

Always bring this Book.

Descriptions
of
Lepidopterous Larvae
continued from
BLUE BOOK
158 to 196.

RHINEBECK, N. Y.

BB 158

10

On a vine, tendrils bearing, cork stemmed
round leaf. Palm Beach, Fla. Dec 1889.

Hatched Dec 25 Head round, yellow testaceous
with a few black hairs. Body yellow
with 6 longitudinal rows of elevated
spots bearing black hairs.

Mount Dec 28 Head pale yellow, shining,
eyes & mouth black. Two black spines
from vertex with black hairs. Body
shining ochre, greenish on dorsum,
with rows of black spines beset by hairs
① in sd space, ② superstigmatal ③ in sub-
ventral sp. This on 5-12. On the next
cervical spot black, bisected, bet 2 & 3
bet 3 & 4 superstig. spines; on 3 & 4 sd
spines; joint 13 has 2 pair sd ant &
superstig. post.

Mount Dec 31 Head pale yellowish, the
spines & four spots & jaws black. The
spots are on each side of s plate above
it and over the eyes. Body whitish

on dorsum, yellowish beneath, with many black spots. Spines & cervical spot black & furnished with fine hairs. Legs spotted ^{with} black. Length 8 mm.

Moult Jan 3 Head white, marked as before a few black hairs. Body white, many rather large black spots. The bases of subventral spines & spiracles surrounded by orange. Spiracles black. Venter greenish. Top of thoracic feet black, abdominal semitransparent greenish orange, with 2 black marks, claspers whitish. Spines as before, black. An elevated black spot above base of each thoracic foot. L. 15 mm.

Moult Jan 6 Head as before, a black line on posterior portion, concealed by joint 2. a few short black hairs. Body white as before. The spots are a dorsal row & 5 alternating rows on the sides the last subventral. Venter greenish. Leg dull orange with black marks. Length 20 mm.

(Pupa (by tuft) Jan 12. With appendages & flanges as described by W. H. Edwards.)
Imagines

Heliconia charitonia.

Copied Apr 22 '90

Copied Dec 18 '90

159

Hesperid larva on *Alternanthera*
versicolor, Palm Beach, Dec 27, 1889.

When young make house as *E.*
posticus but turns the part under
usually. Large, spins up several
leaves. Head as large as any part
of body, cordate, dull black, closely
covered with short white hair.

Palpi & mouth brownish & pale. Joint
2 is very small, not more than half
as high as head, thence the body
thickens to about joints 8 & 9, then
tapers somewhat to extremity. It is
of about uniform width except joint 2
which is very narrow. Body has a
slight subventral fold. Upper half
of joint 2 covered by a pale brown
conical spot. Body dirty greenish
yellow with many pale yellow spots
segregated to form an obscure S-d
line, & dark dorsal shade.

Pupa enclosed in a leaf by few threads
Cremaster fastened in some transverse
threads. Resembles in shape pupa of
Eudamus. Eyes prominent pilose, a
brown elevated spot above them
back of antenna case. Color dull
yellow, covered by a white bloom
Cremaster flat & hairy.

Imago Jan 14

Phobocera hayhurstii.

160

Newly hatched? or notched leaf
weed, Palm Beach, Dec 27, '39. Egg eaten.

Larva. Long for thickness, all semi-
transparent whitish, green food
seen through. Length 2 mm. Retracted

bit. segs. Spins some patches of web on leaf.
Moult Dec 30 Same. Black s-d spot on
joints 3 & 4. Length 8 mm.

Moult to Jan 5 Same. Eyes & jaws brown.
Spots on joints 3 & 4. Length 18 mm. Has

row of s-d diffuse red-brown spots
nearly connected to form bands &

brown marks on head. J. Jan 9 in
silk, spinning up leaf. Pupa Jan 11

Slender, head rather small. Light
brown red, cremaster long thick
dark brown spine.

No imagines

161

On *Crotalaria* sp. Dec 28 '39 Palm Beach
Head orange red, paler in the sutures.

Band above mouth white, eyes
black, mouth brownish, a few black

hairs. Body orange, a large irregular
black patch centrally on each seg.

extending over dorsum between the
stigmatal bands, largely replaced

by 8 white spots, 2 dorsal of which the
anterior is longitudinal, the post.

transverse, & 3 in s-d space, following
around the edge of the black patch.

The spots are smaller and less
separately defined at the extreme

segments. An interrupted white
stigmatal band. Black & white

spots in subventral space. Thoracic
feet black, ringed with white, and

abd. outwardly black. Venter with
transverse yellowish streaks. Each

seg. has 10 elevated spots in two

alternating rows bearing a single long white or black hair. But spots in subventral space carry 2 or more hairs. Length 23 mm. On Jan 5 spun considerable thin web of white silk in center of which pupate Jan 6. Pupa depressed behind thorax, abdomen arched. Wing cases prominent posteriorly. Abd. punctured. Wing cases very slightly creased. Color light shiny reddish brown, marked with black on antennae cases, leg cases and on veins of wing cases, on collar & 6 streaks on thorax. A somewhat irregular transverse band on each abd. seg. connected subdorsally & avoiding the black spiracles. Crenate several long spring hairs set rather far apart.

Imago Jan 19

Deiopeia bella

BB161A On *Sophora tomentosa*. Head black, a few white hairs. Body orange few long white hairs from black elevated spots surrounded by white, gathered together subdorsal & 2 subventral cervical spot & anal plates marked black & white. Joint 13 has dorsal, s-d & subventral connected by white. Feet black, abd. outwardly. Moult Jan 2 As BB161 but head still black and orange down dorsal line, dividing the spots & stig. band yellowish white. Web Jan 12 (no pupa)

BB161B On same plant. Head black, body greenish. Web, but no pupa. (from memory)

vars of preceding?

W! *Meayna reversalis* H.S.D.

Apr 9 1900

162

Partly curls up leaf & red-stem-orange leaf
& spins web over the top. Palm Beach Dec 28/09
Head orange, palpi whitish; jaws eyes &
ends of palpi black. A few rather long
pale hairs. Body tapers posteriorly,
semitransparent shiny dull greenish
showing the inside parts, with a s-d. &
stig. orange yellow band. Cervical spot
nearly white with many irregular
black spots. On joints 3 & 4 are a pair
and on 5-12 two pair of black spots
in s-d. sp. edged with white leaving
centrally a white spot in which
is an elevated black spot bearing
a fine white hair. On 12 is a
single dorsal black spot with a
double crescent white mark and
the anal plate on joint 13 is like
cervical spot. On joint 2 ant. stig.
are a few black spots and 2 ant
on 4 in stig. sp. There is a row

of similar black, white edged spots
above stigmatal line and 2 in sub-
ventral space, the upper row of which
is doubled on joints 3 & 4, placed w
stig. line, the bases of the legs are
similarly ornamented & there are
corresponding spots on the legless segs.,
supplemented by 2 small black ones
on the venter. Thoracic feet black. L 30^{mm}
cocoon Dec 31 spun in leaf several
thicknesses of web. Pupa Antennae case
extend beyond others over abd. sep-
arate from it. Pale brown, cases
darker.

(No imago)

Food plant 'fiddle wood' Citharexylum villosum
(det. by Mr. F. Kinzleb)

Moth Bred by Mrs. Slosser and presented
to me April 23 1896. Cat. no. 12109

1 Mine Miami Fla. Jan 1898. Out Feb 26 1898
2 Cat. no. 14919 *Epi. melaleuca*

Scut

163

See Insect Life vol II, page 361

On rubber tree, Ficus pedunculata, at Palm Beach, Fla Dec 29, 1889. Mature.

1 Young. Molt Jan 16 Mature. Head 3^{mm}

2 Young Head 1.7mm Molt Jan 29 Hd 2.2^{mm}

Molt Feb 4 Hd 3^{mm} Coon Feb 16 Pupa Feb 12*

Found several larvae and made

1st stage Hd. .4	3rd stage Hd. .7
2nd stage Hd. .5	4th stage Hd. .9

Larva (A) 1st stg Hd. .4 Molt Feb 21 Hd. .5

Molt Feb 24 Hd. .7 ~~Molt Feb 24 Hd. .7~~

Molt Feb 27 Hd. .9 Molt Mch 2 Hd 1.2

Molt Mch 7 Hd 1.6 (dead)

Larva (B) 4th? stage Hd. .9 Molt Feb 21 Hd 1+

Molt Feb 24 Hd. 1.6 Molt Feb 28 Hd 2.3

Molt Mch 6 Hd. 3 (dead)

width heads by calculation:—

①.40 ②.53 ③.69 ④.89 ⑤ 1.16 ⑥ 1.6 ⑦ 2.2 ⑧ 3^{mm}

*Imago Jan 13

Scepsis edwardsii

Scut

164

See Entomologica Americana vol. II, pg. 141

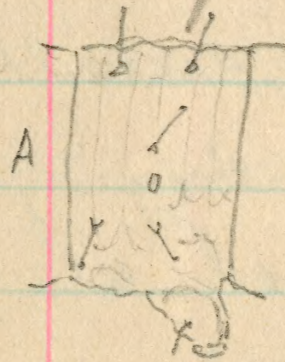
Spring on Carica papaya, Palm Beach Dec 30, '89. Eggs; young larvae. A mature larva Jan 2, pupated soon and gave

imago Jan 26. Egg hatched Jan 4,

Molt Jan 8, Molt Jan 12, Molt Jan 17, Molt Jan 24, Mature.

Pupa after Feb 1 and Imago Mch 11.

Silophonota edwardsii



165

On *Melothris grandula*, Palm Beach
Dec 30 '89. Spins kind of house. Head
pale green, the Δ plate long. Mouth
whitish, eyes black. Body shining
leaf green with s-d white line.

Spines small, whitish. L 13 mm
The body is rather short and fat,
cylindrical; but tapering, most
decidedly towards anal end.

Furnished with a few short hairs.

Pupa (BB169) Head jointed, smaller
at neck, narrower than body. Eyes
somewhat prominent. Body slender
cylindrical, tapering to cremaster, ^{while is}
flat below, rounded above, of nearly
uniform width but rounded at the
end, with a bundle of spines
fastened in silk of cocoon. The
antennae & legs cases form a flat
projection beyond the wing cases
separated from the abdomen

extending nearly to the last abd.
segment. Body minutely wrinkled,
wing cases nearly smooth. Color,
light brown, last seg nearly black
cocoon of silk in a rolled leaf.
Imagines Cat. nos. 4516, 4518, 4529.

Margaroma infimalis M

166

Leontine eating into head of weed
 of BB160, Palm Beach, Dec 30. Feet on
 joints 2, 3, 4, 10 & 13. Segments projecting
 laterally as in *Eugonia armantaria*
 color yellowish green, minutely
 granulated. Joints 5-9 have s-d
 & j 13 dorsal, a brown excrecence,
 resembling dead skin. Length 4 mm
 Molt Jan 2 Same, but lateral process
 are green branching spines and
 dorsum is much roughened. Next
 day the lateral processes had same
 brown wrinkled appendages of
 varying length & detachable.
 Molt Jan 7 Same. Creased & granulated
 Length 8 mm. (dead)

BB166A On weed Jan 28 Head pale brown,
 minutely pilose. Body as in above
 but light brown with black shades
 & interrupted dorsal line. Two
 reddish points ant. on joints 3-9

& 13. Body minutely granulated; other
 elevated reddish spots laterally
 & fine hairs. Joints 5-9 have sub-
 dorsal processes, composed of pieces
 of dead leaves etc. The larva
 applied several pieces of green leaf
 to its body which subsequently withered,
 also pieces of paper from label.
 Length 4 mm Width head 1 mm
 Cocoon of [unclear] back spun together
 & made on [unclear] the tumbler.
 Pupa Pale wood [unclear] blackish
 dorsal line, a point on each eye,
 a line on antenna cases & eyes
 blackish. Indistinct brownish shades
 & spots on pupa. Cremaster spinose
 Length 8 mm.

Imago Feb 18 Cat. no. 4581



166

Geometrid eating into head of weed
of BB160, Palm Beach, Dec 30. Feet on
joints 2, 3, 4, 10 & 13. Segments projecting
laterally as in *Eugonia amarantaria*
Color yellowish green, minutely
granulated. Joints 5-9 have 8-d
& j 13 dorsal, a brown excrescence,
resembling dead skin. Length 4 mm
Molt Jan 2 Same, but lateral process
are green branching spines and
dorsum is much roughened. Next
day the lateral processes had same
brown wrinkled appendages of
varying lengths & detachable.

Molt Jan 7 Same. Cressed & granulated
Length 8 mm. (dead)

BB166A On weed Jan 28 Head pale brown,
minutely pilose. Body as in above
but light brown with black shades
& interrupted dorsal line. Two
reddish points ant. on joints 3-4

& 13. Body minutely granulated; other
elevated reddish spots laterally
& fine hairs. Joints 5-9 have sub-
dorsal processes, composed of pieces
of dead leaves etc. The larva
applied several pieces of green leaf
to itself which subsequently withered,
also some pieces of paper from label.
Length about 12 mm. In the head 1 mm
cocoon of stuff on back spun together
& made on the side of the tumbler.
Pupa Pale wood brown, a blackish
dorsal line, a point above each eye,
a line on antenna cases & eyes
blackish. Indistinct brownish shades
& spots on pupa. Cremaster spinose
Length 8 mm.

Imago Feb 18 Cat. No. 4581

167

Noctuid on weed, Palm Beach, Jan 6, 1892

All legs present but walks something as
looper. Joint 12 enlarged as in Noctuidae.
Head, triangular plate & mouth plate
dull white; rest a black band edged
with brown & white mottlings which
extend down side of head. Palpi pale
whitish. A few black hairs.

Body above spiracles pale yellowish
brown much mottled & shaded
with dark brown, mainly suggested
in subquadrate alternating confluent
patches. A distinct dorsal yellowish
& a pale yellow interrupted line
edged with dark brown, on joint 12
appearing as pale brown spots edged
with white. In S-d sp. 3 white spots
per seg. the middle one highest, and
above spiracle a yellow spot. On
joints 2, 3, 4, & 13 these spots assume
more the shape of a transverse

line & are all small & white. Cervical
shield spotted with white. An irregular
white stigmatal line edged with
brown. Spiracles black with white
center, resting partly in broad pale
ocherous white substigmatal band
mottled faintly with brown. Two rows
of whitish piliferous subventral dots
on 5-12, only one on 2, 3, 4 & 13, that on
2 large & elevated. Venter dull pale
brownish, marked with dark brown.
Slight spots on legless segments.
Thoracic feet blackish. Length 25 mm.
Cocoon in ground Jan 10 (no pupa)

168

Egg laid by ♀ *D. berenice*, Palm Beach
Fla. Jan 11, 1890 about noon.

Conoidal, vertically ribbed and
finely transversely striated.
Color cream white.

Danaus berenice.

[For 169 see 165]

170

On pepper grass seeds, Palm Beach Fla
Jan 11, 90. Head & thoracic feet black.

Body pale whitish brown, paler at
spiracles & venter. Four rows of black
elevated spots bearing long black
spines in sd. space, stig. sp., stigmatal
and subventral sp., the last two
only slight. Length 6 mm.

Pupa Jan 15 By cremaster in silk on
side of tumbler projecting. Head
small, eyes prominent, thorax
sloping abruptly to head. Body
slender & flexible, 3 flat thin eleva-
tions over head. Cases form a point
separated from abdomen. Thorax
hairy, color dirty yellowish white
greenish on cases; brown stripe
down side.

(No imago)

copied Mch 29, 90

171

See Canadian Entomologist vol. XXII, pg. 211
Hesperiid larva allied to Eudamius
on mangrove tree (Rhizophora mangle)
Palmer Beach to Figulus Fla. Jan. 14, '90.
Later seen near Lake White Inlet
& at Jupiter. Builds house like E.
protens. At last stage spins
together two or more leaves.
Larvae were found 2.5 mm head,
3.8 mm head, & 6 mm head, the
last mature. Also pupae and
hatched egg shells.
Imago Jan 17 (pupa) and others.

Erycides batabanus

172

Lencarctia arcea? on weed Palmer Beach
Fla. Jan 18, '90. Head black, upper part of
 Δ plate, ^{labrum} narrow plate, ^{antennae} palpi & lower part
of mouth, with post. part of head, yellow
a few hairs. Width 2.5 mm. Body mottled
with black & yellowish the latter color
bright in dorsal line, & wide stigmatal
band, elsewhere dull & grayish.
Warts as in Arctinae, three in subdorsal
space (rows 1 & 2) and on legless segs
below (row 3) black, the rest orange. Hair
thin, fine, long & black. Legs black, the tips
yellow. Spiracles white. Length 37 mm
Molt Jan 20. Head same, width mm.
Body black, mottled paler s-v & venter
Hair from s-v. warts brown. Spiracles
white. Thoracic feet black & white;
abd. black, claspers whitish. Other
wise as before. Cocoon Jan 28. Imago
Feb 18 ♀

Lencarctia arcea.

173

Spring on tomato vines, Palm Beach, Fla
Jan 18, '90. Head, round, green of leaf,
slightly greened. Mouth & palpi pink,
eyes black 3. Width head 7 mm (the
stage before 4 mm) Body same green
little yellowish on dorsum with
many small white speckles,
sometimes obsolete. Annulated
On joints 5-11 oblique lateral lines,
white, edged above with short trans.
black streaks, one between each
annulet. These present also on
dorsum continuing lateral lines
except that joint 5 has them
also and on 12 they are absent
but the line continues white to
horn. Horn curved, dark purplish
red, bluish at base, length 8 mm
spiracles white, surrounded by a
narrow black line & pale blue
was, a dark shade outside,

and crossed by a pale red band
with spot centrally. The one on j. 2
plain, all marks faint, black
spot absent. Thoracic feet white
ringed with black; abd. yellowish
Subventral space & venter with
black streaks in the folds. Length
of larva 80 mm.

Pupa "handle" touching middle
of cases. Imago

Phegopteris carolina.

174

See Insect Life vol. II, pg. 360
On oleander, Palm Beach, Fla.

Jan 20, '90. Hd. 2^{mm} Stage before, Hd. 1.5

174A Eggs on oleander Feb 1, '90.

Hatched Feb 6. Width head .4 mm (?)

Molt Feb 11. Head .9 mm.

Molt Feb 17. Head 1+ mm

(same as BB 174)

Imago (174) Feb 13

Heads by calculation —

① .5, ② .8, ③ 1.1, ④ 1.5 ⑤ 2 mm.

Syntomoides epibais

175

Noctuid hidden in grass with head
against ant. abd. feet. Palm Beach Fla
Jan 24 '90. Rets curled up. Thoracic
feet well developed, their bases elevated
abd. only on 9, 10 & 13. Last seg. tapering;
body nearly uniformly cylindrical.
Head elliptical but broad at vertex,
dark velvety brown, mid Δ plate and a
border to it extending from palpi
& following central suture to touch
body, white with a few little brown
streaks. At sides of head, especially
in a stripe covering the eyes the
brown is much replaced by white
mottlings; eyes black, palpi white
mouth parts semi-transparent
whitish. Width 3.5 mm. Body pale
whitish ochre with broad s-d band
of pale brown, a narrower subventral
one somewhat darker & a linear
ventral band, almost black,

These marks are all traversed by several geminata, narrow, wavy & more or less obscure darker brown lines, especially prominent in s-d space & above spiracles. Bod. of 506, 607 the s-d band is interrupted by a velvety black spot with white shades at its edges which extend on dorsum. At these points the wavy lines are more distinct. Spiracles small, dull black. Feet streaked with dark brown. A number of small white & black piliferous spots. Few hairs on head. Walks as looper. Length 40 mm.

(no pupa)

176

Egg on *Carica papaya*, Palm Beach Fla
Jan 31 '90. Nearly hemispherical but slightly conoidal. Base flat. Color pale whitish yellow, shiny. Diam. 7 mm
Laid on underside of leaf in small lot not touching. Hatched Feb 3
Head shiny pale whitish, mouth brown, eyes black. Width .3 mm
Body contracted. Bod. segs. pale whitish with long whitish hairs arising from concolorous warts? Length 2.5 mm.
Head in vertex of egg when hatched.
Eat shell.

(Refused food plant & died)

Can cut
26 18

was lost(?) by Riley
not published
MS 5 Feb 1893
Copied
6/13/90

177

Egg 1894

in Palm Beach Fla, Feb 1 '90

Irregularly spherical, the base flattened
ventrally striated, the striae beginning
irregular near vertex where they meet.
Color pale yellow. Diam. about 5 mm

Laid in a flat mass, touching.

Hatched Feb 5 walk as loopers. Head round
brownish. Body semitransparent whitish
with purple tinge. Small black spots
over body. Thoracic feet black; abd. only on
9, 10 & 13 well developed, concolorous with
body Length 2 mm Width head ⁴ about .2

would eat only grass. began to eat Feb 7,
when grass was given. Green food seen
through. Eat upper part of blade. As stage
progresses cervical spot is brownish & there
are narrow brownish s.d. lateral, stig &
subventral lines. A few fine hairs.

Mon Feb 10 Head semitransparent, almost
colorless, but with a reddish tinge. Eyes
black. jaws brown, a brown line at

side. Width .7 mm (?) Body green, a distinct
brown stigmatal line with 2 more above it
fainter, one s.d., the other in stig. space &
1 below it in s.v. space. Few short black
hairs. Feet all concolorous with body. L 4 mm
Eat the whole blade walk as loopers.

Mon Feb 13 Head shiny pale whitish, 2
faint brownish bands in front, divergent
basally; a distinct band at side of head
covering eyes succeeded by a fainter one
before it. Mouth brownish. Width .9 mm
Body grass green with 5 dark brown lines
on each side, the upper ones fainter, the
stigmatal very distinct, & the subventral
diffuse. Between these last 2 is a broad
white band. Venter more whitish than
body. A few fine short hairs on head &
body. Feet all present but the 2 ant.
pair of the abdominal much less well
developed than the others and the larva
still walks with a looping motion
but less so. Length 7 mm.

MS lost (?) by Riley

not published
H.S. 521 X 553

copied
6/18/90

177

Eggs on window Palm Beach Fla, Feb 1 '90
Irregularly spherical, the base flattened
ventrally striated, the stripes ~~irregular~~
irregular near vertex where they meet.
Color pale yellow. Diam. about 2 mm

Laid in a flat mass, touching.
Hatched Feb 5 walk as loopers. Head round
brownish. Body semitransparent whitish
with purple tinge. Small black spots
over body. Thoracic feet black; abd. only on
9, 10 & 13 well developed, concolorous with
body Length 2 mm with head ⁴ about.

Would eat only grass. Began to eat Feb 7,
when grass was given. Green fecal seen
through. Eat upper part of blade. As stage
progresses cervical spots brownish & there
are narrow brownish s-d, lateral, stig &
subventral lines. A few fine hairs.

Mount Feb 10 Head semitransparent, almost
colorless, but with a reddish tinge. Eyes
black. Iris brown, a brown line at

side. Width .7 mm (?) Body green, a distinct
brown stigmatal line with 2 more above it
fainter, one s-d, the others in stig. space &
1 below it in s-v. space. Few short black
hairs. Feet all concolorous with body. L 4 mm
Eat the whole blade - walk as loopers.

Mount Feb 13 Head shining pale whitish, 2
faint brownish bands in front, divergent
basally; a distinct band at side of head
covering eyes succeeded by a fainter one
before it. Mouth brownish. W. hd. .9 mm
Body grass green with 5 dark brown lines
on each side, the upper ones fainter, the
stigmatal very distinct, & the subventral
diffuse. Between these last 2 is a broad
white band. Venter more whitish than
body. A few fine short hairs on head &
body. Feet all present, but the 2 ant.
pair of the abdominal much less well
developed than the others and the larva
still walks with a looping motion
but less so. Length 7 mm.

4
Moult Feb 17 Head grass green shiny, marked
as before but much paler whitish. A
few short black hairs. Width 1.3 mm.

Body grass green, a geminate dorsal brown
ish line, continuing the front lines of
head; a pale obscure s-d & super-stig.
line each edged with brownish above;
a broad dark brown stig. band, and
below it the sub-stig. Gold is white.

Thoracic feet semitransparent, abd.

claspers brownish. Spiracles on 2 & 12
are white. L 9-13 mm) At this stage

advances a broad brownish-red band
appears in the center of the white sub-stig.
band & the other marks become faint.
J. 12 slightly enlarged as in Noctuidae.

or more rarely Head very pale whitish
brown, marked as above. Body reddish
brown, somewhat mottled with darker
brown. A geminate dorsal line & faint
narrow lines between dorsal line & sub-
stigmatal band which is as above.

5-
Moult Feb 20. Brown form Head very pale
brownish marked with black in a plate.
2 broad lines divergent basally & 3 bands
at the side, connected by mottling ^{as above}

Eyes black; jaws brownish, palpi pale.

A few hairs. Width head 2 mm Body pale
brown mottled with dark brown, more
thickly at dorsal, s-d, & super-stig. lines.

A s-d. row of brown spots, smaller at
extremities. Faint, narrow, irregular, double
whitish, s-d, & super-stig. lines. Broad

purplish brown sub-stig. band edged
both sides with white, ^{extending on plate of J. 12.} Several small

black piliferous spots. Spiracles white
those on 2 & 12 large. Abd feet nearly
equally developed, larva walking in
usual manner; claspers purplish,
& small white spot above base of foot

Larva 15 mm Green form Head pale
green, marked same but fainter.
Eyes black, mouth pale. Body grass
green, finely mottled with white

Faint, narrow, irregular dorsal, double
s-d & sub-stig. white lines. Broad
sub-stig. band as in other forms.

Piliferous spots white & black. Spiracles
as above, claspers of abd. feet brownish
(the brown form comprises nearly $\frac{1}{2}$ at stage)

Mount Feb 24 Head shiny pale whitish
brown, palpi & mouth paler, jaws tipped
black; eyes black. Dors. front of head are
2 broad black bands diverging basally
on either side of plate, & ending before
reaching mouth. These are connected
by sm. things with a fainter band
before the eyes on each side. Behind
the eyes are 5 more bands, irregular &
partly connected. An obscure white
band from base of palpi to next
sub-stig. of body.) Few hairs. W. $\sqrt{}$ mm.
Body pale brown mottled with black
& a little white on dorsum, the latter
mostly in narrow dorsal, s-d, & traces
of other lines, & showing a s-d. row

of black diffuse spots, more distinct
on middle segs. Sub-stig. band pinkish
edged with white, extending onto anal
feet. Piliferous spots few, white, but
black on venter & small. Spiracles
white, edged with black, largest on 2
& 12. Feet tipped with brownish. L. 22^{mm}
at mat.? ground color is rather pale
the sub-stig. band nearly the same color
as body & containing blackish smokes
Length 40 mm.

(All died in sudden vile fluid and
no pupa. May be little insect on
window of that is ♀. Cat. no. 4550)

[Head scale. ①.4, ②.6, ③.9, ④.1.3, ⑤.2, ⑥.3.]

no 4550 is *Agrotis incisiva*.

July 1900

178

On *Sponaxa* sp. Lake with Inlet, Feb 6 1890. Head white with irregular black spots, the largest of them forming a transverse line above s-plate, mouth black. A few black hairs. Width 2.2 mm. Body has pale orange dorsal line edges with purplish black; then bluish white band with faint brownish streaks in center; then pale ochraceous s-d band edged as dorsal; then pale lilac space; then irregular white super-stig. band, edged as dorsal, the lower edging interrupted. Broad orange stigmatal band edged below with white & purple black line. S-v. space & legs dull whitish gray; venter white. Lines partially obsolete on cervical spot & anal plates. Elevated black spots, each with black hair viz 2 rows on cervical spot; row in s-d. space;

Ant Jean Cassan 1898
Anticarsia ferruginea Gu.

on joints 3 & 4 two spots coalesced; on the re

small
 super-
 2, 3 &
 super-
 extra
 subre
 anal
 spots.
 feet
 itself
trous

On thick leaved reed near Jean Cassan N.P. Feb 8 1898

= BB 178

(on *Sponaxa* of same place that died without eating)



Site normal for *Proctos*
 vi of c-oh, pre-appracular of 2
 ii a & ii b rudimentary; v of
 thorax and iv of abd. smaller;
 by plate extra very small.
 Long slender 2 ant pair
 of abd. feet reduced, the
 ant pair (?) must so.
 D. & stig line orange blotched
 edged narrowly with venter

1900

178

On *Opomaea* sp. Luke with Soudy, Feb 6 1890. Head white with irregular black spots, the largest of them forming a transverse line above s-plate, mouth black. A few black hairs. Width 2.2 mm. Body has pale orange dorsal line edges with purplish black; then bluish white band with faint brownish streaks in center; then pale ochreous s-d band edged as dorsal; then pale lilac space; then irregular white super-stig. band, edged as dorsal, the lower edging interrupted. Broad orange stigmatal band edged below with white & purple black line. S-v. space & legs dull whitish gray; venter white. Lines partially obsolete on cervical spot & anal plates. Elevated black spots, each with black hair - viz. 2 rows on cervical spot; row in s-d. space;

Ant from Nassau 1898

Anticarsia ferruginea Gu.

on joints 3 & 4 two spots coalesced; on the rest 2 spots per seg.; on joints 3 & 4 small s-d. spot per seg., smaller super-stig. & 2 per seg. stig. and on 2, 3 & 4 large s-v. velle; on joints 5-13 super-stig. one per seg., sub-stig. situated posteriorly, 1 per seg. & subventral row, 2 per seg. Upper anal plate has 2 rows of small spots. Feet spotted with black. All feet present, but larva humps itself when it walks. Length 25 mm. Host Feb 8

(refused food & died)

Food is Camaralis obtusifolia.

On dark leaved sea bean
Chassen N.P. Feb 8 1898

= BB 178

(On spruce at Salin beach that
died without eating)



Setae normal for Proctos
vi of c-sh, pre-spiracular of 2
ii a & ii b rudimentary; v of
thorax and iv of abd. smaller;
ly plate setae very small.

Long slender 2 ant. pair
of abd. feet reduced, then
ant pair (?) must so.

D. & sty line, orange blotched
edges narrowly with various

horn; sd & supra sty. white
tikensi lined, space between
d. & sd whitish - between
sd. & supra sty. purple shaded
- supra sty & sty. touching -
s-v space purple shaded,
v & vi black, feet pale. D.
tubercles white with black
rings. Hd. whitish, purple
reticulate & with a few
large black dots. w 1.3

Shed Feb 10 Hd 2.1

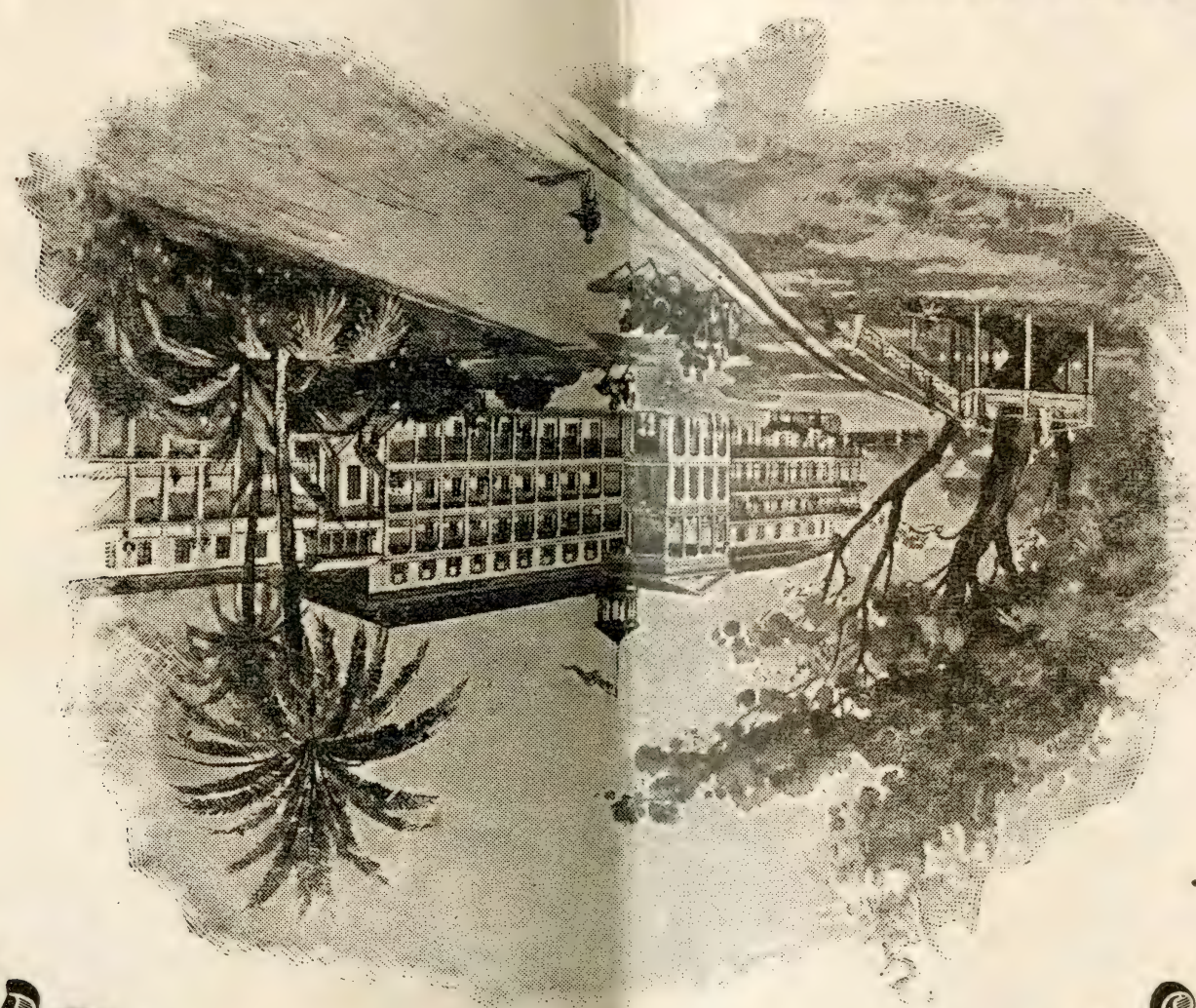
Shed Feb 15 Hd 2.8 whitish, black
spotted & frequent point reticulation
bluish cream color. d. sd orange, dusky
black edged, dilated before eye; a faint
shade between. Lat (iii) & sty. coincident
divided by black line & edged above, below
white, a red dot above iv in sty. Space
between sd. & lat. = to extra & dark
brownish. Sub sty open coincident,
white brightest. s-v & v-cute dark
olivaceous, whitish, slightly lined

tubercle white with black ring
 and center, setae distinct
 dark marginal, base is slender
 13 tapering. Sits on rounded
 very quiet. Ends at right
 5/11/15

189

Nassau, N. P., Bahamas,

Cable Address, "Morton, Nassau."
 New York Address, Care of Hotel Gazette, 945 Broadway.



PROPRIETOR & MANAGER,

Hotel,

Victoria

Royal

S. S. MORTON.

Copied in common larva
book 7/24/90

179

On plum? Jacksonville[†] Fla, March 2, '90
and on peaches Linwood Hill*, April '90.

* Eggs laid in mass around twig &
covered with frothy brown substance
smooth & shiny outside. Egg much
higher than wide, flattened on several
sides as if pressed together, rounded
at base & flat on top? Color brownish
white. They adhere together by the
substance with which they are covered.
Height, .7 mm; width about .4 mm.
April 19*, In little nest on branch
Head .4 mm, round, black, with a few
hairs. Body black, paler on dorsum
& bet. joints, giving appearance of
transverse paler bands. Dark dorsal
line. Few pale hairs. L. 5 mm. Ant.
edge of joint 2, nearly white.

April 22* Head .6 mm, dull black.
Body black, variegated with pale
whitish dorsally but leaving a

black dorsal line, a row of large s-d
black spots. Sides paler black with 2
fine wavy pale lines. Hair fine black
most abundant at extremities. Joint
& show s-d. small black process.

Stage 3, 9 mm head[†] Head black, mouth
little paler. Body black, with obscure
& interrupted dorsal line. A line next
it distinct, two wavy lines above & below
the absent s-d, stigmatal & s-v, all
white, running together between the
segs, partly obsolete on last 2 joints.
Legs black, center gray, few hairs on
body. Length 8 mm.

Stage 4, 14 mm head[†] On Hawthorne? Head
velvety black, narrow plate & base of palpi
slightly paler. Body black, a bluish
white dorsal line its edge uneven.
Next it a yellowish annular band, a
s-d. row of obscure bluish spots, above
& below which is a white band mottled
with the ground color & below fainter

mothings, but showing stig. & a-v. band.
Venter gray. J. 12 humped. Short rather
sparse hair on body whitish. L. 13 mm.
March 2⁺ in nest. Head 2 mm. Velvety
black, pilose, a few long black hairs.
Base of palps & narrow line above mouth
white. Skin of je slightly folded over
head, white anteriorly. Joint 12 some-
what enlarged dorsally. Body has pale
brown hairs growing from skin. Most
numerous from subventral space.
Body black, a white dorsal line joints
3-12 fainter post. speckled with black
& bordered just by a faint crinkly
black line & then by an orange colored
band rather irregular & a little mottled
by black. A row of blue spots (3-12)
2 per seg. less anteriorly, succeeded above
& below by a narrow irregular & inter-
rupted orange tinted line with white
mothings in the folds bet. segs.

These mothings obtain below sd

lines to & on venter. In a-v. space
they are suffused with brownish.
Spiacles black. Legs black with brown
hair L. 30 mm Month 1/2 Head 3 mm
as before but the orange colored band
is more broken up in long. streak
the blue spots are more distinct,
the ant. one 0, the post. 0, the lines
above & below them are orange & the
mothings blue. Hair more abundant
pale brown. Cervical spot yellowish cen-
trally. Cocoon of silks, rather thin,
but hard above. Larva concealed by
yellowish opaque liquid which dries
in powder on inside of cocoons.

Pupa Cylindrical, foot. abd. segs. rapidly
tapering the last rounded, in remanent
color black with pilose of sandy
covered by brown (white matter from cocoon)
Cues with ant hair black. L. 20 mm

Calisivocampa americana?

3 6 9 1.6 3
calc 4 6 10 1.2 2.5 3.6

copied
2/5/91

foot rows 4 no
on 4 and feet
except row
2 in rows

180

(curvicauda) 180
An sweet brian May 3, 90. Linnwood Hill
Head shiny pale yellow, mouth orange,
eyes black. W. 3 mm. Loops. Abd. feet
dist. only on 9, 10 & 13. Body whitish
appearing green from food within,
with many black piliferous dots.
Length 4 mm. Joint 12 a little swollen.
Cercal spot as head but fainter.

Molt May ^{II} Hd shiny whitish. Eyes black
mouth brown. W. 6 mm. Body dark green
above, pale below, humped at 12, & feet
on 7 & 8 small & unused. A dorsal, s-d, &
stig. white lines, the latter broad &
blending below into color of venter.

A number of minute black piliferous dots,
few fine hairs on head. L. 6 mm.

Molt May ^{III} Hd. dull pale yellow all white
eyes black, mouth brown. W. 9 mm. Body
same color but more yellow showing
green from unincubated food & clear cut
dorsal, s-d, & broader sub-stig. line

below the latter and body is pale. Dorsal
s-d. space 2 white spots per seg each
with a minute black center. Feet
on 7 & 8 rather better developed. L. 11 mm

Molt May ^{IV} Hd dull pale whitish, mouth
a little brownish, eyes black, rigid, whitish
white, a few pale hairs. Parth. under cover of
1, 2. Width 6 mm. Body pale with transparent
yellow above & green. Dorsal, s-d & stig. white
lines, the latter larger & broader
above with dark green. White piliferous
dots with minute black center, about 2 per
seg. in each of the spaces. Feet all present
& nearly equally developed, joint 12 enlarged. L. 15 mm

(head) Molt May ^V Hd 3 mm minute brownish
eyes black green, a few hairs. Body yellow
green speckled with pale yellow. A
yellowish white dorsal line, a faint
brown s-d, a narrow stig. below spiracle
on jr & 12, above on the rest ^{extending} on all feet.
Spiracles white with fine black oval
all feet, L. 30 mm (another whitish speckled)

some white but

Entered ground June 4.

Pupa (line July 6) Cylindrical, abd segs slightly tapering, cremaster & two sharp spines divergent. Body punctured. Color red brown darker in the anterior on the dors. L. 16 mm In cell in ground - not deep. On dorsum just to each of 3 anterior segs & also just to one before them a row of large deep punctures, becoming smaller towards the sides & not reaching beyond dorsal half. Cases wrinkled.

Imago Jan 10, 1891. Cat. No. 5344

Taeniocampa alia (JBS)

Anther Feb 13 1891

On long leaf May 30 '90. Noctuid. Head whitish orange, mouth dark. W. 4^{mm}

Body whitish, food showing green, shiny with many small black piliferous dots. Feet on 9, 10 & 13. Loops L. 5 mm. Rather long and slim. joint 12 little enlarged.

[181A head whitish with mouth darker and a black streak above it, eyes black. W. 6^{mm} Body whitish green, dorsal subdorsal & stig narrow white line. Feet all present. L. 8 mm] [A 1900]

May 31 In shade on ground. Head whitish green above W. 7 mm. Body same as [

most June 1 Head pale orange, mouth dark eyes black W. 6 mm. Body green with black piliferous dots. D. 5-d & stig white line. The lower sides. Length 7 mm Loops 6 feet

[A molt on 4 Hd. shiny greenish white on the dorsum, eyes black in white rings greatly under skin of feet, legs W. 15 mm Body pale yellowish white, d. 5-d & stig late green

one in stigmatal space

later quite distinct and an interrupted

white lines & traces of line in S-V sp. A number of white piliferous spots scattered later 1 per seg in S-d sp. jaws 12 little enlarged. S-pale white in brown oval. telapies of abd. feet brownish. L. 12 mm. all feet present.

Molt June 5 Hd. brownish, smooth orange eyes black. 2 large round black spots on each side not quite touching, one above the eyes, the other below it in a little lower than it beside S seg. W. 9 mm Body blackish green, a narrow dorsal white line, narrower S-d, line follows by a black shade to the broader stig. line.

Feet pale, clasping, abd. feet black. All feet joint 12 enlarged. L. 10 mm. Venter whitish

Molt June 8 Hd. ^{pale brown} whitish, with a few minute faint brown flecks. Mouth and eyes brown. Round black spots as before

W. 1.5 mm Body as before but black shade extends also a little above S-d line that is throughout somewhat mottled. Stig. line obscurely double. Spinules ^{small} white in

Hd. by calce ①.4, ②.6, ③.1.0, ④.1.6, ⑤.2.4, ⑥.3.6.

181	4	.6	.9	1.5	2.4	3.5
181A	-	.6	.9	1.6	2.4	3.5

fine black oval. Venter a feet pale. L. ^{juv. black}

[A Molt June 8 Hd. pale green, smooth white eyes black on white ground. A few dark hair W. 2.4 mm Body translucent green, a dorsal S-d & stig. sharp edged white lines a little interrupted. On 5-12 in S-d space on each seg. a white spot with minute black piliferous center, a broken white line in stig. sp. and another more continuous in S-V sp. a few short hair L. 2.0]

Molt June 12 Hd. pale brown, darker in the ^{antennae} & around mouth palpi pale. Black spots as before but augmented by a very small one above the vent spot. W. 2.4 mm

Body above greenish, ^{later pale brown} but thickly mottled with black especially in stig. spaces. A narrow interrupted dorsal & traces of S-d whitish lines. A broad white also ^{later brownish} replaced by greenish centrally. Venter whitish green, ^{later pale dirty whitish with white feet} spiracles edged finely by brown. Legs concolorous with venter.

[A Molt June 15 Head as before except no

182

Egg laid by ♀ *Eudamias tityrus* June 16, 1890
Spherical with a little elongate, the base flat,
ventrally ribbed ending in a little circle
around summit, ^{with little rope elevations in center} a very minute trans-
versely striated. Diameter .8 mm

Hatched June 24 Head round, black,
sparsely pilose width .6 mm. Body
contracted at joint 2 which is dark
brown above, the rest dirty yellow. L. 2.5 mm
on leaf of rose and shade house

Molt June 28 Hd black, punctured
W. 1.1 mm joint 2 shiny black. Body
pale green dotted with yellow
with blue at the sides of joint 12.

Thoracic feet black. Length 6 mm

Molt July 2 Head sub-cordate punctured
dark purplish black W. 1.8 mm. Crest
on upper half of joint 2 same color but
shiny, rest of joint crimson, thoracic
feet black. Body dull yellow, thickly
speckled with small yellow dots

but leaving a darker dorsal line, the
sides of the last 2 segs. touched with
red. Body taper a little posteriorly,
abd. feet color brown body. L. 10 mm

Molt July 7 Hd nearly round, shagreened
dark purplish black, jaws shiny black
before whitish eyes a large round buff
patch. W. hd. 2.5 mm Body as before

[Another hd 1.7 mm, molt Hd. round, strongly
depressed on top, shagreened, pilose, as above
eyes black however. W. 3.2 Body dark green

with small yellow granulations and many
yellowish transverse narrow streaks on
the dorsum, on each seg. a black band
to the sides, broadly interrupted on the
dorsum and supplemented by a spot

in subventral region and trace of two
more narrower parallel bands. Last
seg. orange, ^{margin} ~~with~~ black. Joint 2 crimson
its spiracle & shiny spots black. Tho.

feet of jr dull crimson, ^{then} ~~then~~ ^{yellow}
reddish; abd little yellowish; venter pale

Molt Aug 5 - hd dark red brown, densely granulated, minutely pilose. A large round mark spot each side mouth. Tan black, red pale on black ground W 4.7 mm Body. Spot shiny dark with red red; 2 cardiac spiracle black. Body yellow with many transverse pale greyish lines becoming irregular in stigmatal regions. On each side a trans. black band, surface of greyish on dorsum & white above. Spiracles black. Black ventral pale. The feet a bit dark orange on 3rd & 4th. Last abd seg copper red. Anal plate greyish with orange. The grey bands tend a little to black at the sides.

Coon Aug 22, rears held together by threads

Larva Aug 24 cylindrical, thorax robust, wing cases large, eyes prominent, thorax arched, depressed behind it, abd segs rapidly rounded from below, last seg blunt, ochraceous. Body large, curved down and scattered in its terminal hooks in trans. threads other which give pupa. An elongated velvet black spot above each seg, & another smaller one above on the side with this, each side, color red brown, rather light on body, covered by a dull greenish bloom on thorax & cases, slightly covered by fine black lines principally in a series longitudinal & transverse, the black threads dotted with black. Curvature black. L 2.2 mm W 8 mm

Insects March 5 1891

Carduus tityrus

antenna pale; shiny; 182 body pale dull yellowish speckled with blackish, dorsum (5-12) & venter black. warts ① ant. stig post ② present also on 13 ant. but very small - large pale dark on venter. Hair abundant of inc. also in the foxy red, blackish on 8 & 3 head. The feet pale spiracles abd. shiny black ant. white

Eggs laid by *Spilocoma ruginosa* June 18, 1890. (Laid in small patches on back of leaf on window curtains)

Egg oblong conical, the base flat. Shiny but appearing minutely granulated. Color yellow. Diam. .7 mm.

Head Sept 28. Hd pale testaceous, largely black except on sutures, labrum, and etc. see number some above

183 cont. Molt Aug 3 Hd green, antenna 5 pl & 2 limb with three above & eye black. Ant. pale with 2 winged black, jaws blackish W 3.4 mm Body green indistinct, showing whitest of 2-5-d line. A broad brown stry band edged with white with plainly below. Feet brownish, shining white in side black ring. Spiracles very dark topped by hair green, the tips black.

Molt Aug 12 Hd green, labrum, outside of joint ant. black whitish, jaws & eye black W 3.1 Body whitish green immaculate, a broad brown stry band 5-13, spotted minutely with yellowish & very distinct. Anterior border with white. Spiracles white in a narrow black border. The feet testaceous tipped with brown abd testaceous outwardly with many pale elevated gibbous spots, & blackish above clusters. A 2-4 (but less) rows of submarginular brown patches containing greenish gibbous spots branching spiracles yellow, tipped with black began to cover Aug 28

Hairy cater. 4.6 9 1.2 1.6 2.1 2.7 (3.4) (4.3)
 We have 4.6 1.2 1.5 2.1 2.7 3.4 4.4
 184

On linden (molt 9-9), 4. cater? Head black
 exhibiting a little ochrace vertically. W. 4 mm
 Body dull white, cervical spot & warts black
 the latter bearing a few hairs. Cervical & anal
 plate straight & apex rounded behind. Warts
 small 5-12 ant. ② s-d ③ lateral only 1 large
 one on 13 ④ minute in s-v space whole length
 L. 25 mm. Eat half ^{2 out of} back of leaf & rest there.
 Egg shell little more than hemispherical
 mouth of diam. Laid in mass ^{of 200 or about} on underside
 Molt 2 June 4 Hd. cervical spot & anal plate
 black & shiny. W. hd. 6 mm Body as
 before, now ① almost in line with ②, ③ sub-
 stig. ④ little elongated above bases of legs
 and other on legless segs. Body white,
 hair scanty, longest at anterior end 1.5 mm
 Molt July 29 Head, cervical spot & anal
 plate black & shiny. Labrum & bases
 palpi pale. W. hd. 11 mm. Body white warts
 black as before. Hair longer, white, warts
 as before. Length 6 mm.

(1.5 from old head)
 Molt 5 July Hd black. W. 1.5 mm Body white
 c-spot, warts & anal plate black, warts
 ① 5-12 ant. ② s-d ③ sub-stig. ④ minute
 atch - part to spiracle ⑤ ⑥ two rows
 in s-v space some on all segs but 12
 where is only one ④ 4 small ones on vent
 of legless segs and on joint 13 anteriorly
 Hair white & thin black pencil from
 wart ③ on joint 5 and some long black
 ones from joint 5 segs. Length 8 mm.
 Molt 6 July 11 Hd black polished labrum
 & bases of palpi pale. W. 2.1 mm. Body as
 before but from warts 7 rows ① gives thin
 short pencils of black hair meeting over
 the back, and from row ③ on joints 5 and
 11 a long pencil of black hair ^(2-2.5)
 Molt July 18 Hd. as before W. 2.7 mm. Body
 as before but with black spots laterally ^{on} and
 in suture bet segs. Hair white, dorsal
 tufts & s-d pencils as before but larger
 Feet black, clasp of abd. brown.
 Molt July 25 Hd shiny black, Labrum

(From the ad 3.85)

2 bases of antennae white. W 3.4 mm
Body white, warts black. A number
of lateral black spots & ventral nearly
all black & transverse bands in seg.
sutures. Hair white, tufts & pencils
black & a few black hairs from j.13.
Hair not dense enough to hide body.
Anal plate black. Aug 9 & 11 Hd black

They have a base of antennae white
W. 4.4^{4.6?} mm Body white. the warts, spiracles
& a number of irregular marks black
vents largely black. Hair white, keeled
along dorsum & carried over them 8 black
tufts. On 5 & 11, a 5th then black pencil
& on 3, 4, 12 & 13, a few long white hairs.
The hair is so thick as to obscure
body except at the lateral regions. (all dead)



On Linden Van Cattaunt Park
N. Y. June 15 1896. Just
hatching and covering leaf.
On 3 illa. found 2; separate on 4.
VI present on old, no surface
marks on thorax; VII & VIII present.

Skin covered with fine dense cuticular points.
VII with 2 hair on lipless seg. 3 on leg shield.
Shed Aug 21.

most of 25 Hd black, labrum, base of palps
bordered in Δ pl above white. Brown post-lateral
26 mm Body light red. Brown traces of d-d striation
s.d white line & broad stig. band, edged above &
below with white lines pale then body, 2 pencils white
black, probably 2 black & white. Anal
uncoloured. Some had more all brown
Some 21-22 green, others green
e-light June 1890. Flattened at tip
(See under 185)

Anal outline oval O, ventral ellip-
subpyriform, the broadest wuffed
little depressed centrally, with
a round central black spot,
yellow on flattened sides
narrow ring around the
ventral. Elsewhere white. Height
(to point) 1.6 mm. Width (through
middle) 1 mm. (through sides) 1 mm.
Color bright white, yellow
greenish. Hd shiny black. W. 8 mm

5 rows of prelarval bearing spines
yellow, the spiracles black. 2 mm
the whole leaf at first stage.
Hd black or brown, black in flow
2 mm. Dorsal, s.d., & stig.
are numerous pencils black.
whitish silver, a faint yellow stig. line
Hd black & shiny, labrum
1.54, 2-)

Body light brown
Body light brown

with double dorsal
white lines. 2
black ground
color. The
spines 2
rows 2
consist
of 2
rows
of
black
bristles
at
the
tip
of
the
leaf
at
first
stage.
Hd
black
or
brown,
black
in
flow
2
mm.
Dorsal,
s.d.,
&
stig.
are
numerous
pencils
black.
whitish
silver,
a
faint
yellow
stig.
line
Hd
black
&
shiny,
labrum
1.54, 2-)

Copied
8/8/90

86 ^{round egg-like} ^{on white} ^{hatched} ^{also} ^{late}
 Egg laid by 2 locusts - left side? say
 brown & light June 24 1890. Shape of
 1/2 a sphere, flat below, outline from above
 circular, minutely punctured, shining
 very pale greenish yellow. D. 1 mm
 Hatched July 1 Head depressed at vertex
 pale greenish ^{yellow}, the lower third shaded
 dirty brownish. W. between 5 & 6 mm
 joints 5 & 6 are slightly elevated dorsally
 and are crimson. ^{the} Body bears small
 warts ^{1 per seg row} 1^a ant. in sd. of 3-4 2^a ant. in sd.
^{these are 2 larger than others}
~~located on 2nd and 3rd row, laterally~~
^{one at base of legs}
 all small and bearing a few
 hairs. Body yellowish green, a v. of see
 except on 6 & 13 crimson. Feet black
 except anal pair ^{2 these} are elevated
 Length ^{after} hatching 2.5 mm ^(young)
 Molt July 4 1st. rather higher than wide
 the lobes acutely rounded, very dark
 wine blackish on the flattened front.
 W. 9 mm Body a little enlarged

made
on
white
hatched
also
late

5 x 10 2.1 3.3

locally on joints 5 & 12 which with the
 ventral & lateral region are dark brown
 dorsum brownish yellow bright on j 3 & 4
 and ^{with} on j 10 & 11 a yellow patch of Δ shape
 ending abruptly at end of j 11. (2.5 mm)
 warts as before, small, with a few hairs
 As stage advances the whole body becomes
 darker, into brown finely mottled with
 yellow spots on at the sides of j 3 & 4
 and dorsally on 6 & 7. Seg 10 a small bright
 yellow spot (forming with a larger
 hemispherical ^B (see post) similarly colored
 spot on tail of 4 part of complement brown spot
 Molt 3rd 1st pale brownish mottled
 with brown. a broad dorsal brown ventral
 stripe ^{from} each side to mouth running to the
 apex of lobe once elevated in middle above
 the middle. Spl & labium pale W. 1.5 mm
 Body pale brown brown mottled with
 dark blackish brown especially in a
 broad dorsal band on joints 2-4 and
 laterally 5-10. On 3 & 4 laterally a

... indicate pale patches yellowish above
similar yellowish spots on 6 & 7
and the Δ yellow patch on 10 & 11 as before
A dorsal process on 8 surmounted by 2
tubercles, slight ones similar on 8 & 9 & 12

2 lateral rows of minute tubercles 2 on 13
i.e. 2 per seg s.d) a few minute hairs. L. 10 mm
A whitish ventral band on last segs,
as stage advances the lateral brown marks
begin to fade into the ground color leaving a
narrow black s-d line, all the yellow
marks except those on 10 & 11 disappear

Molt July 12 ^{shaped as before} Hd. very pale brown thickly and
evenly covered with little crimped lines of
dark brown. Spl & labium pale, tips red
brown. a few hairs. W. 2.1 mm. dorsal
process on 15 long, 1 in front a little sloping
behind, surmounted by two whitish tubercles each
bearing a hair. On 16 a slight elevation on 9
a larger one, broad, and similar on 12
each a little larger than that on 8, each
surmounted by 2 tubercles which with those
on the other sides form row D. The first stage
The lateral lines ^{also} are ^{also} present, small, whitish, each
bearing 2 hairs. Body is pale brown, mottled
with dark brown evenly, like the head except
on joints 2, 3, 4 a broad dark brown dorsal band
* on 6-11 a narrow s-d line & on dorsum 6-8,
are oblique brown lines on each seg. feet to
white the color is paler. The yellow patch
on 10 & 11 is Δ on 10 as before on 11 divided into
3 spots the outer ones elongate the post
small & rounded. Venter nearly black

Egg laid by *Halicidota tessellata*
Poughkeepsie electric light June 24, 1890
Egg very obtusely conical being very nearly
a little more than hemispherical, the base
flat. Smooth shining, color pale green.
diam. .7 mm, height .6 mm. ~~ind single?~~

(the apices closer together than in the others)
the confluence of the mottling a broad
pale greenish whitish dorsal, thoracic
and abdominal testaceous. anal elevated
when at rest. ^a ~~head thickened at joint 9.~~
* On side on joint 2/4 the ground color is of a
shiny blackish brown more than elsewhere.
(on sides under rest pale brown, also on white
as also on last segs, each side of head band)
Molt July 5 Hd. higher than wide, slightly
depressed at vertex, marked as before
jaws bases of palps & eyes red brown W. 3.3 mm
head on joint 2-4, 6, 11 113 not as high as
top of head. dorsal process on 5, long & large
its surmounting pair of tubercles pointed & rounded
j 7-10 segs enlarged dorsally, 8 & 9 with
7th lobes but both shorter than 5. a slight one
on 12. Surmounting tubercles brown, topped white
each bearing a hair. On back of head a broad d.
band 12-14 dark brown, also a narrow s-d line
5-11 Post 9 brown colored as legs, except angular
mark on 10 seg which is about the same shade
(over)

189 Calc 43.54 .68 .86 1.07 1.34 1.68 2.1 2.6 3.2 4.80

We have 2.10, 2.34, 2.6, 2.93, 2.90
.34 .4 .6 .9 1.1 1.3 1.6 2.1 2.3 2.6 3.1

188 (9)

Egg of *Rhodopora Florida* P. (light)
ovoid, shape of sphere, base
flat - smooth. Color shining yellow to
brown brown.

variation in the shape of the
spines. The color is pale brown, yellow
or greenish. A large or small spot on each
side. The spines are of various lengths
and are placed in a regular order.
① almost line ② small spots ③ small spots
④ small spots ⑤ small spots
⑥ small spots ⑦ small spots ⑧ small spots
⑨ small spots ⑩ small spots

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As the oblique dorsal lines on 6-8 are pale then
the rest of body or slightly protuberant. Hd and
antennae small, tubercles whitish
each with a single hair. A broad ventral
pale whitish band with which the
the feet are concolorous. Abt concolorous with
body. Spiracles pale brown in fine black ring.
Feet 12-13 are a little paler than the rest
of the body and a pale shade passes up
the back of process ant. Length 127 mm
The larva presents a curious appearance when
it feeds. Though of nearly equal width throughout
its back is level from head to feet then the
long process on 7, after which the back rounds
up, bearing the processes on 8, 9 and is then
much depressed at 11 rising a little and
at 12 and tapering down to anal feet. The anal
feet are not much used but usually rest against
the leaf while the larva is feeding. The color
and shape is much resembles a curled dead
leaf of the hickory. The position of the back
is indicated by the anal feet being placed close to the
Cov. July 22 when fed at midnight on leaves
of *Cyathodendron*, and legs quickly turning
capable of much motion, an elastic but the

as a curved row of tubercles at the edge of the
2 parallel separate rather bluntly spinose
below shiny dark red brown. Cases created and
body punctured into minutely
189 Copied 8/12/91

Little larvae made June 26, 1891. Half a
leaf hatched below, a number of skins and
eggs eaten up. Seco 21 stage? Hd. pale whitish
brownish in spl. t at vertex. Eyes black 2.4 mm
Body whitish with concolorous and hardly
distinguishable, bearing long whitish hairs 2-3
(Head proper shed skin less than 1/4 mm
apparently greater than .3 (being 1/2) the
same worm. Imposition of eggs on leaf diam. 6 mm)
Molt 3 July 1 Hd pale yellowish whitish
Joint black at vertex, eyes black, feet
brown 11.6 mm, back purple color, anal
small concolorous bearing long blackish
hairs. Molt 4 July 7 Hd as before but not
brownish at vertex 11.1 mm nearly. Body
Body pale whitish except anal feet
darkish, anal feet black, hair on back rather
long 12 mm Molt July 10 Hd pale straw
color, anal feet black, hair on back
Body as before, hair whitish rather abundant
Molt July 20 As before Hd 1.3 1/2 mm

Pupa Robust, nearly straight along the ventral line, slightly contracted laterally behind the horns abdomen large, rounded, the last segs rapidly tapering. Cremaster short, stout, furnished with many small hooked spines. Thorax & coxae creased, broad, a d. spot on p. 12 and a small patch on p. 3.

Molt July 26 as before Hd 1.6? A blackish s.d. shade band and row of segmentary white dorsal spots faint at extremities. Hair mixed with black, rather long. Molt July 31 Hd. 2.0 (Sh. hd. 2.0) coxae, jaws dark brown, eyes black W 2. Body reddish greenish, mottled with black over the dorsum, a white ^{d. & s.} line and pale stig shade. Spiracles white & fine black border. Heart large, creolous Hair rather bristly of irregular lengths, turning brown mixed with blackish.

the joint 12 an orange s.d. spot ^{about} the vent ③ This. feet testaceous, Molt Aug 3 Hd brownish testaceous, mouth pale, jaws black. W. 2.4 mm. Body nearly robust, the thorax mottled, d. & s. white lines. Spiracles white in narrow black line. The feet testaceous abd. black out away from a large spot before vent ③ on 12. Vents as black as body. Vents large, pale whitish yellowish. Hair mixed with blackish. Molt Oct 11 W. hd 2.6 mm Same exactly. (Hd 2.3) Molt Nov 23 Hd testaceous brown, hairy, shining and, pale W. 3.0. V. d. dorsal shade out, vent ③ on 12. Vents large, pale whitish yellowish. Hair mixed with blackish. Molt Dec 11 W. hd 2.6 mm Same exactly. (Hd 2.3)

Imago March 12, 1891 Spilosoma latifemur ♂

By call (r=8)	4	5	7	9	1.2	1.6	2.1	2.6	3.3	4.1
Have	4	5	7	9	1.2	1.6	2.2	2.6	3.6	4.1

Color (pale, dusky, punctured) ^{black, shiny} 190
 other spots pale reddish

Eggs on chestnut June 26, 1890. About 150 conoidal but rounded under to the flat base eq. O smooth, shiny, pearly yellowish white. Diameter 8 mm. Hatched June 27 Hd shiny black subcylindrical mouth pale W. 4 mm central spot blackish. Body pale whitish with black hair given nearly everywhere wants arranged apparently as in Art. 12 & 2. Later molt because blackish, brownish, Hd c. spot and joint black, vent ③ ^{dark} brown

Molt July 2 Hd shiny black, dpt. e. mouth W. 5 mm Body dull hairy greenish, central spot & white black, as in Art. 12 & 2. Vents large brown. L. 6 mm

Molt July 7 Hd blackish, black shining, dpt. e. mouth brown, pale W. 7 mm Body faintly blackish, central spot, vent plate & vent black. Hair black. L. 7 mm

Molt July 11 Hd polished brown, dpt. e. mouth pale W. 9 mm Body pale black, a whitish

dorsal line. Vents black bearing black hair but paler from joints 7-10 especially usually being a dull pale tawny

Molt July 17 As before W hd. 1.2 mm

Body black, hair & vents black but hair on 7-9 reddish or tawny, L. 12 mm

Molt July 25 Regular little ribbles. Head black ^{about (2.6 from head hd.)} W. 5 mm bases of palpi white. Body

black the vents brownish on 7-9. Hair dense of very even length as if clipped except a few at extremities, black, but tawny brown on 7-9

Spiracles white; claspers and feet brownish

Molt July 29 Same Hd 2 ^(2.2 from 2-10 hd) mm Body black finely

speckled with white. The lateral patch narrow at the sides, does not reach below spiracles

Molt Aug 5 As before, width hd 3.3 mm ^{(3.1-3.5) (Shed 2.6 or 2.7)} brown

hair on hi an elliptical patch on 6-9 not reaching below spiracles. Not a tooth 2-8 on 7 & 8. Vents black dirty testaceous. Hair

black. Hd black. Palpi & antennae white

Molt Aug 15 W. hd. 3.6 Same. Bases of hair in complete transverse band a little increased on the black segmentally. Molt 10/30 Hd black

bases of palpi & labrum white. Shiny. W. 4.1 mm. Body black, speckled with white, spiracles white, vents paler

hair clipped. Dorsal line black at joints 2-6 and 11-13 except 9 red on 11 subventral line length 5 of 29 50 mm salmon colored W. hd 4 mm ^(Shed at 2.2, 2.5, 4.0)

egg from shell & canopie egg in *Chilodactylus* July 2
Spherical, flattened above & below. white minutely, shagreened, surrounded by brown substance. Length 2 1/2 mm. width 2. Height 1/4
191

On wild plum? Water Co. June 27 '92. Looks like little *Callosinias*. 7mm head one Hd. black shiny, a few short pale hairs W 1.3 mm

3 rows of long black tubercles from elevated conical pale bases 1 per seg except J13

which has 2, ^{2 or 2 has only 1 dorsal} more at anal plate. Vent d. line (2) super seg. (3) in S-V sp. Each

at summit bears from 3-7 black spines. Body uniform dull black spiracles white

Larger one Hd black shiny, labrum pale fawn black. W. 1.6 mm. Body dull yellow

or blackish shaded or all black tubercles as before, black, 2 rows round black spots, 2 per seg, between them i.e.

D & C. D. at seg. Vents blackish. Legs & anal plate shiny black. Spiracles

white with minute dark centers. L. 12 mm. Molt Jan 4 Hd greenish yellow mouth

paler a black spot over eyes and another in front opp. top of apl. W. 2.4 mm Tubercles

as before row D black with bluish top. on joint 2, dorsal red top on 3, 4 yellow top

as stage ad-
mules the
color becomes
greenish

NO. 111
Laloum
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3-99-11
3-100-11

5-13, only one tubercle on 12 dorsal and
(i.e. only 2 rows) in anal pt
2 pair on 13 the last pair, nearly all black
row 2 have partly blue tops, rest as on
joint 3 & 4 row 3 black, all spines black
Body ochery yellow. Dorsal, s-d, stig & s-y
rows of round black spots 2 per seg -
Feet as before. Spines white in first black
ring. Cervical spot yellow. L. 18 mm

Probably hatched from Pough. eggs. Hd black &
shiny W. 1 mm Body black, the spine bearing
tubercles arranged exactly as in (short July 4)
body whitish or yellowish the spines black L 6 mm

Molt July 13 Hd yellow green, labium & bases
of palpi whitish. Palpi black as also eyes &
jaws & trace of former spots W 3.5 mm. Body
green, bluish on dorsum, yellowish laterally
Tubercles arranged as before but much
larger row 1 on 3 & 4 coral red, on 5-12
yellow, all the rest pale blue but the
short spines black. Feet yellow tipped with
black, the abd. each with a black spot
Spines white, finely bordered with black
Molt July 25

192
Eggs on chestnut plate W. June 27, 1890
like lower 2/3 of here, the top flattened
only a small portion of base adhering
to the leaf O diameter .6 mm
Hatched July 8 Hd. slightly lobed, black
and very shiny. W. 4 mm. Short pale hair.
Body last joints elevated otherwise feet
normal, contracted somewhat in segmental
entrances, uniform bright yellow. L. 2.5 mm
Hatch with head in one side which would
be stage advanced a black s-d line
appears enlarged on the last joint.
Molt July 17 Hd large, subovoid protruded
in front. Pale yellow, mouth brownish, eyes
brown. W. 7 mm a few hair. Body bright
yellow with greenish d. & black s-d line
and a black e-d spot on 13 L. 4 mm
as stage advances joint 12 is somewhat
enlarged dorsally and bright yellow
interrupting the lines which are all black
the d. broken into 2 spots on 13 and the
s-d thickened on 2. Hd light orange. a

band in s-d space is of a brighter yellow than the rest of body.

Molt July 22 Hd high than wide, scarcely deep at vertex, light light yellow, eyes black, a few hairs w. 1.3 mm. Body as before (Hd 1.4, 1.5-2)
 Molt July 24 Hd same shape, light shiny orange, eyes & a few minute hairs black. W 1.7 mm. Body bluish green, a d. & s-d black line, as in d-sp. & in s-v ip yellow band. It has 2 black dashes in s-v, sp. 12 is lumped dorsally nearly all orange, 13 is whitest, the yellow bands absent, the black lines larger & broken and anal plate pale yellow. Feet and venter pale whitish. L 12 mm

Molt July 25 Hd same reddish orange. W 2.2 mm Body as before, a row of black spots on s-v fold appears as anterior of sp. along labium with 2 elliptical elevations. Very short hairs & shiny. Body reddish orange, mouth parts yellowish W 3.2 mm Body pale blue, a s-d & s-v line by yellow band. Head white & below with black, a black dorsal & lateral line with some black streaks next d-line & a number of black spots subventrally above & below bases. Legs a black ventral line, venter & abd deep pale greenish, the feet testaceous. Body on 12 fleshy, wrinkled with a large central shiny space all orange or yellow. 13 has only the black line broken into spots. Anal plate yellow & higher than joint 2. As stage advances the yellow s-d band becomes tinged with orange.

Cycale.	.3	.4	.6	.8	1.2	1.7	2.4	3.4
have	3	4	.6	.8	1.2	1.4	2.4	room

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Eggs of Hyphantura testis Water to June 27 on wild cherry. Laid in a close single layer of about 375 and mixed & partly covered by a mass of short fine white hairs. Egg is spherical, minutely punctured, pale green diam. 2 mm. Hatched July 8 Hd blackish

paler at mouth & opl. W 3 mm Body white the venter blackish with few rather long hairs. L 1.5 mm [Others on apple Hd black. 4 mm Body pale whitish venter black, as also c-spot & anal plate. Few pale hairs, L 3 mm]

Molt July 16 Hd black, w 4 mm as above
 Molt July 24 Hd black W 6 mm Body whitish venter large, black as also c-spot & anal plates. Hair partly black. A faint dark subdorsal shade band.

Molt July 29 Hd black, labium & palpi white W 2.0 mm Body grayish in s-d sp yellowish laterally. c-spot partly, venter @ 2 @ anal plate black, a pale dorsal line. Abt. venter blackish not black, hair black & white.

5.99 1 L2 8 7 1 8 9 4 6 8 12 18 27
 L2 8 1 5 1 6 9 4 11 13 18 27
 H 40.3 44 46 49 51 54 57 60 63 66 69 72 75 78 81 84 87 90 93 96 99 102 105 108 111 114 117 120 123 126 129 132 135 138 141 144 147 150 153 156 159 162 165 168 171 174 177 180 183 186 189 192 195 198 201 204 207 210 213 216 219 222 225 228 231 234 237 240 243 246 249 252 255 258 261 264 267 270 273 276 279 282 285 288 291 294 297 300 303 306 309 312 315 318 321 324 327 330 333 336 339 342 345 348 351 354 357 360 363 366 369 372 375 378 381 384 387 390 393 396 399 402 405 408 411 414 417 420 423 426 429 432 435 438 441 444 447 450 453 456 459 462 465 468 471 474 477 480 483 486 489 492 495 498 501 504 507 510 513 516 519 522 525 528 531 534 537 540 543 546 549 552 555 558 561 564 567 570 573 576 579 582 585 588 591 594 597 600 603 606 609 612 615 618 621 624 627 630 633 636 639 642 645 648 651 654 657 660 663 666 669 672 675 678 681 684 687 690 693 696 699 702 705 708 711 714 717 720 723 726 729 732 735 738 741 744 747 750 753 756 759 762 765 768 771 774 777 780 783 786 789 792 795 798 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Hd from pupa 3 mm ♂
 do 2.8 " ♂
 do ^{in cocoon} 3.5 " ♀
 Hd from diach 2.9 " ♀?

white hair, cocoon without molt.

Another Hd 28 mm ^(2.5+, 3-) hatched July 18 as before
 but wants in c-spot hardly discolored.
 Feet & venter greenish w. hd 3.6 ^(3.5+) ₍₄₋₎.

Cocoon July 28? Pupa Aug 1 ^{Swamp} ♀ Aug 6
 moths white, dorsum broadly a little darker
 a blue dot on dorsum of 3rd abd. segment.
 Put her in the woods and at 3 p.m. she laid eggs
 Egg near spherical, a little flattened at the top
 white smooth the top centrally yellowish with a
 concentric similarly colored ring. Diam. 1 mm
 Laid in a mass on outside cocoon covered with a
 mass of little bubbles which dry into an opaque white froth.
 [S of 4 on elm Hd dark red, blackish about eyes & clypeus
 labrum pale. W. brown body as mat. From 2, plumed hairs
 61 from 12 hardly mixed with any other hairs. Dorsum
 white, side gray, 5 d & sub-stig yellow line. Venter
 pale & legs. C-spot & atracheal warts on 10 11 12 oval
 red. 4 dorsal yellow spots on 3 4 (i.e. warts) L 10 mm
 white warts on 5-8. She laid a little smaller fly]

