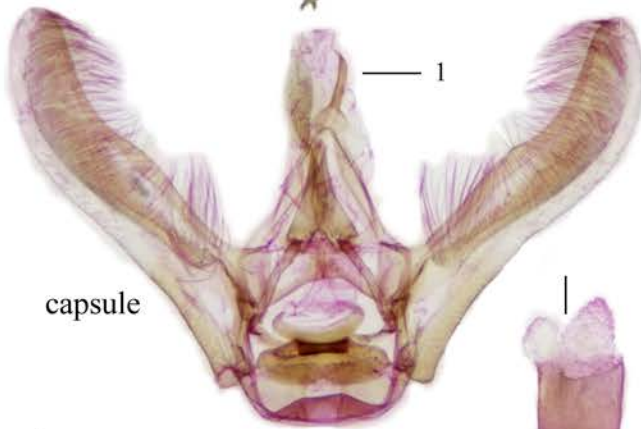
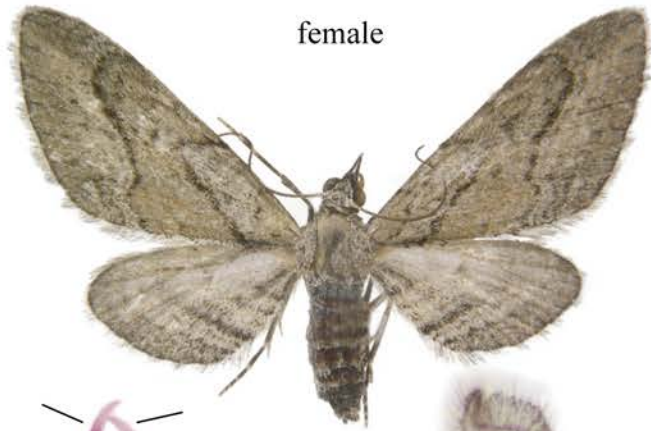
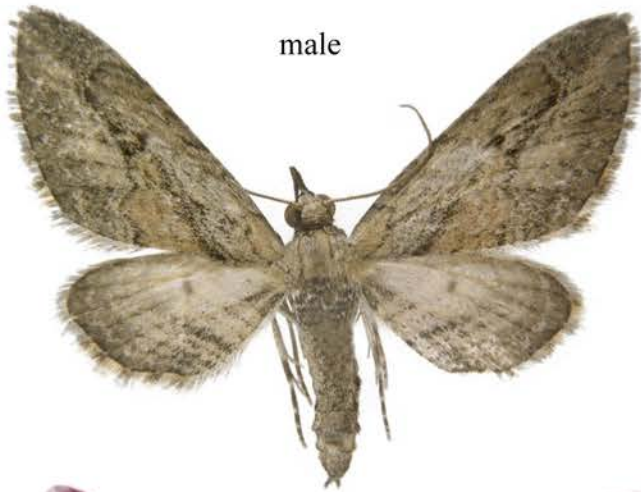
Note: A subspecies *kerrvillaria* was described by Cassino & Swett, 1924, *Lepidopterist* 4(4):27 from Kerrville, Texas; male holotype in Museum of Comparative Zoology (MCZ).

Reference: McDunnough, J. H., 1949. *Bulletin. Amer. Mus. Nat. Hist.*, 93(8):549, 709 figs. 1D, E, pl. 26, figs. 4, 5.

Eupithecia placidata Taylor, 1908

male

female

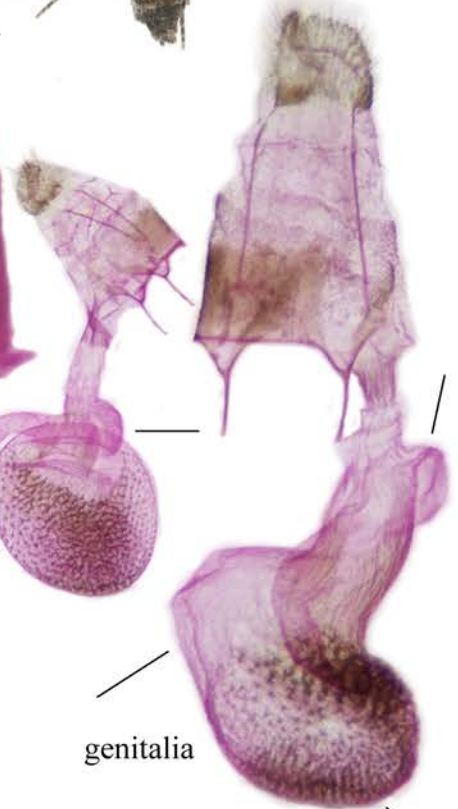


capsule

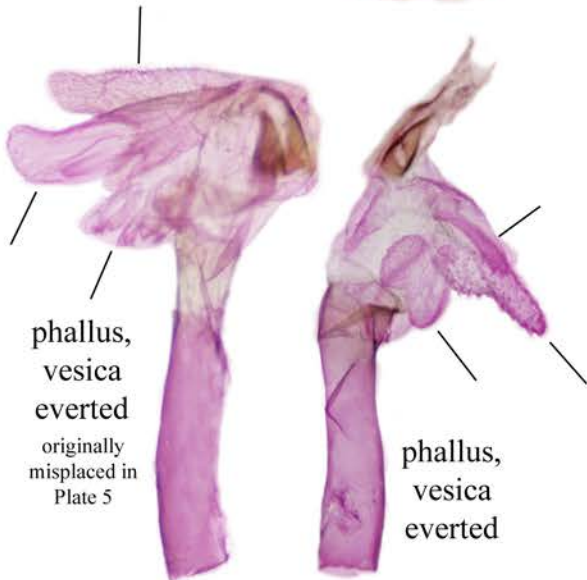
1



plate



genitalia

phallus,
vesica
evertedoriginally
misplaced in
Plate 5phallus,
vesica
everted

phallus

Original description: *Can. Ent.* 40(2):56.**Type locality:** Kaslo, British Columbia.**Type deposited:** Female lectotype in NMNH.**Biology:** Usual hosts are *Juniperus scopulorum* Sarg. and *Tsuga plicata* Donn., but *J. deppeana* Steudel might be used in SE New Mexico and SE Arizona. Adults June and July; recorded in Sonoma Co., California from late July to October; in February in San Diego Co. California.**Distribution:** From Alberta-British Columbia border westward and south to southern California; Arizona (Coconino, Cochise cos.); Colorado (Larimer, Las Animas cos.); New Mexico (Catron, Grant, Socorro cos.); Utah (San Juan Co.). Wyoming (Washakie Co.).**Diagnostic characters:** Central area of forewing with orange blush; 1. slender uncus with hooked tip; other features as noted.**References:** Bolte, K. B., 1990: p. 23; p. 197; figs. 71-72. McDunnough, J. H., 1949: p. 559; p. 711 fig. 3C; pl. 26 figs. 26-27.