H. G. Dyar. 131-157.
Catalogue of described caterpillars
Blue Book.

Descriptions begun, September, 1882.

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131-157

Spilargis halimae *imatura(?)* July 2, 1887

Head shagreened; color leaf green
a black band on each side increased
by a yellowish shade. "Clipping" found

30. Rocky bright yellow green, lateral
oblique stripes (in fruit 5-11)

the cardinal canary ^{paten 11/11/11} yellow, ^{11/11/11} ^{11/11/11}

by a fine white line. Anal plates

light yellow - then the body and

[illegible]

186

under home pale blue and white

covered by confluent slightly elevated

Black spots on the upper back.

Thurcillus per. tubae & Thrac. 1841

Scum white. Abundant

with two black bands separated
by a yellow shade, the feet on
joints 10 have the upper black
band only a spot and the anal
feet have only a slight black
mark. Spiracles orange color
Anumlets & at posterior part of each
seg. They were not seen till the
next morning early when the larva
was "ophringed" hard.

Rate of growth probably 2

BB132

Agraulis vanillae on passion flower
at Los Angeles Cal. Aug 2, 1889. (All sizes)
Egg $1\frac{1}{2}$ mm high, 1 mm in diam, flat at
base, nearly cylindrical but slightly
greater diameter in the middle, summit
rounded. Sides striated by about 15 long-
itudinal ribs crossed transversely by
many slight parallel creases, the summit
reticulated. Color pale yellow, uniform
As hatching approaches the color of the
larva is seen as a red band.

Newly hatched larva (Aug 4) Length 2.5 mm
Head much rounded, black & shining + hair.
Body much contracted between the
segments, pale ^{orange} yellowish testaceous
6 longitudinal rows of black spines
fine & appearing slightly clubbed. The
sac-like feet dark. Eat the egg shells.
On joints 3, 4, 6, 8, 10 are large whitish
subdorsal spots & the cervical spot
edged with white. ^{subdorsal band} ^{greenish}

As hatching approaches? dark.

has 2 long black spines ^{beset with bristles}

[Mature larva has much variation. Head pale whitish orange with black bands 3 proceeding from each spine, 1 before, 1 on the eyes 1 toward the body. While below on the side of the head is a half ^{bands sometimes brown} band. On each joint are 6 spines ⁵⁻¹² beset with bristles but on joint 2-4 there is a different arrangement. On joint 2 one 2 spine in the ^{space} ~~sub~~stigmatal. On 3 one 4 2 anteriorly, subdorsal & 2 post. ^{stigm. space} substigmatal. Joint 4 has 2 subdorsal. Joint 13 has ^{the upper pair anteriorly} 2, the middle one being gone. Skin black. Body orange, with a dorsal band of blue slate color or purple and ^{lateral} broad subdorsal band, ^(consisting of the stig. sp. & subd. line) these varying in width. The orange appears as spots below the middle row of spines: A subventral white band, of varying width, sometimes obsolete. Spines black. Venter slate color shaded

with black, orange spots represent in the part on joints 5, 6 & 11, 12.

Feet dull orange inwardly, black outwardly. Small white spots above the bases of the legs. Length about 35 mm.]

After 1st moult (Aug 8) Head & spines with their elevated bases shining black. Spines as in mature larva. Head furnished with black bristles. Cervical spot represented by 2 complement black spots with bristles. Body pale orange, subdorsal band paler and greenish. Feet black outwardly ^{with black}

[Chrysalis. suspended by the tail. Abd. furnished dorsally with slight elevation each preceded by an oblique black spot. Thorax posteriorly deeply excavate dorsally, anteriorly rounded in a wedge shaped protuberance which is cut perpendicularly in front. Top

a head flat with some pointed pro-
trusions before the eyes. An angular
projection at base of wing cases and
the thorax ventrally at apex of
wing cases is much bulging, sharply
rounded and meeting the abdomen
almost at right angles. Color
ash gray & white much variegated,
the white appearing most distinctly
as a ventral band, stigmatal &
dorsal line on abdomen and on
the int. marg. of wing cases & on
top of dorsal process of thorax.

The depression of the thorax is shaded
with black as also the top of head
& some similar black lines occur
on the wing cases. [Duration 14 days]
After 2nd moult (Aug 11) As in the preceding
stage except the lateral purplish band
is present, covering the stigmatal

space and a subdorsal line. Cervical
spot represented by 2 red and black
spots with short spines. ^{Head} spiracles, anal
plate & outside of feet black. The
body is light orange as in the mature
larva & the spines are the same
After 3rd moult (Aug 14) Markings, 2
mature larva (red spots not black,
no white stripe)
Length about 25 mm.

After 4th moult (Aug 18) Mature

BB/33

also willow

Spring of a kind of poplar in
granite valley, Aug 15, 1889.

Head ^{sub-triangular} pointed, obtusely pointed at
vertex, shagreened. Color green, a yellow
stripe from vertex to palpi. "claspers"
tinged with pinkish. ^{dark beak.} Body light
yellowish green, thickly covered
by small white spots, less numerous
on joint 13. A pale white subdorsal
line runs from the middle of joint 2
to joint 11, fading out at both ends.
Lateral oblique yellowish line
just before the spiracles, more
distinct posteriorly, on joints
10, 11 & 12 is a very distinct one, white
edged above by darker green
and continued to the caudal
horn which is pale whitish,
violet beneath at the base and

light blue above. Anal plates
tinged with yellowish at the
edges. Spiracles white with a
distinct brown oval edging.
Thoracic feet tinged with pinkish.
Length about 50 mm.

"J" Aug 20 in the ground.

Pupa Dark mahogany red with
black shadings. cylindrical, and
parts markedly developed. Ac-
master contracted basally & tipped
by a tapering spine.
dead

134

Springs on evening primrose in
 Yosemite valley Aug. 15, 1889.
 Head & cervical spot, ^{18 small plates} shiny olive
 green, covered by small yellowish
 spots. Palpi & mouth parts pale.
 Body yellowish green, a yellow
 subdorsal line partly interrupted
 on each joint from 4 to 12 by an
 rounded dark red spot. Above &
 below each spot is a distinct black
 spot, the upper ones in some species
 continued & connected to form a
 band. This is sprinkled with
 yellow ^{dots} ~~spots~~ posteriorly to each red
 spot. Spiracles ^{light} ~~dark~~ red with a
 yellowish line down the center &
 surrounded by black mottlings -
 caudal horn reddish orange
 with dorsal pale points

34 12 13

Feet & venter greenish yellow
 with some black streaks in the
 subventral space
 Length about 65 mm

Similar mottlings on joints 3 & 4
 in the stigmatal line and on
 12 & 13 in the subdorsal space

Deilephila lineata

135-

Egg of *Lemnitis longicornis*? on willow
at Yosemite Aug 17, 1889. Laid on the top
of the leaf. Nearly spherical, constricted
toward the flattened base, closely
covered with ^{rounded} depressions & minutely
pilose. Color blackish (towards hatching)
After 2nd moult?? Head rough, slight
dorsal processes, dark brown, some of
the roughnesses tipped with white.
Body much roughened, with many
small processes, the largest being
dorsally on joints 2, 3, 4, 11, 12 & 13, on
joint 13 are 2 pairs. The processes are
also much roughened. Color
dark brown a large white patch
dorsally on 8 seg & the top of some
of the roughnesses before & after the
white. Others tipped with yellowish
anteriorly dorsally & posteriorly

234 11-13

Laterally (joints 12 & 13)
dead

136

See 311

Raphia? on Poplar Yosemite Aug 17, 39
 Head whitish green, partly ventral
 side of joint 2. Body pale green
 with 2 transverse rows of small
 yellow dots on each segment
 the dots alternating, on joint 4 the
 posterior row are more closely set
 joint 3 has a double dorsal process
 violet colored, edged by yellow and
 finely marked with black. On 5-
 9 & 12 are 2 spots similarly colored
 & connected posteriorly by a yellow
 line. A stigmatal row of small
 spots of same color, except on joint
 5. On 2, 3, & 4 the spots are elevated
 Feet of joint 13 with same color.
 Length 30 mm.

dead

R. frater var. *coloradensis*.

Copied
12/2/90
137

Edemasia on rock maple Yosemite
valley Cal. Aug 20, 1889. Head black
with a few short hairs. Cervical spot
bisected, black as are also the
anal plates. Body yellow with short
hairs; joint 5 has a slight
dorsal hump, palmar white orange
tinged & with 4 black elevated
spots, these being part of a transverse
row of 8 which each segment bears
joint 13 having a double row.
The rows are not in line, the 2
dorsal spots being placed anterior-
ly to the others. Faintly indi-
cated geminate subdorsal &
lateral brown lines. Abdominal
feet dark. Length 12 mm.

Nov 19/90 Head mahogany and
more or less shaded with black.

Loane Keene Valley 7.7. July 12 1894
Stage I hds .5 mm. II 1.1 mm. tubercles with
large conical bases, but no secondary ones
Furnished with short hairs. ^{represent} Jarroville

Body yellow, a dorsal single &
subdorsal & lateral geminate
interrupted pale brown lines
Black spots as in previous stage
but more elevated, the dorsal
on the hump & on joints 3 & 4 the
subdorsal especially long.

There is also a slight hump on
joint 12 with 2 produced spots
(Spots in 4 rows 1 next dorsal line ② in
subdorsal ③ in lateral line ④ in
subventral space these least any
on each joint
plemented by 2 more below them)

The tubercles are obsolete beyond joint 11
& the arrangement of spots confused
Bisected, ^{elevated} cervical spot, feet & anal
plates black. Body with short hairs
Venter pinkish between the legs
anal feet elevated. Later as the

larva grows the gummate hump
 become filled in with white and
 the hump on 5 has a decided rose
 tint, a ^{larval} faint brown interrupted
 line appearing between the dorsal
 & subd. lines & bet. the subd. & lateral
 lines. Molt Aug 31 as before but
 black spots prolonged as ^{plum}
 of ^{subdorsal} joints 3 of the ^{subdorsal}
 are long, on 5 the subd. ^{next anal} spot
 on the next the ^{next dorsal} are longer
 hump on 5 rose color, on 12, yellow.
 Lines black, the gummate lateral
 & ant dorsal white ^(in center) between, inter-
 rupted at humps ^(obsolete on 13) Anal feet yellow,
 black at base held elevated, dorsal
 line black ⁶⁻¹² bet. it & subd. interrupted
 from line 6 another similar hump on
 bet subd & lat. (dead)

(Probably last molt)

Oedemiasia salicis

Corresponds
 well with
 ?? Hy. Edw.
 Desc.

138

Nocturnal larva, Longbeles Cal,
 Sept 22, 1889. Dark brown above, a black
 dorsal stripe edged intermptly
 with pale yellow. Subdorsal inter-
 mpt yellowish streaks, and the
 sides shaded with black. Sub-
 ventral space pale yellowish
 shaded with brown centrally with
 a stigmatal & subventral whitish
 line. Venter pale whitish with
 2 white lines interrupted by the
 feet. On each joint 2 black stigmatal
 spots in 2 alternating rows. Cervical
 spot large & black. Head pale
 reddish brown. Spracles black.
 a number of short pale hair on
 the head & body. Anal plate
 pale. (head)

more 3 ~~or 4~~ Head between the eye
jaws and 2 large spots on the vertex

On the joints of the legs (5, 6, 11, 12) there are 4 small black spots per leg. The whole body is black, the head is black, the thorax is black, the abdomen is black, the legs are black, the wings are black, the antennae are black, the mouth is black, the eyes are black, the ears are black, the nose is black, the tongue is black, the throat is black, the neck is black, the shoulders are black, the elbows are black, the wrists are black, the hands are black, the fingers are black, the toes are black, the feet are black, the claws are black, the nails are black, the hair is black, the skin is black, the bones are black, the muscles are black, the nerves are black, the blood is black, the lymph is black, the sweat is black, the tears are black, the saliva is black, the urine is black, the feces are black, the vomit is black, the spit is black, the sweat is black, the tears are black, the saliva is black, the urine is black, the feces are black, the vomit is black, the spit is black.

Rate of growth 2

Correct 140

sent to
can cut

Eggs of *Dynamis caryet* on *Quercus*
 Sept 22, 1889 at Los Angeles, Cal.
 Eggs. Laid on upper surface of leaf.
 Base flattened, nearly cylindrical, but
 thicker in the middle the top quite
 flat & rather abruptly rounded.
 Longitudinal ribs ^{regularly beyond} ~~across~~ the
 summit. Color green of a shiny
 blue tint than the leaves. Length .7 mm

Sept 25
Hatched larva apparently (G) Length 2 mm

no dorsal line distinct
Mar 2. Oct 5. 129 apparently = (a), Length 4 mm

Mon 31 Oct 3 = (a) Mon 4 Oct 6 Acid slightly
corodate. Bronzy black, with minute yellow
scales & black hairs. Body purplish black
with small yellow spots. ^{Spines black} A geminate

Irregular yellow lines irregular, interrupted
and a series of ^{supra & sub.} stigmatal irregular spots

Nov 5 Oct 10 Head bronzy black with elevated spots
8 hairs. Body black spots orange ~~and~~ with
2 hairs all black. Spots a short white hair
on tail. P. large

Changes to try in the
to make 3rd and 4th
a lot easier to
i.e. the whole row no
to make 3rd and 4th
a lot easier to
i.e. the whole row no

[First Stage] Spin a web on surface of leaf and
seat beneath its upper surface of leaf.

Length 2mm Head, cervical spot, anal
spots, alternating row of ^{8?} black dots

Body dark yellowish testaceous

Head without processes, smooth shining
[Immature] ^{Pearse} Head black covered with

many white hairs and on the vertex
about 6 orange elevated spots bearing

black hairs. Body ^{duff greenish} ~~yellow~~ black
mottled, ranging in intensity of shade.

with many yellow or orange spots
forming irregular subdorsal, 2 lateral

supra- & sub-stigmatal bands more or less distinct. Spine white with

white branches, & tipped by a black beam
 of thin & unit. segs. black. 7 per seg.

on 5-12 (dorsal, anted. lat, ant-styl)
now on j2, 3 & 4 have y, 13 have 2

(Ordovex & sides nearly all black
with the orange spots. Spine black
Venter greenish with some black marks)

Body covered by many small papillae
producing short white hairs

Venter greenish, mottled with
black or brown. Length about 30 mm

[a] Nov 18 Sept 23 Head black hairy. Body
purplish faintly mottled with yellowish

laterally and a geminate dorsal
yellowish line. Short spine bearing

black hair arranged as in mature
larva, black, but the dorsal & anal

on joints 6, 8, 10 yellow. Length 7 mm
Sept 28 Black & spines black except ^{dorsal}

6, 8 & 10 which are orange at base, yellow
in center & black at ends. A stigmatal

geminate dorsal yellow line. Minute
yellow spots on the body. White & black hair

Length 15 mm.

Nov 10 All black. Substigmatal
yellow. Minute yellow spots. Venter &

white hairs & legs reddish. P. cardui

(Pupa depressed behind thorax, the
thoracic process short & pointed, ^{taken up anteriorly in a ridge}

ring cases prominent; abdominal
segs. small & quickly rounded,

crenate flattened & looked like a
button & white silk. A pointed

elevation at each eye and the
base of the ring cases. 3 rows of

dorsal pointed elevations. Touched
with white ^{on abd. with 2 points on thorax} with 2 large & 2 small

white spots in depression behind thorax.
Color of pupa wood brown minutely

mottled with whitish.) P. carye

hope
length of stages

Pyramis carye
" cardui

141

Heaperid larva on Malva, Sept 22nd 89
 at Los Angeles, Cal. Head much
 larger than joint 2, slightly notched
 at vertex, minutely chagreened.
 Head & joint 2 black with
 a few short white hairs. Thoracic
 feet black. Body ^{last seg. tapering} pale green
 a faint geminate pale subd
 and stig line. A darker dorsal
 line. Body densely covered by
 minute white ^{piliferous} granulation.
 Abd feet green. Length 15 mm
 (dead)

142

 Oct
 Oct 31

Eggs laid by some c-light moth
 Sept 23rd 1889. Hatched Sept 25 and
 were given Malva. Hemispherical
 rounded ^{at} toward the base the vertex
 with a rounded depression. Finely
 creased vertically. Pale yellow.
 Hatched walks as looper & will but
 not readily spin a thread. Head
 somewhat conical, black & shiny.
 Cervical spot & thoracic legs faintly
 blackish. Body pale yellow with
 black hair. Eat the under leaf
 of the leaf & not there on the petiole.
 Keep the body bent up in a closed
 loop & head touching the leaf.
 In walking have the last 3 pairs of legs
 up. Mon 2 Sept 28 Head whitish. Body
 green with a trans. row of black
 spots for seg. bearing black hairs.
 Head 12 legs 6 thoracic & last 3 pair

a subdorsal & stigmatal whitish line
joint 12 enlarged. When about to
moult sit out straight on leaf

Moult 3 Oct 1 Head greenish with
minute black dots & black hairs ^{jaws reddish.}
Body green with white piliferous dots ^{heavy black cent.}
and indistinct longitudinal white

streaks, a narrow subdorsal and
broader stigmatal white line

On joint 5, 6 & 7 is ^{in same place as 1} a distinct black
spot in the subdorsal space. Body
with black hairs. ^{abd.} Legs only on 9, 10
and 13. 12 knumped. Length about 7 mm

Moult 4 Oct 4 Head green with minute
brown speckles and a few black hairs
Eyes & jaws brown also palpi. Legs as
before. Body green, a broad white
stigmatal line, a narrow subdorsal
and the same in subdorsal space also
white. ^{first broader than the 3-d and the} the latter slightly wavy and

interrupted. On each joint 2 rows of
white dots with black centers bearing
short black hairs. The rows alternate
on the middle joints. Thoracic feet
tinged with blackish. Other coxae
with body. Length about 10 mm ^{with contortions}
disturbed curl spirally & fall to ground.
At this moult eat whole leaf.

Moult 6 Oct 7 Head ^{shiny} green, jaws brown
palpi black. In some a black stripe
on side of head. Body dark green.
The lines as before, the stigmatal
ending sharply above but blended
ventrally. The elevated spots bearing
 ^{white} black hairs are whitish except those
suprastigmatal which still have
black centers. Genital spot and
anal plates dull pale green
 ^{Spinules white with black oval} Thoracic feet blackish. Length 25 mm
The stigmatal spot and ventral

have some minute white spots and
on j 5 to 10 there is a small black
dorsal spot situated anteriorly on
each segment. Joint 12 slightly swollen.
Joint 13 small. Legs as before ^(Abd m 9, 10 & 13)

Oct 11 Spun a thin white web, drawing
together leaves (or the netting) in which to pupa.
Pupa Oct 13 Depressed somewhat above
the wing cases at back of thorax, the
eyes prominent, the tongue case
projecting below the wing cases forming
a rounded prominence over the abd.
seg. succeeding the wing case. The cu-
mulus is short & blunt and the hooks
with which it is furnished are fastened
in the silk of the cocoon. Wing cases
slightly creased. Color brownish
black but paler at the joinings
of the parts and between the abd.
joints. Imago Oct 25

Plusia californica

Rate of growth $1\frac{3}{4}$
(see cat no 3934) 143

Copied
March 5 '97

Eggs laid by larva Sept 25, 1889
Los Angeles Cal, electric light.

Eggs Sept 25 Slightly less than hemispher-
ical, the base flat. Color dull brown-
black, smooth. Diameter 1 mm.

Hatched Oct 3 Head ^{dark} reddish brown. On
joint 2 are two brown processes
minutely spined. Joint 13 has two
"tails" 3 mm long, brown ^{broadly} twice, annulate
with pale yellow ^{minutely spined}. Body brown with
^{32-6, 8-10, 12.} 3 dorsal pale yellow patches. Venter
and legs pale whitish. Length 4 mm ^(without tails)

Rest on leaf on abd. feet, the thorax lifted
off it. Tails together, resting on leaf.

Moult Oct 6 from web spun on leaf etc.
Head red brown with two blackish
shreds in front. Processes on joint 2
^{which is swollen} thick & spined. Tails twice broadly
annulate with pale yellow. Body

red brown, a transverse row of minute
spined points to each seg. the dorsal
paddles as in previous stage but the faint
one on joint 12 ^{extends also} on j. 11 ^{and 10}
Length (6 ^{mm} + 4 ^{mm}). Eat the whole leaf.

Venter & legs pale yellow. The exten-
sile threads in the tails are pale
whitish at base the rest dark brown
^{broadly} unimulate with white. They
are extended in the same manner
as a "spiral" horn, "inside out".

Nov 3rd Oct 11 Head brown, densely marked
with small yellow spots, but leaving two
narrow lines of the ground color in front
of the whitish. Head paler at the sides
posteriorly. Joint 2 is somewhat swollen
& bears two thick processes about 1 mm long
covered with ^{tubercles} ~~spines~~. Each segment has
a row of similar tubercles ^{each} bearing short
fine hair. Tails 4.5 mm long, 2 apical.
The tubercles dorsal on joints 3, 6, 7, 8, 9 & 11 are rather larger

Body yellowish green, the red brown of
the dorsum reduced to an ant dorsal
brown line which joins on the last
segment and is connected on joints
^{and 3} 2 by brown mottlings between the
processes, by a large patch on joints
^{and joints on j 13} 6, 7 & 8 and another on joint 11.

The large spot is paler centrally.
The tails are green, brown above at
the base and twice unimulate
with brown toward the ends. Length 8 mm

^{later} On the ant dorsal line ^{is} ~~may be~~
wanting and the brown dorsal
^{connected by a faint dorsal line} patches ~~isolated~~. These are in
^{12. 13 mm + 5 mm} ~~intact somewhat in different examples~~

Nov 8 Oct 17 Head purple brown before
yellow green at the sides behind the
eyes, the upper $\frac{2}{3}$ densely covered with
small pale yellow spots, but leaving
two lines of the ground color in front

Palpi white, a few minute hairs on the surface. Body green with a yellow tinge at the bordering of the dorsal patches which are four in number and purple brown. The 1st on joints 2 & 3, triangular, covering the upper part of the spined process of joint 2, partly divided by a green dorsal line anteriorly; the 2nd on 5-6, 7 & 8, 9 elliptical, ^{extending down the sides to the stigmata} pointed anteriorly and connected posteriorly with the 3rd patch on joints 10 & 11 which widens posteriorly and narrows abruptly to the 4th patch on joints 12 & 13 which is partly replaced ^{so both these extend to and beyond} by the ground color. Tails purple brown at the dorsal half above and two annulate with brown at the extremities. The dorsal patches are partly mottled with pale yellow and contain conical tubercles, each

^a Head partly retracted under joint 2, surmounted by a short hair. The sides of the body are sprinkled with brown & whitish specks and have a few short fine white hairs. The tentacles are spined and the retractile threads black with a white ring. Body slightly elevated dorsally at joint 4. ^{thorax white}
[A larva with 11th skin moult Oct 23. Similar s.d. line less, later gone. M. Oct 30 = Oct 23.]
Moult Oct 24 Head as before. * Body much smoother, the conical piliferous elevations represented by ~~slightly~~ ^{small} elevated spots. Process on joint 2 ad- ^{much} ~~very~~ smaller and without spines. Tails spined as before & marked the same. Dorsal patches much as before, the 2nd 3rd & 4th strongly con- ^{2nd 3rd 4th moult 30} fluent the former marked centrally with many dark crimson spots. *

(Live on web on top leaf all last stage)

with which color all the patches
are narrowly edged ^{inside the yellow border} ~~at~~ ^{yellow} ~~Body~~ ^{patches}
green with a transverse row of
purple brown spots per seg, and
a number of whitish spots which
are found also on the ~~last 3 dorsal~~
patches, and the ~~anterior~~ ^{anal plate} ~~on~~ patch
conduent and replacing the
purple brown. The patch on
joint 2 ~~has~~ ^{is} yellow spots like
those on the head. ^{partly surrounded by} ~~Spine~~ ^{dark} ~~red brown~~
ventr. whitish ^{at maturity green} ~~purple~~ spots on the
base of the legs ^{legless} segs. ^a Retractor threads
dark purplish black, once
unimulate with purplish white.
(Two erect spiny hairs at anus, beyond
app. anal plate) Feet green, ^{marked} ~~the~~ ^{with}
~~marked~~ with brownish. At maturity
a number of yellow spots appear on
the central dorsal patches, and the

^c As they approach maturity the color
the dorsal patches fades to lilac

outline of this patch anteriorly is
irregular, retracted between the
segs. Length $(35^m + 5^m)$ 40mm
^d A reddish ventral line on joint 12
^e Slight dorsal elevation on joint 3
posteriorly, just covered by the end
on the first dorsal patch.

Cocoon Oct 31 On a stick of silk and
bits of wood bitten off 30mm x 13mm

Pupa [Dec 9] Cylindrical, tapering
slightly at both extremities, somewhat
flattened. Color pale brown, ventr.
yellowish and a dark dorsal line
with a big space greenish. Abd.
very minutely punctured. My cases
creased. Length 18mm Width 6mm
Drugs, Nov 21, 1890 Cut no 46 48

Cerura cinereoides

Rate of growth $1\frac{1}{2}$
C. 144 '90
144

males
clover
alfalfa
geranium
8-10

43 eggs laid on electric light carbon
Hill & 12th St. Los Angeles, Cal. Found
Oct. 26, '89. Egg spheroidal, the base
slightly more flattened than the
apex. Color ^{light} pearly ^{gray} ~~white~~, ~~when~~
~~found showing a gray streak from~~
~~the included larva.~~ Laid in
mass. Diam. about 1 mm.

[A ♀ *Arachnis picta* laid about 380 eggs
Oct. 28, 1889. Hatched Nov 14 (BB 144A)
Hatched Nov 1 Head in the vertex and
larva eats a hole ^{afterward cut more in each side} for exit. Head
undate, black & shiny, the mouth
parts pale. A few black hairs.
Cervical spot straight in front, curved
behind, black & shiny. Body pale
dirty whitish with long black hairs
growing from 8 long ^{shiny brown black} ~~hairs~~ ^{hairs} legs
black. Length 2 mm when hatched.
Should be $2\frac{2}{3}$ by scale

H. B. & docta will run & hide when disturbed
while *picta* ball up. Easiest way to
distinguish the larvae.

Later the body is greenish white, the
warts black. ① now small in subdorsal
space. ② subdorsal ③ lateral ④ dirty-
mural ^{subventral} ⑤ obsolete on 2, 3, 4 & 13 ⑥ replaced
by cervical spot on 2 and supplemented
by a elongated spot on 13 on which
⑤ on 2, 3 & 4 lower than on 13. Some of
the warts are brownish at the bases,
and subventral
forming a subdorsal brown band on the
middle segments. Legs black
Mount Nov 12 Head as before. Body
pale whitish, the warts large and
black with brown innovations between
the subdorsal ^{& subventral} rows. Length about 4 mm
black ^{or orange}
Thorax feet black, abdominal whitish.
Hair black, about 1 mm long, still pink
Mount Nov 20 Head shiny black. Body
warts black, a white dorsal line
and pale stigmatal band. Hairs
black, white from subventral warts
Eats whole leaf. Length 6 mm

at completion of stage body is purple
with dorsal & interrupted stigmatal yellow
ish white line wants ① small, anterior,
in 2-d. space 5-12 ② subdorsal ③ super-
stigmatal both replaced on j 2 by cervical
spot, ④ sub. stig ⑤ ③ & ④ coalesced on j 13
⑥ subventral, only one ^{intermediate} on 2, 3 & 4
and lower slight on 13. Small units
on venter in the legless segments

[Faint handwritten notes, mostly illegible due to extreme blur and bleed-through from the reverse side.]

copied 90
Apr 23 1890
copied 90
Dec 18 1890

145

Spring drowned in irrigating ditch
Phoenix, Arizona, Nov 15, 1889. Probably
on ^{cotton} leaves. Head subtriangular
green with many rather large white
elevated spots, the front nearly
all ^{all} yellowish white but it
has a purplish shade centrally
at the antures and the ^{irregularly} triangular
plate above the mouth is pale green
mouth parts ^{dark} white but the jaws
black on the inside. Cervical spot
and anal plates same as scales of
the head, the two ^{lateral} lower plates tinged
with yellowish posteriorly. The
upper does not quite meet the
^{lateral} lower ones at the sides, leaving
some of the skin of the body between.
Body green with a purplish shade
on the dorsum (negative) and 9

interrupted between the segments
oblique lateral lines, the first
and sixth fainter than the
others and sometimes almost
obsolete. The last is broad
and distinct and extends
from above base of leg on joint 10
to the caudal horn which is short
concolorous with it, ^{in many the tip black} greenish white.
The lines are not well defined
at their edges, the outline being
somewhat irregular and blended.
Spiacles yellow brown the center
white, ^{but the one on joint 2 is all white} Thoracic feet white,
purplish at the tips with fine
brown hair internally, abdominal
green, purple outwardly above
the claspers, then mainly white
and above this another slight
purple shade. Venter centrally
slightly & interruptedly paler

Each segment has about six
transverse creases or annulets.
Length of larva 80-90 mm. Length
horn 3-4 mm. Width of head at
base nearly 7 mm, height 8 mm.
Diameter of body 15-17 mm.

Pupa Red horn. Robust, of usual
shape. Crenaster short and rounded
terminating gradually in a single point.
Body segs. coarsely punctured, wing
cases granulated.

Imago Jan 12, '90. Cat no 4508

Triptogon occidentalis
~~var. *T. modesta*.~~

Triptogon imperator, Stål.

146

Micro larva on ^{cottonwood} ~~poplar~~, Phoenix
Arizona, Nov 15, 1889. Spin together
closely, then surfaces touching the
leaves & poplar & "punk" inside.
Head pale whitish, greener in
front with two black spots on
each side. Horns none. Body
slender, last two segments tapering
whitish green with a few short
pale hairs. Thoracic feet tipped
with black, Cervical spot large
& green, covering the whole of the
top of joint 2. (Very numerous at
Phoenix) with a black spot below
it. Spin a little white silk on woven
between the leaves and turn to light
brown pupa; abd segs. tapering, last rounded
with no crenaster. Segs very slightly
& minutely punctured & wing cases creased.

147 *Phasianae irrorata*

^{Cottonwood}
 Looper on ~~Populus~~ ^{Cottonwood}. Phoenix Arizona
 Nov 16, 1887. Head round, green with
 a yellowish line behind the eyes
 Eyes black, palpi pale. Body cylind-
 rical, abdominal legs on joints 10
 and 13. Color green (with a few short
 fine black hairs visible with a glass)
 Longitudinally finely striated
 with yellowish on dorsum and
 venter and a stigmatal yellow
 band at which the skin is some-
 what folded. This band is con-
 tinued into the last pair of legs
 and joins the line on the head
 Feet green, the tips brownish.
 Cocoon in leaf, thin & thread.

Pupa Brown, abd gently tapering, pro-
 W-cases slightly creased. Crem. legs tapering
 & ending in 2 divergent points.
 Emerges Dec 23 Cut no 4342

148

^{Cottonwood}
 Hyphantria on ~~Populus~~ ^{Cottonwood}, Phoenix Arizona
 Nov 17, 87. Spin web as *H. curvata*
 Bore last moult? Head ^{ventral spot black} neck black. Body
 dark gray, with dorsal & subdorsal
 yellowish ^{subventral} white stripe, ~~stigmatal~~ ^{stigmatal} stripe fainter
 and body at the sides paler than is
 more mottled with yellowish white
 subdorsal spaces, warts reddish or black
 hairs white & few. Legs black. 18 mm
 Molt Nov 19 Head shiny brownish red,
 a black shade in front above the
 mouth white a line over the mouth
 and the ^{few short hairs on the lower part} bases of the palpi are white
 Body black, slightly mottled with
 yellowish, more at the sides, giving
 a gray appearance. Dorsal, subdorsal
 and ^(in subventral space) subventral lines pale yellow
 and ^{the latter wavy} interrupted, warts ① a small
 row next dorsal line situated ant-
 ibly joints 5-12, ② row above subdorsal

Copied
6/5/90

149

On willow in Arroyo Salt River Phoenix
Arizona Nov 28, 1889. Larva pinkish ^{at} all
last stage Phaenura! Body flattened
wider than ³high tapering only very slightly
to the extremities. ^AHead small, pale
testaceous with brownish marks at the
sides and the eyes black, whitish above
the mouth. Body pinkish, an inter-
rupted dorsal and wavy subdorsal
line, a bisected dark cervical spot
and brown shades on 5, 6, 7, 10 posteriorly
11, 12 & 13 ant. fused to s-d line and
partly connected with the dorsal ^{slight shadow on} seg.

Body has 3 rows of piliferous warts ① in
s-d space ② below s-d line 3 substigmatal
① & ② are brownish & bear short hairs
while ③ is orange & bears long ^{whitish} hairs
Spinacles black. Subventral space pink
Venter whitish and smooth. L. 10 mm.

line ③ superstigmatal row ④ sub-
stigmatal, both double on 13. ⑤
and ⑥ subventral rows, only one row
on joints 2-4 and 13, warts dark
orange hairs long thin, white
and ^{radial} brownish, ~~stigmatal~~ longest 10 mm
Venter black, without warts, Spinacles
white. Anterior portion of joint 2 is
bordered with orange. Length 30 mm
On joint 13, ③ ⑤ & ⑥ are coalesced in one large
spot ⑤ is present and ⑥ slight on 12 & 13)
Do not spin a web at this stage

Nov 29 Web between leaves with the
hairs of larva. Web rather thin.

Pupa mahogany red. Resembles *H. cunea*
Ald. contracted at end of wing cases &
thence rounding to cremaster which is
flat transversely with a row of 6 or 8 hooks. Ald. segs. minutely punctured, wing cases
creased. Imago Nov 30 *H. cunea*

① The larva has only 14 feet, the 7th pair missing
very gone (Faton 2, 3, 4, 8, 9, 10, 13)

Young Head whitish with a few bands
and 2 large black spots. Body
pale greenish white marked as
in previous desc. but markings are darker
and there are irregularly shaped pale
brown spots on dorsal joint. 3rd Cervical
spot pale. Warts concolorous with markings
in which they are situated, brown now
pale whitish. Hair pale. L. 6 mm
Cocoon elliptical ^{not strongly white & opaque} pale & a few bits of wood
extending 8 mm x 3 mm. Pupa light
brown, pilose, abd. segs tapering
the last rounded. In overwinter
larvae Dec 23 (Cat. no. 4343-4)

Viola hibernica, Str.

150

Looper on willow Arroyo Salt Lake
Phoenix A.T. Nov 29, '89 Head white
with slight brown marks the most dis-
tinct being a transverse ^{interrupted} band above
the middle of head. Eyes brown, jaws
brownish. A few short fine hairs.
Body has the skin somewhat
wrinkled especially at the sides
and is nearly uniform dirty
white, a few fine short blackish
hairs being distinguishable with
a lens. Length 25 mm
Entered ground Dec 6 and spun slight
web. (Schummacher)

Worm on willow Anago Salt River Phoenix
A.T. Nov 29, 1889. Head semitransparent
pale yellowish white, jaws brown, eyes
black. Cervical spot covering the whole
of joint 2 above the spiracle, concolorous
with head but whiter anteriorly
joint 2, brown below it. Body greenish
white with a geminate dorsal,
subdorsal, stigmatal & subventral
powdery brown lines, the stig.
most distinct and the subventral
faint and more interrupted. Lines
nearly obsolete on joint 13. Body
has a distinct substigmatal fold
and a few fine short white hairs.
Length 12 mm. Spins together the leaves.

Eacles imperialis on live oak, Melbourne
Indian River, Fla. Dec. 19, 1889. Head brownish
testaceous shading pale on the lower half.
Two brown ^{black} marks in front on each side
of the central suture, ^{interrupted at base of triangular plate} diverging basally,
a similar wider line on sides of head
crossing the eyes. A few short white hairs.
Cervical spot pale testaceous with 4 gran-
ulated short processes on antec. edge and
long. Anal plates ochre yellow, strongly
granulated & elevated at the edges &
the upper brown centrally, the lower
black, except the granulation. Body
furnished with many granulated
processes resembling short horns of a
dark ochre yellow color in sub.d. supra
the latter small stig. & 2 subventral rows, those on joints
3 & 4 being longest esp. the subdorsal ones
while joint 12 has one long one, dorsal

Other slender ones occur about the
spruces and on venters. Body has
many long dark hair and short
pale ones. Spiracles on joint 5, 2, 5-12
yellow & surrounded by a dark
shade except the one on joint 2.
Color of body yellow brown, with ^{light brown spiracles}
a pink shade on dorsum esp. on
joints 3 & 4. Venter darker. Thorax
faint ochre brownish hairy. Clasper &
abd. feet ^{mostly} black. L. 75 mm.
An obscure dark dorsal shade
shows between the segments.
Another Central Park, N.Y. Oct 6, '90 Hd high
than wide, rounded, flattened in front, abso-
lutely shagreened; clypeus small, slightly
laterally indented. Hd green, dark yellow
bet the black bands in front. The lateral
band obsolete for its superior base. Mouth
parts, the feet, lower part of abd. feet horns
& hood horns to all anal plates dark
yellow. W. hd 1.7 mm. Body fine deep green
darker ventrally, clasper & abd feet
black, as are anal plates centrally
except the granulations. L. 70 mm

153

Edema on deciduous oak, Melbourne
Fla. Dec. 19, '89. Head much larger than
joint 2, shiny orange red, paler in the
lower part. A few hair seen by lens.
Body smooth & shiny with a few short
hairs. On joint 12 a transverse fold
forming a hump on dorsum, orange.
All feet & anal plates also orange.
A sub-d. & stig. yellow band the
former partly replaced by white and
the latter by orange. Body pale
purplish, 4 narrow slightly wavy
lines of ground color ^{in s.d. space} bet. s-d lines
separated by black somewhat inter-
ruptedly. Same ^{in stig. space} bet. s-d & stig. but
the black is much broken up &
replaced by ground color making
a black line centrally, is most distinct
the lines confluent. Black marks
on subventral space ^{similar to those in other} and a just

13 the black is much broken up, the ground color is nearly white and the subd. line is obsolete. Venter orange, whitish centrally with a fine black line. L. abt. 25^{mm}
Nov 21 Dec 21 Same, but ground color is a pale blue, and hump on 12 is darker orange, more like head. Anal feet elevated when not walking. Toward maturity the markings of dorsal space between segs. are obscured by a purplish flush & s-d. line has little tinge of orange. L. 35^{mm} at molt 40^{mm}. The subdorsal line does not go on joint 2. The black of s-d space is much broken up, giving the appearance of many thin brown Dec 30 as in *Edema albimanus*.

Images Feb 25 '90 cat no 4608

Edema

Copied in common
larva took 7/24/90

BB 154 A. 17. Body black. Head irregularly black in front, brownish at the sides & vertex, mouth parts & palpi reddish, warts as in the arctiidae (see BB 148) with small ones on legless segments, brownish on the black hairy legs. Antennae from the sub-stig & sub-central segments after joint 6. Body velvety black with a transverse vermillion suture between each segment when the body is contracted. Feet reddish. Squidulae a pair on each segment. Subventral apical brownish black brown. Anterior legs subantennal, small, curved behind. Tarsus of dorsal legs. (over)

width heads by cael. .5 .7 1.0 1.4 (come out 2)
 A2 B2.8 C4 D5.3 E7
 (See last page of book)

♂ does not have last stage E. D. of a nearly blackish dorsal line.

Nov 25 Same but body and head black and on trace of dorsal line, except a small conical spot. The transverse bands are numerous protruding, the first being very narrow 2.60 mm. Head brownish black, with pale line in center of vertex and pale spot on side of vertex. Narrow dorsal line with salmon color but not prominent. Body with warts and dark brown black. The head. Hairs are darker red than body. Palps orange. Thoracic feet brownish red. Abdominal brown, the lower part yellowish. Claspers whitish. Length 85 mm. Jan 4 90 mm. Feb 4 95 mm. This setting of yellowish dots with amber beads at joinings. Robust, 7 anal shades in the dorsal (subventral) line. 10 rows of large tubs

mat. varies from dark green, color of leaves brown. Green has marks of brown. S-d line usually bright, but in folds pale, making s-d line as much as in previous stage. 153.

Euphorbia cyathophora
 Spring on red-green leaf, Palm Beach Fla. Dec 21 89. Looks like *Thyrsus*. Head somewhat flattened laterally. White the sutures marked with black. The following black marks a short line in center of plate, basally 2 shaded on either side of central suture converging slightly ventrally. A line of base of palpi, dilated centrally, is blended inwardly; a short line crossing the eyes; a line on the posterior portion of the side of the head. Palps tipped with reddish. Head minutely & sparsely pilose. (Caudal horn is a conical rounded tubercle from an elevated base, white. Body purplish gray with many round small diffuse yellowish spots and longitudinal short wavy black line between them.)

smaller ventral & dorsal lines. Two pairs of small blackish spots on the head. The dorsal line is a narrow blackish line. The transverse bands are numerous protruding, the first being very narrow 2.60 mm. Head brownish black, with pale line in center of vertex and pale spot on side of vertex. Narrow dorsal line with salmon color but not prominent. Body with warts and dark brown black. The head. Hairs are darker red than body. Palps orange. Thoracic feet brownish red. Abdominal brown, the lower part yellowish. Claspers whitish. Length 85 mm. Jan 4 90 mm. Feb 4 95 mm. This setting of yellowish dots with amber beads at joinings. Robust, 7 anal shades in the dorsal (subventral) line. 10 rows of large tubs

Or head yellowish to light blue
to those when ⁱⁿ ^{the} ^{mouth} ^{is} ^{open} ^{the} ^{color} ^{is} ^{blue}
dorsally, ^{bluish} ^{laterally} ^{marked} ^{same}
more pronounced above and dorsal
line ^{forming its border} converging on joint 3 and
forming continuation of the line
of the head. This line also covers
on j. 12 & ends at the horns
A series of black shady spots on
joints 5-11 inc. anteriorly dorsal
laterally & especially in patches
bet. segs super-stigmatal the
yellowish spots are pale and
enlarged, some partly confluent,
giving the body a pale appearance
at the same time the black lines
are finer and more diffuse
The dorsum of joint 2 imitates the
marking of the head, having
a dorsal line, & the s-d space
filled in with a dull olive
shading below it. It has a
broad white band. Joint 3 is

when disturbed the larva draws
down its head and shows the mark
and moves its ^{head} body violently from
side to side.

suppressed over the dorsum with
a nearly uniform purplish flush
but the markings reappear on
the posterior part widened and
more diffuse, ^{paler in fold 8/13} and end on the
fold on vent. part of j. 4, which
has nearly concealed a solid black
spot, marked by a narrow blue line
surrounded by a white ring and
this nearly enclosed by an olive
brown shade replaced by pinkish to
white pale, black marks nearly
lost. Thor. feet white with 3
black rings. ^{Antennae larger than 7-9} abd. on joints 7-10
as follows. Base white; then broad
velvety black stripes; then powdery
blue stripe; a yellowish one
edged by narrow blackish line &
a white band followed by a black line and the
broad olive gray band, and
claspers white. Anal feet
unornamented, the plates
yellowish gray with rather few

Horn pale yellow, reddish at
 base, mid-ventral, shiny, the
 shines brown. 2 mm.

pupa Feb 14 of similar shape to pupa 88164
 but much more robust and less highly
 marked after the same pattern in
 black and red brown but the black
 is very extensive covering nearly the
 whole pupa. Color black, very shiny
 marked obscurely with red brown on
 the veins of the wing cases and on the
 leg cases, a curved line at back part
 of thorax, and more distinctly with
 a wavy narrow band around each
 of the anterior abdominal segments.
 Body punctured bet. segs. wing cases ^{8th day}
~~obscurely~~ creased. Genae flat
 somewhat rounding above & below
 broad at base and tapering evenly
 to the point; densely punctured.
 Length pupa 55 mm. width 13 mm
 Imago, March 13 Cat no 4646

Dilophonota rillo
 (Coll at St Augustine)
 (Nat Mus)
 (JBS mmo)

BB1550
 elongated, a narrow pale whitish band below eyes. Eyes black
 mouth a little pale. Palpi reddish. Four minute hairs. Width 3 mm
 the 3 ant. pair of abd. feet are less strongly developed than the last pair
 Body whitish green with many yellowish round spots separated by
 thin black lines. Head on broadening part. Length 2 mm
 Hatched Jan 20 Head pale yellow, mouth paler, eyes black Body pale green
 with dark dorsal shade. Caudal horn black 2 mm. Larva 6 mm. - A
 longitudinal crinkly, interwoven black lines which are fainter
 on sides & obsolete on venter. Head pale yellow band narrowly edged
 above with black. next on joint 2, ending at caudal horn.
 Trace of dorsal line on joint 3

Laid Dec 31, 10:15 a.m.
 Hatched Jan 4 8:15 a.m.

156

Pile of 4 eggs laid by *Endanina proteus*
 on back of leaf of yellow flower bean
 vine, Palm Beach, Fla. Dec 22, 1889.
 Eggs Irregularly spherical, the upper
 $\frac{3}{4}$ with 11 vertical ridges running
 to an elevated ring that surrounds
 the summit. ^{Pale yellow}
 the summit. ^{Lower half yellow}
~~upper black (in larva)~~ Diam. 9 mm
 Hatched Dec 23 Head much larger than
 any other joint, slightly notched at
 summit, dark brownish black. Joint
 2 above concolorous with head. Body
 yellow, more greenish on dorsum. L. 2.5 mm
 after a day they had eaten 2 shots
 on the side of the leaf & bent over the
 portion between securing it by threads
 Right under this, on the upper part.
 Hatched Dec 26 Head & concolorous mark as
 before but very minutely dotted with

yellow. Body greenish yellow, densely covered by small yellow granulations. a dorsal greenish line & subdorsal yellow one, both absent on joint 13

Built second house Dec 27

Moult Dec 31 Head brown black, roughened with many minute points. Cervical spot on upper half of joint 2 concolorous but smooth. Body yellowish green, thickly dotted with yellow & yellow subdorsal line, but leaving darker dorsal line. Joint 12 tinged with orange, and joint 13 on anal plate unornamented. L. 7 mm

Built third house Jan 1, 1890.

Moult Jan 4 Head dark brown, minutely punctured. A large quadrate orange patch between eyes & jaws. Cervical spot shining brown black; the rest of joint 2 orange. Body dark green, thickly covered with small yellow spots, but leaving

darker dorsal line and obscure subdorsal. A distinct even yellow subdorsal band becoming diffuse and orange at joint 12 & 13 and becoming anal plate. Subventral fold pale green, bearing numerous spots. The wings are small, subdorsal fold pale orange, slightly outwards. Joint 15 with brownish dorsal line. Head large, little depressed at top. Somewhat sparsely granulated. Black for a space above, the quadrate orange red spot before eyes, connected narrowly with the thoracic portion. Joint 2 black above, narrow red sides & below. Body flattened at joint 13, pale green, thickly covered over dorsum with many small black and yellow spots, only black ones in the space between eyes & jaws. Black dorsal line, yellow subdorsal band, orange on joint 13 and broader anal plate. White in green band in a central spot. Spiracles dull pinkish. 21, but black. Abd. large and outwards. 230 mm. Paper Jan 27 in covering of leaves held by the spider & driven tightly with silk with thread around it. & cremaster in throat.

157

Egg of *Pieris monista*? on pepper grass
Dec. 23, '89 Egg spindle shape, 9 vertical
ribs, coarsening at summit, yellow.

on upper surface of leaf. Height abt. 12 mm
another got Dec 30, hatched Jan 3.

Head round, pale yellowish between
eyes & mouth brown. Body pale yellow
with fine black hair, longest at
the extremities. Eat egg shell. $2\frac{1}{2}$ mm

Before last moult? Head with many
elevated black spots bearing white hair.
Cervical spot black, bristled, covered by
black conical piliferous tubercles. Body
has dorsal, subdorsal and stig. yellow
bands; the a-d spaces are yellow green,
the stigmal spaces pale blue, venter
dull green. Joints 3-13 have a row of large
black elevated spots in a-d space, and
a similar row in upper part of stig. space

doubled in joints 3 & 4. These bear each
a short black hair. Body is covered by
numerous small piliferous black dots.
Spiracles black. Length 18 mm

Moult Jan 12 Head dull yellow, a
brighter patch before the eyes. Covered by
many elevated black spots bearing hair.
Thoracic feet tipped with black. Spots
in rows are conical tubercles. Otherwise
same as preceding. Length 25 mm

Suspended Jan 15 (Pupa smashed)

Probably *Pieris monista*

BB154 cluck

♀ BB154 out Feb 4 '90 mated night of Feb 4-5, laid eggs evening Feb. 6 about 400 (in all 2274) finished night 10-11

Egg nearly spherical, base a little flattened, minutely punctured. color yellowish pearly gray. Diam. 8 mm

Hatched Feb 18 Head light brown, paler in front. Eyes large black. Warts 5 mm Body pale whitish except joints 5, 6, 9, 10 & 11 which are light brown. Warts concolorous, hair black. Length 2 mm

Molt Feb 23 Head nearly colorless, tinged with brown. Eyes large black. Warts 6 mm. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joint 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

Molt March 1 Head 8 mm. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joint 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

Molt Feb 26 Head 8 mm. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joint 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

Molt March 1 Head 8 mm. Body same as head but not shiny, tinged with reddish brown. Warts 10 from joint 5, 6, 9, 10 & 11 black. Hair black. Length 3 mm

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darken shade at vertex

The supposed ♂ pupa came out ♀ and this description needs more observations.

San D. chumacensis in Devin Col.
July 23, '89