



H. G. Dyar bluebook 197 - 212

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ALL BILLS SETTLED MONTHLY.



Descriptions
of
Lepidopterous Larvae

(continued)

BLUE BOOK

197 - 212.

PROVISIONS,

CONSTANTLY ON HAND

Beef, Pork, Mutton, Lamb, Poultry,
TRIPE, SAUSAGES, HAM,
LARD, PIGS' FEET, LIVER, &c.

Also, Fresh Fruit and Vegetables

Of all kinds in their season, at lowest cash prices.

Goods delivered promptly, free of expense.

197

Egg laid by ♀ *Edema* sp. PK. e-light.

July 3 '90. Spherical, very slightly flattened
on top & bottom - minutely punctured
color fine pale green. Diameter .7 mm

Hatched July 19 Hd subcordate, black
& shiny, a few hairs. W .4 mm
(.35 to .5)

Body somewhat contracted in seg-
mental sutures, light yellow with
a few hairs, & a small sd black
spot on 12. Anal feet elevated. L 2.2"

July 22. eg Hd large, subconoidally
flattened in front, shiny pale yellow
mouth whitish, eyes & faint brown W. .7"

Body yellow, enlarged a little at j. 12
with d, & s-d. narrow interrupted black
line and sd black spot on j. 13

July 23. eg 6. Hd as before W 1.3 mm
as before d & s-d lines narrow, black.
Faintly a yellow band in s-d space.

July 24. enlarged dorsally, dark yellow

July 24. July 14 Hd w 1.7 mm Same

Nov 5 Aug 25. Hd higher than wide, narrowing to vertex, flattened in front & depressed at anterior of spl above like *Datana*. Smooth, very shiny, light orange, mouth parts yellow, eyes black. W 2.3 mm. proboscis has a dorsal orange bump with a few minute tubercles, anal feet elevated. Body yellow green, a sd & stig yellow band 2-11, edged on both sides with black, interruptedly before stig. A dorsal & lateral black line. T 13 bluish. Black line precedes but broken into spots. Traces of s-r & ventral lines in spots. anal plate yellow tipped brown, no shield (dead)

*The 2 large eggs in slight amt. of gummy auro (which depressed growth & denudation) and rub her body over the insect dead, all the hair covering the eggs. (Copied) (BB 199 cont)

3 pupa cylindrical, the abd seg, tapering the eyes & wing cases & antennae cases especially prominent. A little depressed behind thorax. Semi-transparent shiny yellowish white, the black covered with long thin silky white hairs. Cremaster feet, terminating in several brown hooks well fastened in the silky cocoon.

L 12 mm W 5 mm (Hd from cocoon 2.8) gummy last. Pinop. Aug 27 gummy Aug 29 of structure of denudation last and white, the color of the down which is depressed above and on the ventral side to light brown a small black spot on end of abd. seg. Rudimentary wings dark & viscous.

Egg black. Egg nearly spherical, the top a little flattened. A large central brownish spot with a white dot at apex of egg, surrounded by a concentric concentric rings. Diam 1.6 mm. covered with the brown hairs of the moth which seem to be gummed on as are the eggs to each other & the cocoon. Contrasts with both covered eggs of *denudation* and the naked ones of *nova*.

Copied, ^{hid. in calc (3.5 ratio. 7)} 1, 1.6, 2.3, 3.3
Common larva
198 book

Eggs laid by tied mated ♀ *Platysamia*
promethia on sassafras July 6, 1890
Elliptical flattened above & below
or a little depressed. Shiny pale
creamy white, not punctured and
not smeared with any brown fluid
as is *Cecropia*. L. 1.9 mm W. 1.5 H. 1.3
Hatched July 19 tad black, labris &
palpi white & a longitudinal line
passing just above the eyes. W 1 mm
Body yellow, a double transverse
black band around & part of
each seg. heavier at extremities. Three
rows of tubercles tipped by spines, on 12
one dorsal & 2 rows, yellow in center of
body, black at ends, all spine black & 4
Nest 26 as before. H. 1.7 mm. The
tubercles are black on 2, 3 & 12 incline
drag these on anal plate the rest
yellow but the sharp fine radiate
spines are brownish or pale. The

corn & silk in cupled leaf fastened to
tang & a handle of silk spun along
the leaf stalk.

ground color fades to white as the stage
advances Nest Bp 31 Hd pale yellow or
tinged with dusky yellow, Ant & mouth
parts white, 2 longitudinal black bands
on lower lip interrupted one above mouth
& a vertical broad one at sides post.
the other above & plate, consisting of 2 spots
Body white, tubercles in 3 rows black
4th row above base of legs on 2-4 with
radiate spine at top black as also the
2 on anal plate but row ① on 3 & 4 and
the dorsal on 12 larger, yellow with
a black ring ^{not externally} the base. Legs
all yellow, a few black dorsal spots
at extremities. W. L. 2.3 (2.5 - 2.7)
Anal feet with black angulated line
Nest Bp 4 Hd yellow with traces of blue
brown marked on 4 black spots. Labris
white bordered above with black, antennae
white, eyes black. W 3.3 mm Body greenish
white, hants as before, the black ones
small. The dorsal on 3 & 4 large, dorsal
anal rid with a black ring at base. The
dorsal one on 12 yellow with black ring
Feet & anal ^{black} ^{black} the abd. each
with a black spot & anal feet with
a black & broken at the lower outer
corner. At mouth body white & a pale
blue ring around the tubercles with
a crossy line through row ① Corn Aug 13

Hds by calc (2.8 ratio 7)

.47 .67 .96 1.37 1.96 2.8 4 (only)

W. have — .7 1.0 1.5 2.1 2.8 3.5

Copied 3/29/91

199 = *Agryia defuncta*

Two heads of eggs on *Sassafras* July

6, 1893 Hd, pale yellowish, jaws black

W. 9 mm. Warts as in mature was in BB196, small, unicolorous, 2 in large

ones on joint 2 bear three pencils of plumbed black hairs, and a

similar pencil mixed with brown hairs on joint 12. Body pale whitish

a yellowish band on foot segs. and a stripe band whole length

wider on 5, 6 & 7. Three dorsal deep yellow tufts of joints 5, 6 & 7. Warts

bear three whitish hairs 2. 10 mm

Retractable warts on 10 all whitish with a blackish shade around them

Molt July 4 Hd pale yellow, eyes black, jaws brown, a small brown shade above labium: W. 1.5 mm Body as

before but shaded with blackish in dorsal band and laterally. Tufts

4 on joints 1, 5, 6, 7, 8 dark yellow Hair

Hds by calc (2.8 ratio 7.5) C.F.D.

.62 .71 .956 1.27 1.58 2.1 2.8 3.7 (only)

Have — .7 1.0 — 1.5 2.1 2.8 3.5

long, whitish. Cervical spot pale yellow

Retractable warts whitish 2. 12 mm

Molt July 5 12 As before W. 2.7 mm

Between the yellow dorsal tufts are a series of velvety black spots, concealed

unless the insect is disturbed. The dorsum is gray, broadly so anteriorly

but ^{parts} replaced by a ^{yellow} band on joints 9-13. The lateral region is gray the

warts whitish and partly bordered by yellow, and a narrow ^{strip} band

[195 A July 13 Hd pale whitish, eyes black mouth brown. W. 7 mm Body has warts

small except 2 large ones on joint 2 bearing 2 or 3 short ^{also dorsal} plumbed black hairs

All the rest bear a few long white ones body pale whitish, retractile warts white

Traces on two anterior dorsal tufts of 5, 6

Molt July 19, Hd brown. Another Hd 2.8 2.54 3.1 Hd pale yellow, shiny, labium & antennae white. Body pale yellow

a pale, almost colorless dorsal band

From shed head 4.2 (greater
than 4 - less than 4.5) Imago ♂
Coon July 25 Feb 16, 91

as before, eyes black on black patch
yellowish before it. Mouth brown, jaws
black. W. 4 mm. Body as before want
① ② pale yellow ③ ^{now color} pinkish. Black
strip. above feet larger & few long hair.
Strip above head and feet black,
yellow above it. Abdomen feet black.
4 now wants a s-r sp. on 2-6, small
on 5 & 6. a number of short club shape
white hair on dorsum

Molt July 16 Hd dark green, shiny gran-
ulated & creased, eyes black on dark
brown ground, jaws brown. Labrum
& mouth parts pale; bases of palps ^(Bristle 6, 11, 12, 6.5) yellow green
yellow. Body as before, wants ① willow
② ③ bases brown, rest whitish ^{or all rose brown} very
long blackish hairs. Anal plate dark
brown, granulated, the lower border
with yellow, 2 rows feet dark brown
outwardly, clasper of abd blackish
1 feet have black hair. On dorsum
a number of white hair from ^(not clubbed) dark edge
3 space orange with paler border

Calc. 1.7 1.75 2.70 4.0 6.2 7.2
Grand - 6.2

201

Little larvae on Antennaria. Whole as
July 2. 9s Hd pale testaceous, mouth brown
eyes black on pale W. 4 mm. Body
translucent greenish, front pair
on abd. feet partly aborted. L. 5 mm
Some minute wants on body. &
The other same but paler Hd .6 mm
On July 12 one hd .9 as before food
showing minute piliferous wants. Body
tapered. 2 food pair abd. feet part aborted
Other Hd 1.1 (or 1.2) very pale greenish, Hd
shiny body semitrans. Same as other ^{but little paler}
On July 17 Hd 1.1. all pale greenish yellow
reddish on dorsum of 2-4, interrupted
yellow s-d line, ant. abd. feet small
than others. Other Hd pale green, eyes
black, mouth whitish W. 1.5 mm
Body pale green, little reddish on
dorsum 2-4 with s-d yellow line
broken into 2 spots per seg. 3rd
folded in body sutures. Feet

nearly equally developed. L. 10 mm
One molt July 24 hd 1.5 As the other
the reddish color all disappears.

Other molt July 26 hd pale green eyes black

mouth & feet white W. 2.1 mm (2.5, 2.5 mm) Body

folded in egg. Antennae like probosc. cat.

anal feet horizontal (ant. abraded) a red

yellow stripe & anal plate broken

into two elongated spots per seg. Pale

greenish with darker green irregular

spots, dark green line of a green

molt July 31 Same. Hd 2.7 (2.5, 3-)

Spineless red. Turned red and

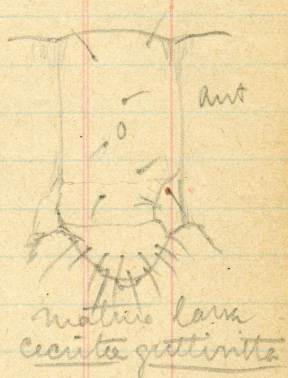
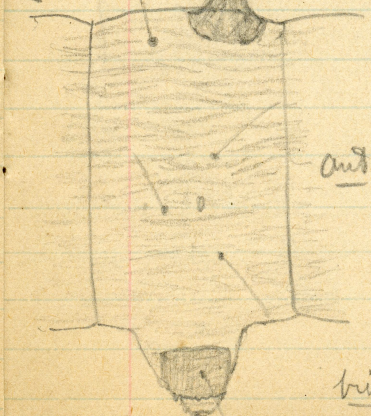
made corn on back of leaf of little

bits of leaf and silk Aug 5, 1890

(no pupa)

202
Egg, laid by ♀ P. isabella July 10, 1890
Subconoidal, almost $\frac{2}{3}$ sphere, base
flat, shiny pearly white. Diam. 9 mm

A 203 On choice cherry: Jefferson-Hopland
June 16 1890. Hd 1.11± (1.1, 1.1)
Body dark brown & greenish on sides
on 1st 2 brown patches have this spot on
7 and 10 lat; 8-d line of greenish
between 7, 8 & 9 on 11, brown
distinct on 12. Cdh 1 anal ft.
black. four with 2 very short
unbranched hairs
narrow strong
pale. 1
line
A molt June 9 Hd 1.6±
Horns blunt point As before at first



Found on beech
Keene Valley, N.Y.
Drawn July 10
1890 while
preparing to
molt.

This larva is
brimdata + guttiventris

Oak
with Hazel
Buckeye
Chestnut
Birch

Copied
12/3/90

203 (See 40) ^{H. guttata}

Reared July 2. y on white birch June 27 1894 1.5+
Said to be from at Indiana. Pale green as
described for stage II. D. line just indicated in
transverse band to be made out. D. subdorsal yellow
anterior with w. in 12 and 13. a few dark
dots in thorax feet pale and yellow with a
brown line in between
July 2 small yellow
subdorsal line fading
on 12 & 13,

call .6 .9 1.4 2.2 3.3 4.66
found - - 1.54 2.1 3.3

ant.

interrupted obliquely on 11, and
white outwardly on anal plate
Faint traces of yellow stigmatal
line many small black dots
laterally all on dorsum of ant.
segs. Feet yellowish, anal pair
white with a narrow longitudinal
black line & tipped with yellow
(Another same age on chestnut July 15
Same, but supplementary dorsal line
is more extensive. It leaves dorsal
line on 5, small & it joins it on 8,
immediately behind wing bases and
joins sub-dorsal line on 11, just past
the interruption. D. line extends
whole length except on joints 13
Molt July 16. Hd 3.3 mm Vertical line
germinate, somewhat pubescent
on white ground. Green, labrum
whitish, mouth purple red, eyes black
Cervical spot narrowly yellow in front
smooth. Body as before, dorsal

Another on Birch July 27, Hd 3.3
 # and on head purplish.

larvae cases present. Acuminate, two parallel
 spines barbed at the end with two little spines
 pointing the ^{ant} one inward the ^{post} outward
 (and the spine twisted a little near the end)
 it curved row 7-6 subventral elevation at first
 edge of thorax 2.19 mm W 5 mm color shiny
 iridescent purple brown round ^{small}
 (trig. line) molt July 16
 and dorsal marks
 are distinct than in
 . Then came com
 its traced however
 than 3, less than 3.5 mm
 shades white shade apper
 closed by antennis apple
 and below the
 joint 13, & the s-d line
 . Lateral region
 its purple, dorsal region
 with a general faint
 . Same but post.
 a pink spot in
 . Bands of head narrow
 by white from head
 pink edged white.
 one brown spot on j 4 in
 subventral space. External glands July 27
 on a gland at a ventral slope, set
 punctured, cases closed not

Hd by scale 4 .7 1.1 1.7 2.7
 we have 4 1 1.3 1.1 1.7 2.7
 9/7/90 20 common larva
 C. concinna
 On apple July 13, 1890, Hd black shiny
 W. 4 mm Body shiny brownish ochrace
 with cervical spot & 4 rows of small
 elevated spots black, lower rows minute
 Thoracic feet black, anal feet elevated
 Molt July 14 Hd shiny black, a small
 black tubercle at apex of each lobe
 W. 1 mm ^(full) apex short hairs. Body
 brownish olive, with rows of conical
 shiny black, piliferous tubercles three
 on 4 & 12 dorsal longest 5 mm ① vent
 s. line, ② s-d. ③ ^{super} trig. ④ ^{sub} s. ⑤ ^{sub} s. ⑥ ^{sub} s.
 C-spot & anal plates black. Anal feet up
 Molt 3 1/2 Hd as before, a number of
 black hair W. 1.3 mm. Body yellow
 brown, a s-d & lateral line whitish
 edged with red brown, distinct only
 centrally. Tubercles ① on 4-6 ¹² long &
 large others larger than before, each
 with a hair. C-spot & anal plate
 black tubercles, thoracic feet black

Blood Sept 11. Hd 1.7

[Egg shells] another lot, spherical, base flat smooth. Diam 7 mm. Laid in flat mass of $\sqrt{}$ root 40 [These have heads (1+1.5-) 1.1] [Molt July 2] Hd 1.7 Body as above, dors. dull ochre, 5 & 12 enlarged, dorsally and much yellowish. A s-d, superstg & interrupted substg. absent on 5 & 12 and broken on 2-4 & 13 white edged above & below with dull brown, with dull brown dorsal line. [Molt Aug 1] Hd brownish and short, dark eyes & antennae black. Thor hair W 2.7 mm. Body enlarged at j 5 & 12, most at 5, here reddish, tubercles 0 very long especially on 3-7 & 12, the lateral ones not very long, all shiny black. D black, s-d superstg, white edged black lines between each a narrow less faint black line. Body greenish yellow, faint C spot black bisected, anal plate & feet black spiracles blackish, in fine black lines. ~~the tubercles are small and green. Anal feet yellow. S-d is not on 5 & 12. Later, s-d is white.~~ S-d is white. Superstg. on 6-11 & partly on 12-13. Hump. Outline oval. Crown dark. Paracymbria like 1st leaves or not given. Pupa lighter reddish brown, cylindrical, abd seg. slightly tapering, black rounded, diemastels 2, separate about each with a narrow, very short obtuse point or obtused spine. Each half of thorax, row of circular glass, at joint edge of thorax, abd joint, etc. head, feet, etc. 2nd cases shown in L 2 W 4. [Molt Sept 3] 2 Redemiasia viridissima.

pruni

205

On apple July 13, 1890 *Apateta*? Head whitish but thickly covered with marks. In front a number of light purple streaks but 4th greenish edged by whitish, labium pinkish, palpi white. On vertex and down 2 but front 1 side half way the lines are black, close together composed of subconfluent spots. At the sides they are pale brownish. W. 3.4 mm. Body has a row of ^{elongated} large red warts each side dorsal line 3-12 (i) smaller post. but ^{much elongated} large 1 & 2 pair on 12, the post pair largest and smooth. Their bases much elevated. Those on 3 are next largest. Cervical spot dark red, edged by white which edge extends on j 3, converging, & passes just outside the warts. A narrow purplish dorsal line broadly widening & again contracting on joint 8, 9, 10 enclosing a yellowish space

W 2d, an apert & sub-stig. row
of warts, small & concolorous with
body. All bear a few blackish
hairs. Body yellowish green, spin-
acles black with white centers.
Feet normal.

Became red for pupation July 16.
Said in hollow of ground & I put
a board over it. No cover.

dead

appears to be 117 except patch on
"8-10" instead of 8-11 or is it
A. grisea (see Hy. Edwards desc.)?
cf 446 which is grisea. 446 has
patch 8-11.

It is prunus which has patch 8-10
and is the green form, unless some
greenish. (Feb 14 1897) See BB600

206

Copied
7/23/90

Heterocampa arcuata (see BB10, BB13)
July 13 1890 & d. somewhat higher than
middle of normal shape, not distinctly
bilobed. Green with a red brown
line bordered behind with white in
the front sides, narrowing at extremities.
Eyes black, mouth parts pale. W. 3.1 mm. d.
Body slightly elevated dorsally at
5 & 12 with 6 rows of ^{small} tubercles.
1 per seg., 3 ant., 3 post alternating, then
next dorsal line on 5 & 12 larger & red.
A white subdorsal line each side
green & spot, narrowing and 11 on 2, 3, 4
passing obliquely downward on 5, 6, 7
to spiracle on 7, then upward to
2d position on 8, to spiracle again
on 10, upward to first tubercle on
12, thence diverging a little to anal
feet. The dorsal space enclosed is
more or less (in this instance nearly
completely) filled in with purple

In both the 206A-206 the other yellow line was complete, one had tails all purple the other more quite all filled in.

brown dense smocking on a white ground except joint 2 & 13 which latter (13) is white, but bearing a white or partly green dorsal line from 6 to 11 of irregular width widening especially in the anterior bet. segs. Body leaf green much sprinkled with fine black spots. The minute pubescence tubercles are yellowish laterally, and a fine blackish hair grows on head spiracles orange. Feet normal, the last pair elevated, clasping abd. tipped with brown. A yellow stig. line on joints 2-4. Length 30 mm July 17 mounds birds for pupation and later mounds come of birds under sticks & sand in tumbler.

^(proleg 13)
Pupa July 22 Shiny, mahogany brown cylindrical, depressed a little behind thorax, wingcase somewhat enlarged greenish 2 short 11 minutely 2 short 11
Imago Aug 2, 1890 1 in. long the tail a little curved on the sides
Scutellum bilobed

Otherson larva Hdd 1.7, 1.7, 2.8, 2.8
When stage decreases, this absent but it forms a faint greenish dark red of line
Comp. 2 cells met 206 A these molted 206 A (these molted 206 A)
Hd as in 206, single brown line behind with white behind W. 1.7 mm. Body green with tubercles small as in 206, these on 5 & 12 next d-line large & red the other yellowish, each bearing a hair. A narrow white dorsal line from 6-13 broad white s-d line edged inwardly with black as in 206 but 11 in s-d position 6-10 (i.e. retracted to near dorsal line at 3, 4 and 12) A narrow yellow aty. line, many lateral small black spots. Anal feet whitish with a brown line. No purple shading. ^(Hdd flies) Molt July 20 Same month pale, joints black. W. 2.8 mm a slight black line under s-pl above The d-line as broad as s-d, white the latter edged above with yellow and a clear green space (black line faint) Rest of dorsum shaded with white Stig. line faint except on 2-4. as stage advances body especially dorsum shaded with brown d-line narrower and

III an intercalary specimen later, n. f.
Hd. .45 length 2.3 (June 27) No marked like 209 A
short stiff dark setae simple, more near ②. Low on
sides greenish papillae.

209

III codes in black ovals, dorsal
aspects elliptical, lateral semi-
elliptical, dorsal & lateral rows
of hexagonal elongated depressions
a yellow line on each angle but
dorsal & lateral regions, faint at
its extremities. A yellowish shade
at apex of body. Length 2.7 mm
Body smooth. Color yellowish green
July 17 As before, hexagonal depressions
smooth, body minutely papillose. A
yellow line on each subdorsal ridge
between which in the center of dorsum
is a small red spot, reaching sides
Most July 24 As before, the red spot
encompasses a little on the lines.

V mol? Spot bulges 3rd lines, salmon
with centrally edged crimson. A crimson
spot at ant. edge but lines. 4.7 Dorsal
patch larger, edge of yellow which continues
on 3rd bulges of papillae with the red and
25.5 mm yellow spot on the sides
(dead)

210

III codes on brick, July 13, 890
Shape of 209 but of a more bluish
green & with aid marks. Along
subdorsal angle and around
lateral margin ~~at~~ rows of tubercles
bearing short black spines, L. 2 mm
July 17 as before but tubercles and
spines rather larger (did it really molt?)
dead

Do this 239

	209	calc	Hds	Calc
Stage I see BB484,	length 1.5 mm	1.5	—	mm. .24
" II		1.5-2.3		.34
" III " 209 A, 209	" 2.6, 2.7 "	2.3-3.3	.5	" .48
" IV " 209 A, 212	" 4.5	3.3-4.7	.85	" .69
" V " 209 A, 212	" 5.7-6.5 "	4.7-6.6	1.	" .98
" VI " 212, 477	" 7.5-9.5 "	6.6-9.5	1.4	" 1.4

Lengths by calc. 1.5, 2.1, 3.1, 4.4, 6.3, 9 not .70
first stage has growth, the rest near end of stage after
growth

Hds. by calc. .25 .35 .5 .7 1.0 1.4

211

Egg on chestnut Dutchess Co July 15, 1890
 Elliptical slightly flattened a little hollow
 above & below, minutely punctured.

White on upper & lower surfaces
 brown in a broad band around the
 vertical part, diams 2.3 & 2.1

Interrupted by a white fleck at each
 end of the longest diameter.

Another hatched Aug 3 1st round, velvety
 brownish red later & bases ant. pale, eyes &
 jaws black, no. 11 black whitish, 2 rows of
 tubercles 3rd, superior & ant. 12 on 2 close
 together in 3rd, single dorsal one on 12 for nose
 & 2 small on anal plate. Tubercles all white
 except yellowish the anal one. Right & left feet
 top of antennae dark brown spinous & black on 2 to 6
 trans. brown stripes & indistinct. 9 brown black
 line of spinous & spin. black. Length 6 mm
 molted by 11 (dead)

Telen. pol. pherous

* Body powdered laterally above
 spiracles much as in 247 but not
 forming a distinct ridge from above
 though sharp below. Spiracles small
 round, conical yellowish

This must be *T. glauca*

cpd

212 B on everything Sept 9 90

4/3/91

like 212 and 212 A but

(called to 247) full space in ant. (pale)

212 A = BB11

On maple Water Co July 30, 1890

1st greenish testaceous, labrum and
 mouth brown, eyes black. Retreated
 beneath a fleshy fold which is in
 turn retracted under the body.

elliptical sides sloping down to a
 slight subdorsal ridge. Bright
 green, the dorsum largely covered by
 a patch of salmon color, bordered
 with a crimson line and yellow
 shade. It begins somewhat broadly
 above the head, narrow at once to a
 dorsal band, widens twice, the second
 time passing down to the subventral
 edge of the body. Then narrows twice
 and tapers to a point at the anal
 extremity. Body very minutely pap.
 pillose, the elliptical depressions
 hardly deep at all, smooth, whitish
 in the dorsal patch containing a
 dorsal row of blackish spots
 & 9 ann. (did his mat. see 212)

slightly constricted by 12 E13
 3 purple brown

on 3
 on 4 E5

on 13
 on 13
 transparent gray

on 13
 on 13
 transparent gray

on 13
 on 13
 transparent gray

Sub A - alternaty
with three as in S. scabra
(1 above s.d. ridge, 2 below
it, 3 above lateral ridge)
(fund. 211)

212

now 1 per set along
s.d. - regions now
ridge below s.d.
ridge, with 3
smaller rows.

IV Macodes on with Hazel July 15, 1895
Elliptical with slight l. but back &
sides & constructed a little just before
post. extremity. Many ant. elliptical &
depressions which are smooth, the
rest of the body minutely papillose.
A large diamond shape purple
brown patch on the back, reddish
at its edges & bordered with yellow.
This border extending in with wings
ant. & post. along the dorsal ridges.
Body translucent & yellowish green.
In the center of dorsal patch a
pale yellowish space contains two
depressed green spots. L. 4.5 mm
VII July 21 As before but, 4 yellow spots
in a transverse row before patch which
broad yellow border extends post. but
not ant. some way on s.d. ridges.
L. 6 1/2 mm VIII July 29 Like 212A but
the patch is dark purple brown, the
crimson edge indistinct, and a few

IV IV

209 A

See 209

On brick Jeff. Highlands July 14 1895
Hd. 5 + L. 2.6 mm. Oval both ends rounded
the ant. more obtuse than the post.
Dorsum arched highest point in back
before middle. S.d. & lat. ridge low,
not prominent. s-r ridge shorter than
lat. Ridge body smooth, not
scalloped at all or tuberculate,
the setae more obsolete. Body
covered densely with close set, ap-
pressed watery granules, then sides
forming polygonal granules but in
certain depressed areas they are
absent; these areas consist of a
single row of large ones alternating
with 2 rows of smaller ones on each
side adjoining the ridge. The small
setae on the ridge are opposite the
small areas. On the lateral area
the same arrangement but below
the large spaces above lat. line a
very small space occurs, alternating
with the lower row of spaces. Trans-
verses on lateral ridge papillose,
subdivided at tip in some cases
sp. post. Str. space more coarsely
granular, a single row of depressions
alternating with the spiracles not
well defined and scarcely smooth.
D. large space int. on seg. post 2 small
adducal ones. Body light green incl.
brownish on mantle except 4 pale
dots with hint of reddish on e-d
ridge on 6-19

One on brick Jeff. Highlands July 14 1895
 Hd. 5: L. 2.6 mm. Oval, both ends rounded
 the ant more obtusely than the post.
 Dorsum arched, highest point a little
 before middle. Sd & lat ridges low,
 not prominent. S-r ridge shorter than
 lat. Ridge ably smooth, not
 scalloped at all or tubercular,
 the setae nearly obsolete. Body
 covered densely with close set, ap-
 pressed watery granules, then sides
 forming polygonal granules but in
 certain depressed areas they are
 absent; these areas d. consist of a
 single row of large ones alternating
 with 2 rows of smaller ones, on each
 side adjoining the ridge. The small
 setae on the ridge are opposite the
 small areas. On the lateral area
 the same arrangement but below
 the large spaces above lat. line a
 very small space occurs, alternating
 with the lower row of spaces. Gran-
 ules on lateral ridge papillae,
 subdivided at tip in some cases
 esp. post. Str. space more coarsely
 granular, a single row of depression
 alternating with the spiracle, not
 well defined and scarcely smooth.
 D. large space ant. on seg. post 2 small
 adducal ones. Body light green yel.
 brownish on marks except 4 pale
 dots with hint of reddish on a-d
 ridge on G-9

~~July 19~~ Sd ridge rounded, lateral
underrated prominent, smooth as before
green, the pale yellow sd dot more
intense 6-10, a wine red shading
occupying d space 7-9 replacing the
yellow on the dots and extending a little
beyond it, forming a diffuse clouded
faint square patch. Body light
green, yellowish. Sculpture across the
lateral ridges of appressed clean
granules are a little broader, having
more than one granule in line like
angular appressed glass beads. Depressed
areas finely granular. Setae obsolete,
scarcely discernible except at the ends.
S-V the interstices, depressed areas are
rather well defined, comma shaped, being
composed of a larger area with a small
one below it, giving an amphitetrachal
nine pointed star above lat. ridge
tail subquadrate, a little contracted at
base and margin of 3 rounded.

Head 1mm - (catag) .85 or .9 (on glass)
Eat whole leaf, July 21. Patch pentagonal
diminuted, pale centrally containing 3 grand
impressed spots; broadly bordered with yellow
which runs post. on sd ridges half way
to tail, never reaching lateral ridge on d.
(Eat whole leaf July 22 - gone on back P. v. h.)

~~July 24~~ Depressed areas deep & well
marked, finely shagreened granular. Ridges
coarsely densely warty tubercular, as
before. Areas in 2d space reniform, the
granulation of elevated area fine & clean
above. as first marks same but purplish
Hd. 1mm Length 5.7 mm (July 26) Res dot
on 3. Patch purplish, widened red & yellow
pale centered, yellow post on sd ridge



209 A (cont)

Instage 2 July 26 - eating, length 5.7. Patch covers 5-9. Dorsal hollow on 7 and intersp. ad-d on 6-7 7-8 whitish, d. on 7 with a green center, the space on 7 enclosed by these depression scales. This forms the pale center of d. patch. Patch begins on 8 ant, widening, margin indented, reaching down in an arm nearly to lateral ridge on 7, narrowly indented ending rounded on 9 post. Color dull dark olivaceous with a bright red and a yellow border, the latter cent. along. Sd ridge post to back and ant as a dot on 4 & on 3 the latter including a red patch. Imperforates finely & closely granular, lateral ridges appeared coarse granular. On the sides appeared spaces in a lateral large & sublateral sep. space, a next sd and sublateral intersp. rows as before, same sculpture. Below lat

ridge large reniform intersp. spaces
the granules less defined. S-V folded
margin smooth. Length 6.7 July 27
July 28 6.5 x 3.8 mm. Can evident elongate
as well somewhat - 6.7 x 4.3 July 29 - went
on back July 29 PM [D. imperfect spot just on
sg. 1 a little on next seg; ad-d segmental]
Mid Aug 3. S-V imperfect spot broken and
confluent into an oblique reniform. 2 setae



ad. 85, 2 on lat ridge - 1 arm
1 below, fine short 1 seta
next to ad-d small depression
on sd ridge. ∴ large depression
intersp. joint 3 has ant.
a d depression, then 2 ad-d ones. 13 has a single
d. depression after the one 12-13, no other dorsally
Dors. finely contiguously watery granular. the small
ones uniform, the large ones with glandular
central rounded area, showing by transparency.
Ridges coarse & dense watery granular, almost
watery, rather irregular. 7.5 x 4.5 - color not changed
Hd. 1.4 (increased while in hard - green) 8 x 5 - Aug 5. getting older.
The d. space is narrow, the lateral wide.
Colors pretty well assumed Aug 5 P.M.
Spot connected with spot near head"

Code egg on white oak Bellefont 29
Aug 2 1896. 1.0 x .6 Elliptical
flesh whitish translucent on
the leaf, shiny. Rets. faint
in a strong side light visible
as narrow, brown elongate
hexagonal lines, slightly more
opaque than shell.

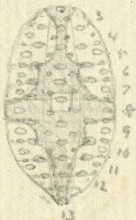
Hatched Aug 8 9 gray Y back, limbs
longer than shaft, alternately as
it is. @ 5 not up, colorless, shiny
flesh green. Skin smooth.

Aug 8 eating 75

" 10 " "

" 11 dead

Smooth, rounded tail subquadrate,
highest through 5 but just angled
elliptical, sd ridge rounded over, d.



Dorsal view
x 3

Space narrow, lateral
broad, just sloping
as line is well
flattened. Superficial
ridge (iii) smooth
prominent, exceeding
sv ridge. SV Space
small, hollowed,
the SV ridge prom-

inent, nearly equalling last one.
Body light green, yellowish the impressed
spaces whitish with green
glandular centers, except
large ventres. d. which have
blackish centers. The
patch is blackish olivaceous



Ventral view

green with a narrow crimson edge,
ventral which is a diffuse light
yellow border. The square central
spot in 7-8 is pale salmon except
in the 5 impressed spaces which it
covers which are whitish. Band
begins broad in 3, narrows quickly
and covers d. impressed spaces, median

Turning out a spur into large lat
interseg. depressed space on 5-6,
widens further reaching edge of
lat. ridge on 8, narrows, with
a spur to lat. space on 9-10
narrows further and runs to tail
just filling the dorsal space.



Length Aug 5: 8.5 mm - 9.5 x 5.8 Aug 7 3 mm high.
Later patch paler olivaceous, its circum
edge distinct. Aug 9, 9.5 x 6 x 2.7 stopped
eating. Eating again Aug 10 PM. White to spine
Aug 11 spinning

Another found on fire cherry at ant.
Crescent house shed Aug 6, on 7, 5.8 mm
patch not forming, but now continuous
from 3 - tail, but does not quite
reach edge of lateral ridge. There
are no points on 5-6 & 9-10 but
the margin is straight. Later



the posterior point ap-
pears but the ant.
ridges is notched by

the lat. depression 5-6 instead of
forming a point into it. Aug 10 7.5
Aug 12 8 mm Aug 13 8.5 - (wavy)

Another with normal mark except pale patch
not  but spread in a diffuse  to sd ridge

Little code all whitish no
marks on white oak leaflet
L.I. July 19 1896

Shed while coming home, same
whitish, depressed space all
present and shape as in
T. pallida, tiny black setae
along ridges. Skin closely
granular subopercular S-V.
Length 2.1 eating hide. Tail
gradate, faintest trace of
yellowish patch in middle of
back.



IV

Little Harrisia
on grape vine

Red cross code B209

Cells

I	.76 - 1.1	.88 - 1.3
II	1.1 - 1.6	1.3 - 1.8
III	1.6 - 2.2	1.8 - 2.6 ✓
IV	2.2 - 3.2	2.6 - 3.7 ✓
V	3.2 - 4.5	3.7 - 5.3
VI	4.5 - 6.5	5.3 - 7.5
VII	6.5 - 9.3	7.5 - 10.7

On black oak July 29 2mm (mant) 2.1
(Stage III?) All whitish with slight pink
green tint. Dep. spaces as in next. &
Same shape or larger in proportion.
Salted ridges 1 granule wide. Setae
visible but very small. blackish.



red +
3.8
to shed

end of IV?

another 2.6
to shed

red +
6.5 7.5 still

end of VI?

spoon mouth
three
quarters

New colcs. July 1896
allowing growth in I

.78-1.1 I 484 ^{209B}_{8-1.1}

1.1-1.6 II 209B ✓

1.6-2.3 III 209B

2.3-3.3 IV 209A 2.6
209 2.7

3.3-4.7 V 209A —

4.7-6.7 VI 209A 5.7
212 6.5-

6.7-9.5 VII 209A -9.5



St

9 eaten Head Aug 11
See 671


299C Came out 685-

Two more *Roukenkeria* Aug 13
also with 7 back on
white oak stage 5 as
Specimen 7.9. Aug 9 1897

Length 1.1 mm to shed
shell Aug 12. Black setae, spines; good granules
more papillae & cleft up. esp on ② but
also on ①! ① beaded slightly, setae a
little alternating. ② faintly greenish.

Code egg on back of black oak
leaf, singly against small rib.
Beekmant July 31 1896

Elliptical, flat, transparent,
a slight pearl luster in
certain light. No perceptible
color, shiny. Rets. very obscure,
not seen with $\frac{1}{2}$ inch, 1.0 x .6

Hatched Aug 8. 7-9 jumped & back
just like fig. plain, @ 5 up a
trifle. Spine tapering, swollen tipped
shiny, ground glass white but rather
too clean for ground glass, smooth
elliptical, tapering behind 
but on will cherry

Sub A alternaty
with three as in 212
(1 above s-d ridge, 2 below
it, 3 above lateral ridge
(and 211))

212

now 1/2 in. along
d-region now
large below s-d
ridge, with 3
smaller rows

now 1/2 in. along
d-region now
large below s-d
ridge, with 3
smaller rows

IV nodes on with hazel July 15, 1911
elliptical with slight 2 bit. Back &
sides & constituted a lister just before
post. extremity. Many sub-elliptical
depressions which are smooth, the
rest of the body minutely papillose.
A large diamond shape purple
horn patch on the back, reddish
at its edges & bordered with yellow
this border extending a little way
ant. & post. along the dorsal ridge.
Body translucent yellowish green.
In the center of dorsal patch a
pale yellowish space containing two
depressed green spots. L. 4.5 mm
July 21 As before but, 4 yellow spots
in a transverse row before patch which
broad yellow border extends post. but
not ant. some way on s-d ridges.
L. 6 1/2 mm. VI July 29 Like 212A but
the patch is dark purple horn, the
rimmed edge indistinct, and a c

