

271-292

H. G. DYAR

YOSEMITE, CAL.



ONE PRICE ONLY  
 WRITING PAPER,  
 & ENVELOPES  
 BLANK BOOKS CHEAP  
 LEACH  
 36 NASSAU ST. N.Y.

33  
 18  
 ---  
 264  
 33  
 ---  
 594

Sh. lbs of *V. antropa*

1.2	2.4	3.2
1.5	2.4	3.4
1.5		3.2
1.4		
1.4		

#12 South Liberty St.

25

299



ONE PRICE ONLY.  
WR. ING PAPER  
& ENVELOPES  
BLANK BOOKS CHEAP  
88 BRIDGE  
ST. NASSAU ST. N.Y.

271

Eggs laid by white ♀ *Coleia eurytheme* Yasum.  
Cal. June 4, 1891 on little alfalfa-plant

Egg spindle shaped, set on end, longitudinally  
ribbed, the ribs hardly more than lines and  
apparently very minutely striated but hardly  
seen with glass. Pale yellow, becoming reddish  
Length 1.6 mm, width .5 mm Laid singly

[Larva in 1st stage? Hd dull black W. 25 mm

Body minutely trans creased dull dark greenish

Length 1.6 mm when found Molt June 8 Head

green with minute black dots, ocelli black,  
mouth brownish W. 4 mm. Body dull green

minutely roughened & pilose, the long bristles pale

Hatched June 11 Hd black, same as above desc.

[Molt June 16 Hd round pale green thickly dotted with

small <sup>brown</sup> black piliferous spots, ocelli black, mouth

pale; w. 7 mm. Body leaf green, annulated,

covered with black piliferous dots, each sur-

rounded by whitish. A stigmatal whitish

line. June 17 Hd green

[June 19 Hd green speckled with black piliferous

dots, mouth a little yellowish, ocelli black.



W 1.2 mm Body as before but stig. line  
 very distinct, white, almost absent on 13.  
 Nests June 24 Hd. green, thickly covered with  
 little black piliferous dots: ocelli black  
 mouth brownish. W 2.2 mm. Body green,  
 annulated, the black piliferous dots each  
 indistinctly surrounded by whitish. Very faint  
 indications of a dark d. & pale s-d line.  
 Stig. line distinct <sup>high</sup> white, marked below  
 by a row of segmentary black spots. Later  
 a pink & yellow line appears in the white  
 band with black spots are faint.  
 Chrysalis Tho slightly enlarged, abd lapp  
 wing cases projecting, large, head ter-  
 minating in a point - as usual in Colias  
 eyes prominent. color light green, a  
 yellow shade on the point on the head  
 & a yellow lateral band on the abdomen  
 below which is a row of black dots and an  
 interrupted dark red streak. a row of  
 black dots at outer margin of wing cases  
 2 19, w 4 mm. By loop & cremaster  
 Imago July 7 ♂ Colias eurytheme

Scale. Hb. 847. 1.25 Y 1.37 2.8 ratio 67  
 found .6 YOSE 1.3 CALIF. copied  
 desc. of larvae Brit. larvae 1.8 from yr. I.  
 272  
 Mat. J. Loggins on willow along ridge  
 at entrance of Nevada trail, June 9, 1891  
 Hd bilobed, the apices produced and  
 tuberculate as if covered with <sup>californica</sup>  
 than wide, depressed along <sup>zephyrus</sup>  
 Dull olive brown, the excrescence <sup>270A</sup>  
 black, mouth dark. <sup>Wygans</sup> <sup>body enlarged</sup>  
 dorsally at 3, 4, & 5, on 3 a pair of 2-d <sup>P. cardiacus</sup>  
 roughly tuberculate, 2 mm long. On 4, 6  
 11-13 small o-d tubercles <sup>P. eurytheme</sup>  
 and close together. A number of small <sup>P. rutulus</sup>  
 smooth elevated bilobed dots <sup>most common</sup>  
 dorsally on 5-7 & 11-13. The prolegs are <sup>243</sup>  
 brown, shading into pinkish on joint  
 2-4, but still partly mottled with the  
 ground color, on the hump on 6, pale olive  
 yellow, except in a dorsal band where  
 the ground color prevails, a large patch  
 nearly white on 8-10 dorsally but on 8  
 parts & 9 laterally, contrary a few streaks  
 of the ground color. <sup>207 P. eurytheme?</sup> <sup>245 P. eurytheme?</sup>  
 Apr. imago head <sup>200 P. eurytheme?</sup> <sup>245 P. eurytheme?</sup>  
<sup>200 P. eurytheme?</sup> <sup>245 P. eurytheme?</sup>



H. G. DYAR

white sub-stigmatal band on 5-13  
Spiracle <sup>YOSEMITE, CAL.</sup> pale centrally, & encircled  
by white. Processes on 3 & tubercles on 13  
blackish brown. Venter mottled with  
whitish with a median-ventral nearly  
white line. Anal feet elevated in apex  
and body hunched, turned to one side.

Pupa June 13 As usual in *Limnitis*. Eye cases  
prominent, pointed, thorax beaked, wing cases  
very large, projectory; on the ant. part of the  
abd. dorsally is a very large circular disk  
like projection, its sides somewhat creased  
abd. tapering the last segs rounded off  
Cremaster large, flat, fastened by its nu-  
merous hooks in the spirals of cells spun by  
the larva from which the pupa is suspended  
Cases & abd. hump subtranslucent, <sup>dark</sup> olive  
gray, thorax dull purplish mottled with  
white; abd. nearly all soiled white but  
shaded with gray and black, dorsally, laterally  
and in a <sup>double</sup> broad ventral band, but the terminal  
segment & cremaster are entirely black.

Length 25mm; thickness through thorax 7mm;

H. G. DYAR. <sup>Willow, choke cherry, & poplar</sup>

Height of adult ~~9.5 mm~~ <sup>3 mm</sup>; greatest  
width through wing cases 8 mm.

Imago June 27 *Limnitis loquax*  
The egg June 28, sub-spherical, the base  
flat, covered with rounded depression,  
from the intersection of <sup>(which)</sup> the elevated ret-  
iculations, which cause them arise short  
spines <sup>the def. bet. the cells are rounded</sup> like pale. Color pale green with  
a silvery luster. Single at tip of leaf. <sup>2.9 mm</sup>

Stage I: June 29 on little perch made of bit of  
stuff spun to end of leaf. Hd round, ~~pale~~ brown  
not shiny, eyes & jaws black, a few minute  
hair from yellowish elevated bases W. 6 mm  
Body slightly enlarged at 12, feet normal,  
yellowish, with row of short conical tubercles  
largest dorsally on 3, 4, 6 & 12 with some  
very short and minute hairs. <sup>Without</sup> a long perch

Egg hatched July 3 W. hd. 6 mm as above. <sup>2.3 mm</sup>  
Inst. July 3 Hd rounded, brown, with 2 pale  
lines in front converging toward vertex; roughly  
tuberculate, the tubercles yellowish <sup>[sh. hd. 9]</sup> W. 9 mm

Body densely tuberculate, each tubercle with



\* black dorsal dot on 8 & 9. Indication of a white s-v band especially on 11-13. Feet black

**H. G. DYAR**

several joints, besides many minute granulations. General color dark brown with

**YOSEMITE, CAL.**

a broad dull ochre dorsal patch which widens on joints 3-5 and 8-10. Sits out at end of long perch, with bits of dead leaf at base

Molt July 7 Hd bilobed, bulging in front, very rough & tuberculated but tubercles not large.

Color <sup>nearly black</sup> dull brown dypens & tubercles pale, the latter, laterally, tipped with yellowish <sup>[Sh. hd 1.3]</sup> W. 1.4 mm

Body rough & tuberculate, a pair of s-d tuberculate processes on each joint except 2, those on 3, 12 & 13 largest, those on 4, 6 & 11 next in size, the

other all smaller. Other similar, tubercle in a double d. line & 2 lateral beside numerous

small granulations. Body black with a dorsal white patch on 8-10, reaching down the side on 9

All the tubercles & granulations are dull yellowish more especially on joints 2-4. Pupids no perch.

Molt July 12 Hd bilobed, densely tuberculate, the tubercles larger laterally & especially so at the vertex blackish brown, darker centrally the tubercles pale

W. 1.8 mm. Body with a series of round wart like prominences which had turned into a pair of horns 1 mm long those s-d 4, 12 & 13 larger than others. Body densely tuberculate

black, a dorsal white patch 8-10 down sides on 9 all tubercles pale brown. Some d. clear color <sup>shades</sup> on 3 & 4

Scale. .47 .73 1.1 1.8 2.8 ratio 64/16

found — — 1.0 1.8 2.8

\* general color wood brown mixed & streaked with black esp. laterally in def. bet. the abd. & around the spiracles. a lustrous silvery spot on the joint just post. to it. 3 to the side a small one on L. of pupa 18 mm w. 6

**H. G. DYAR**

**YOSEMITE, CAL**

Hd square, flattened in front, tuberculate and hairy, with a spined process from the vertex of each lobe. Bases of antennae pale. W 1 mm

Body reddish rufous with long black spined processes as follows on 2 none, but a few hairs on 3 & 4 s-d & stigmatal with a few hairs s-v.

on 5-12, 1 dorsal spine, s-d, lateral & s-v on 13 two s-d. C-shield, anal plate & feet and spine black except bases of those on 3, 4, 6, 8, & 10 which are yellow, the

d. & s-d spines on 4, 6, 8, & 10 very especial yellow. Spiracles black in a white ring

An irregular double waved d. and stig. pale yellow band.

Molt July 16 before but body nearly black. Width of head 1.7 mm. <sup>[Sh. hd 1.8]</sup> As stage advances the stig. line is in duplicate, above & below the spiracles, irregular & waved with a third part more indistinct

dull orange. broken subventrally. Dorsal line is much replaced, especially anteriorly, by transverse streaks on the annulets which are

black

black

black

black



shaded on **H. G. DYAR** yellow posteriorly  
and here presenting more of the character  
of dorsal line. **YOSEMITE, CAL.** on 8 & 10 pale

yellow, on 3, 4 & 6 buff. In repose anal  
feet are elevated, head turned around trunk

Molt June 23. Hd bilobed, a spined process at the  
vertex of each lobe, below which is a smaller  
process not spined but tipped with a hair, clypeus  
large, color shiny black with many small  
yellow piliferous tubercles. W 2.8 mm Body black  
the branching spine black, large, except the

<sup>spined processes</sup>  
s-d s-d 3-6 which are orange, while those on  
8 & 10 have their bases white and tip pale  
orange. A narrow dorsal pal yellow line  
on 2 & 3. On 3-6 trans. streaks of orange and  
on 7-12 of creamy white, especially in the  
seg. incisures, connected on 8-11 by traces

of a double dorsal line. Str. line represented  
by a few orange spots in the region of the  
spiracles. Spiracles black. As the stage  
advances the white increases on the dorsum  
appearing more faintly at bases of the process

on 7, 9 & 11, leaving however a distinct oblique  
elongate patch of the black ground color  
before each s-d spine <sup>on joint</sup> 7-12 in  
C. o. o. or wild current same but very red, hind  
color is still black but largely obscured by the dorsal  
whitemarks, a ventr. very pale. All the normally black  
spines are dark red, the s-v are straw color.

Dorsal on 3-6 are orange, 7-12 white tipped reddish  
Hd dull red, clypeus eyes & spines blackish  
June 30 Pupa July 1. As in Scapha Thorax with a  
dorsal ornamented prominence, a protuberance over  
the eye & 2 laterally at edge of wing cases. A s-d  
row of rounded points & another lesser row below  
the spiracles. Wing cases project abt tapering  
cremaster large, flat, its hooks in button & gilt\*  
June 30 July 12 5.30

H. G.

**YOSEMITE, CAL.**

<sup>Y. 111</sup>  
<sup>copied July 31 1891</sup>  
Stella on horseberry Yosemite June 14, 1891  
elongate elliptical, flat below, the feet all  
short, sides sloping, dorsum forming a narrow  
flattened ridge, slightly wider on 3 & 4. Body  
highest at 5, tapering down each way to the  
extremities. Hd actuated under 2. W 1.8 mm  
The mouth parts surrounded with brown. W 1 mm  
Body minutely pilose, with very small white  
granulations, a s-d white line along the  
ridge (.6-1.3 mm apart) interrupted at the  
seg. incisures (which are deep) beginning on 3,  
most distinct on 3 & 4, somewhat fainter  
centrally and somewhat more continuous  
posteriorly. A similar fainter line on the  
s-v ridge, becoming obsolete at the extremities.  
Both lines look as if not quite on the surface.  
(Length, 1.7 mm, width 5 mm) Spiracles small  
circular, yellowish. No subdorsal tufts of  
setae. Ashield very small, triangular, depressed  
in the center of 2  
Pupa micro Robur, short, rounded, dep.  
recessed bet. tho. & abd., small, abd. segs.



appressed, **H. G. DYAR** motionless. General color sordid  
 green, most **YOSEMITE** and **CALIFORNIA**, thorax  
 with a few blackish speckles and a smoky  
 black dorsal line which is continued in a  
 row of dots on the abdomen. Each side of thorax  
 on the central part of the thorax is a white  
 streak supplemented on the post. part by  
 a <sup>short</sup> white curved line. On the abd. a <sup>d</sup>-d  
 row of black spots and a number of small  
 black dots besides an obscure white line  
 on the post part of abd. each side of the  
 dorsal row of dots. Abdomen pinkish  
 laterally. Length 12 mm, width 5.5 mm  
Imago July 6 Cal. no. 6594

*Chrysophanus arota* Bd

Hds cell.	.3	.5	.7	1.1	1.8	2.8	4.37	7.64
found	.3	.5	.9	1.2	1.9	2.8		

275

Oct 4, 1893

Eggs (proctid) on wild gooseberry Yosemite Jan. 4, 91  
 Normal hemispherical [O] <sup>l</sup> dorsally reticulated  
 with numerous depressions, forming rows running  
 to the vertex (like a thumb), micropyle a  
 circle of smaller elongate depressions [O]

Some 40 rows all around the egg. Color sordid  
 grayish white, not shiny. Diam. 7 mm.  
 Laid in a mass, 2 layers, on backside of leaf  
Hatched June 15 - Ad pale testaceous, shiny, mouth  
 brownish, eyes black, W. 3 mm. Body pale  
 whitish, subtranslucent covered with large  
 black peripheral dots. Only the last 3  
 pair of abd legs <sup>dist</sup> present with larva loop  
 about very active, other abd feet rudimentary.

Molt June 22 - Hd pale whitish testaceous  
 densely spotted with black. mouth brown W. 5 mm  
 Body pale soft green, 12 enlarged, the 2 and 8  
 pair of abd smaller than the rest. Peripheral  
 dots large, black. A broad evident white  
 stigmatal line beside narrower d, d-d  
 and lateral similarly colored lines. Pile  
 short, black.



Molt June 27. Head pale white with large  
black piliferous spots, mouth brownish  
W. 9 mm Body blackish green, a dusky  
s-d, faint lateral & broad distal stig-  
matal white lines, the latter a little  
greenish centrally. Piliferous spot, large  
black, faintly encircled with whitish

12 enlarged, feet normal, pile short black  
Molt July 1. Same. Piliferous dots not distinctly  
surrounded with whitish. Body minutely  
mottled with black. 12 a little enlarged  
feet normal, abd. each with 2 black dots  
like dots as in Chrysa <sup>① 2</sup> not small ① also  
not small. The feet greenish tipped black.  
Spiracles black with small white center. <sup>with 1.4</sup> Hd 1.2 mm

A broad dull red band appears in the center  
of the stigmatal band. Black of body variable  
Molt July 5? Head shiny pale whitish, articulated  
with brown and bearing a number of large  
black piliferous spots; ocelli black; a blackish  
streak at the vertex of each lobe W. 1.9 mm  
Body dull green, heavily mottled with black  
specially at the sides where it is more

entirely velvety black [D. & s-d line narrow  
white, stig, sordid reddish, bordered  
above & below by white. Piliferous dots  
black with white center, legs pale.

Molt July 11 Hd pale whitish with a tinge of  
green, a patch of brown reticulation on each  
lobe, bordered above & below by a broad  
dusky brown streak; a number of large black  
piliferous dots; mouth brownish; ocelli black

W. 2.8 mm Body enlarged slightly at 12, feet  
normal, <sup>13 divided by a distinct</sup> color blackish green, consisting of  
black reticulation on a greenish ground, a  
narrow <sup>black edged</sup> white d. line interrupted by a series  
of black intersegmental shades, double on 12,  
a reddish tinge s-dorsally, a narrow black  
edged white s-d line; a broad lateral black  
shade; piliferous dots white, a broad  
dull red stig. band bordered with white  
venter paler than above, mottled with  
brown, s-r. piliferous dots black. Spiracles  
white with a linear black edging. Feet  
all pale. Hair fine, pale, about 1 mm  
long.



In molt July 17 Hd. as before, Pil dots smaller  
to Body as before but the green color is nearly  
all replaced by a pale brown line.

Fluck July in a compact hardened elliptical  
cell in the ground without web.

Pupa cylindrical, abd slightly enlarged  
to centrally, cases moderate prominent;  
a slight depression bet. the abd.

remains very short, consisting of 2 fused  
spines, separated at the tips and two  
on other outside, but in line with them

color light brownish yellow, unicolor  
length 14 mm; w 5 1/2 mm darker in  
the abdominal sutures.

Head formed in pupae Sept 2 1891

Xylomyges puelubens Lat (2)  
auct J.S.S

noctuid or? Ypsironta, (265B) Head pale whitish  
brown, reticulated with dark brown, shiny.  
mouth & antennae pale W 2.5 mm Body  
reddish brown only slightly mottled  
by sparsely streaked with black. Pil.  
dots white. Traces of a dorsal s-d  
paler line, defined by narrow blackish  
borders & a broad shy band encircling  
the pale spiracles, only slightly more  
yellowish than the general even & very  
inconspicuous. Ventr pale. Body not  
shiny. (head)



Calc. .33 .63 1.38 2.6 rates .53

Found <sup>35</sup> H. 7 G. 4 D. 2

<sup>91</sup> Coped July 30 277 Ichthyoma

Eggs on willow <sup>Yosemite</sup> <sup>AL</sup> <sup>June 17 1891</sup> Hemispherical or slightly conical, base flat, lat edges rounded, smooth, dark gray (lat?) diam .7 mm

Hatched June 18 Hd shiny black, labrum pale

[Sh. hd .35] W. 4 mm Body slightly flattened, whitish

C-shield black, a few pale hair, 5 & 12

slightly enlarged dorsally, the lateral region and 5, 7 & 12 dorsally are widened. The feet large, pale; abd. normal, all used. L. 2.5

Hatch hole in vertex of egg and larva rest of abd spun together, 2 larvae as a hump & began to eat

Another figure 22 [Sh. hd .7] Hd brown

Hd black shiny, central suture deep. Body flattened, pale whitish yellow, narrow topical dorsal, & very broad lateral bands of dull wine color

as also humps on 5 & 12. C-shield & anal plate black [with dull greenish, legs black]

Hatched June 20 Head shiny black, labrum pale, a few dark hair [Sh. hd 1.5] W. 1.2 mm

Body as before, anal region pale yellow, s-v below the hump round pale, with an indistinct triple line of dull wine color. Line is hump on 5

under 1/2 in 1/2 covered with <sup>shallow depression</sup> <sup>high from by these edges</sup> <sup>reticulations</sup> [Sh. Hd. 8] UYAR

July 1 Hd flat in front, slightly tubed brownish black, pale <sup>dark</sup> <sup>Yosemite</sup> <sup>CA</sup> <sup>the</sup>

chryso; a few hair. W 1.4 mm Body pale yellow, joints 5 & 12, a tubercle a-line, broad lateral & confused triple s-v line all dark brown, C-shield & anal plate blackish

Scattered, <sup>pale</sup> <sup>rise</sup> hair from smooth round tubercles inconspicuous with the markings. Hair pale.

July 8 Hd pale brown shaded with black a white shade each side chryso in front. jaws & eyes black, width 2.6 mm

Body as before but the lateral band is faintly divided by a double yellowish line. J. 13 nearly all yellowish. The round smooth

quadrifera tubercles are distinctly yellow in the yellow markings. C-shield small, <sup>traces</sup> pale brown, anal plate not distinguishable

Hair whitish from both body & head. As stage advances the color become quite pale and the appearance is much changed. Humps

on 5 & 12 very slightly, dark purple. Ground color whitish gray, <sup>becoming pale purple</sup> a tubercle dorsal

dull purple line, 3 lateral lines, the central <sup>one</sup> most distinct, the other broader &



(Rhamnus cal)  
Egg on coffee bush, spherical-conical base flat.  
Smooth shiny chocolate brown; diam 1 mm.  
Also on choke cherry, June 18, '91 (worthless)

(27) cont)

diffuse. **H. G. DYAR** <sup>in a leaf</sup> somewhat broken  
into moth-like **YOSEMITE, CAL.** (spiracle  
black) some purple or smoky spots  
pale. Pit tubercles yellow, normal in  
arrangement. Small post spiracle tubercle  
apparently absent. Hair whitish, three  
one from each tubercle. Head out flat.  
Cocoon of 2 leaves spun together and  
lined with threads. Made July 19.

Pupa nearly cylindrical, flattened a  
little ventrally, gradually tapering  
posteriorly, but of nearly even width,  
no part enlarged; last abd. seg.  
rounded forward by slender, ter-  
minating in a knob, that seems to be  
radiating strongly recurved  
fornix of minute forks. Dark and brown,  
cass & thro. nearly black. L 11 mm W 3.5 mm  
Imago ♂ July 28. Cat no 6743 *Ichthyura bifida*

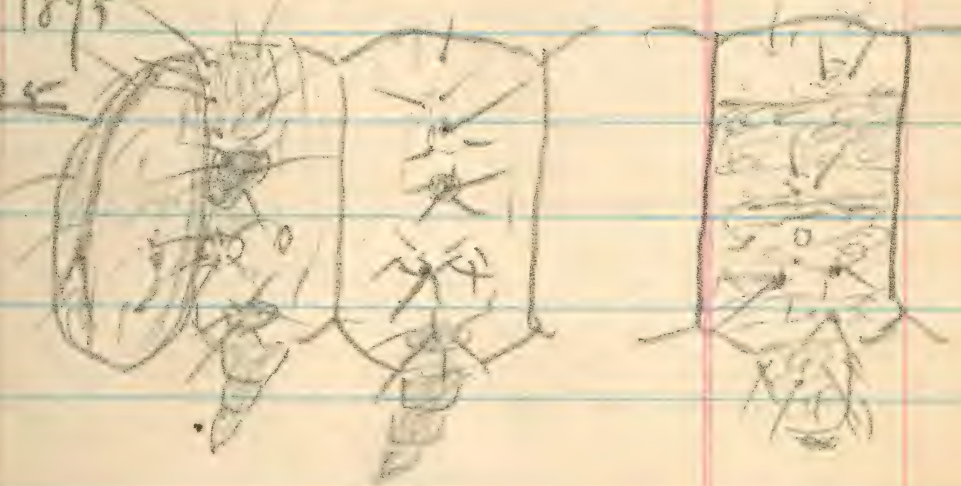
*I. bifida*

This species <sup>as well as</sup> *I. brucei* by Edw  
must come very near to *I. van* Fitch  
if they are <sup>not</sup> merely western forms  
of it, but the <sup>large</sup> *I. van* is still  
unknown as <sup>it is</sup> impossible  
to compare the <sup>early</sup> stages.

These larval had 4 stages  
and then are two blocks in <sup>paper</sup>



Ichthyura, probably *I. van* hatched from  
egg on poplar, Jefferson Highlands N.H.  
June 19 1895  
Walt Jones





279

Pupa on a rock Yosemite June 17, 1891 Much like a *Scaptia*. Thorax very slightly elevated centrally, & obtusely pointed. eye case large. Wing cases very large, rising round above the abdomen at their proteral end, a gentle depression bet. thorax & abdomen. Abdomen curved over ventrally, the nematode fastened in a circle between on the L side of rock, so pupa touches along its ventral surface. General color chocolate brown shaded with pale brown and black; eye & wing cases black, slightly mottled with pale brown; thorax largely mottled with pale brown and with 2 dorsal black shades, obscure & diffuse. On the anterior part of each abd seg. is a broad black shade, cut triangularly on the dorsal line by the pale wood brown of the posterior part of the segment and shading into chocolate in the so. incisures. 2 little elevated black angle spots on each seg. Spiracles shining black. L 20mm W 5.5mm <sup>DEAD</sup>

Head slight blunt point in each seg. just covered by the L of the black band

Call	.75	1.18	1.84	2.88	4.15	ratio .64
found	.7	1.2	1.8	2.9	4.5	

280

*Hosackia grandiflora*  
 on kind of bean, (Pulse fam.)  
 June 18, 1891. Laid on under side, singly. cylindrical, slightly conical, flattened above and below. About 15 slight ridges running to the anicotype which is slightly depressed and obscurely reticulated. Color uniform very pale yellowish. diam. 9mm. ✓

Hatched June 23 Hd large round, shiny black of shield large, black, joint red. Body not shiny, uniform greenish yellow, another pale cape

Molt June 28 Hd large, slightly bilobed dull black, covered with minute whitish pile. W 1mm (shld 1.2)

Shield large, shiny black. Body uniform green, covered with minute piliferous whitish granulations which seem to form an obscure sd line. Dorsal vessel slightly darker. ✓

Molt July 2 Hd large, rounded, uniform brown. black as in last stage. W 1.9mm (shld 1.8)

Body as before, sd line indistinct, distinct

Molt July 7 Head large, rounded, minute & densely punctured, covered with minute white pile which does not obscure the surface. Color



[Sh. hd 2.9]

m. ~~Thorax~~ ~~antennae~~ ~~black~~ W 2.7 mm. ~~Body~~  
 C-shield ~~very~~ ~~large~~, shiny black, Body greenish  
 yellow, minutely granulated, covered with  
 very minute shag pile. A not very distinct  
 red yellowish line. First pair of thoracic  
 feet black, the rest concolorous with body.  
Inst. July 16 Head large, rounded, median  
 suture shallow, somewhat deeper over vertex, clypeus  
 very indistinct - densely covered with small  
 granulations, merging into creases around the  
 mouth - densely but minutely pilose. Color  
 deep brown, almost black, unicolorous (with  
~~no trace of yellow spots~~) somewhat reddish above  
 the mouth. Month black W 4.5 mm Body, 2 small,  
 C-shield large, covering the upper part, half of 2  
 black, the rest of 2 dull red, its spiracle large  
 pale. Body largest centrally, tapering each way,  
 sordid greenish yellow, <sup>paler at the sides,</sup> mottled with black  
 around the numerous yellow piliferous granulations.  
 An indistinct blackish d. & lateral line and  
 broader more distinct yellow s-d line, all  
 becoming obsolete at the extremities. Pile  
 covering the body & head, except the smooth

Egg on choke cherry Ypsocampa June 18 1891.  
 Spherical, smooth shiny chocolate brown D. 6

C-shield ~~very~~ ~~short~~, whitish, appearing  
 very slightly frosted like Erycides batavicus  
 Late suffused with a coppery tinge, ✓  
 Began to hibernate about the last of July <sup>Put in ice box</sup>  
 Put on ice at Santa Barbara. Took out last of Dec.  
 still alive Feb 10, 1892 but shrunken & weak.  
 Dead Feb 13, 1892



282 \*

whitish, a darker dorsal line and yellow  
s-d are the whole surface thickly dotted  
with small yellowish spots. All parts  
concolorous. No c-sh. nor anal plate.  
Int. caly Aug 24 (See box Aug 26). Flew on ice  
at Santa Barbara; off about Dec 20.  
Released out box Feb 16, 1892 and did not  
find it. Probably dead.

calc .6 .9 1.4 2.1 3.2 rat. 66

282

Little larva in house on willow in Endicott  
Cypress Jun 18, 1891. Hd trilobed, black,  
not shiny, labrum pale, a few short pale  
hairs. W. 4 mm. Body not shiny, pale yellow  
immaculate, minutely but sparsely pilose  
(lost)

Another egg 6 Hd trilobed, apices of lobes pointed  
rough but without distinct tubercles or punctures  
densely covered with short white pile; labrum  
smooth; w 2.2 mm. Body small at 2, largest  
centrally, no c-shield. Seg. suture rather deep  
& all minutely pilose. Incolorous pale green,  
rather whitish & densely covered with small  
obscure yellowish spots, a darker dorsal and  
pale yellow s-d lines, faint at extremities (see 283)  
Next egg 8 Hd very cordate, rounded, not shiny,  
minutely pilose; pale brown but black on  
the labrum, occiput and vertex between the  
apices of lobes as also slightly along median  
suture above clypeus. Two obscure whitish  
vertical shades on each side of the front.  
W. 3.2 mm. Body uniform corded greenish



283 Aug 16

283 H. G. DYAR, 1891

YOSEMITE, CAL.

on willow grass, mouth, labrum

testacean, pale, jaws black. W 3 mm Body flat ventrally a 2-v ridge, sides sloping, dorsum flat, widest where the body is thickest (5) and narrowing to each extremity, annulated

granulated with white, fine short pile white. Soft light green (not yellowish) a faint

distinct s-d white line, beginning on 3 near together widening to 5, then gradually

narrowing post, becoming faint and somewhat diffuse on 11-13 a simple very

distinct line on 2-v, fold, obsolete one but distinct even to anal plate. On

the sides between the lines a series of oblique faint white lines, 2 on each seg, joined at the steps.

The body tapers more than in the other

shells. G shield in center of 2, small, indistinct, sunken, irregularly triangular L 15 mm W 4.5 mm

Pupa By cremaster & steep. Flattened ventrally abd, large, rounded, segs, appressed; 4

slight depression. H. G. DYAR, throy, morning

July 5, 1891, color, ~~not~~ Indian purple

YOSEMITE, CAL.

(Pl VIII f 6), mottled with blackish, case, dull greenish, heavily mottled with black, an

obscure pale s-d line (1.2 apart) and a faint black dorsal line, the latter running

the whole length L. 9.5 W 4.5 from Imago July 5 Cat no 6592 = 6478



*Salix* (only) *Ikelloggii* *I. chrysolepis*

*Rhamnus* *Salix* spp  
willow *Salix* spp

284

Aug 25

*Oxygaster* on live oak, *Oxygaster* Cap flat June 20, 1911

Stage I mated, *Oxygaster* shiny

Body & warts black, hair thin black, bristly, on pencils not bush tufts. S-d warts on 2 large, retractile tubercles on 10 small, dull blood red. Dorsum pale on 3, 4, eq.

Stage 1.2 mm hd black with a brown tinge, labrum white. Body black except on the dorsum on 3 & 4 where it is yellowish white with a black dorsal line, and a yellowish s-d spot on 7 & 10 ant. Warts all black, hair long black, short plumed black pencils from ① on 2 (none on 12) small dorsal black bush tufts on 5 & 6 and a few short tufted white hair on 7 & 8 warts ② on 9 a little red tinted. Retractable tubercles red. Length about 9 mm

Stage 1.7 [Sh hd 1.8] 1.8 mm hd brownish black, labrum & antennae soiled white. Body greenish black below, gray on the sides a black s-d and yellow 2-v line dorsum largely soiled yellow; c-shield, a black d-line on 3, 4: a

black whitish subventrally, 13 dark grey  
Stage 2.1, 2.2 [Sh hd 2.2 mm] [Sh hd 2.6 mm] (2.2) hd shiny black with a faint brownish tinge. Labrum & antennae pale yellow. C-shield black, pencils 7, 2 & 12 3 mm long - as before. Body as before and hair the same. The warts are ① ant. sub-sub-dorsal 5-12 ② s-d, ③ ant. stig [④ absent] ⑤ s-v ⑥ s-v, just at bases of legs, ⑦ small on center of legless legs. On 2 ② & ③ on c-shield, small; ④ large, s-d; ⑤ large lateral; on 3 & 4 all present but ①, and curved up somewhat, on 13 but 3 warts the upper 2 large; very minute warts on the anal plate & spiracle black, a white dot pres. to each. The black, <sup>shade</sup> surrounding the bush tufts fills in nearly all the dorsal space. Bush tufts from ① & upper part of ②

Calc .6 8 1.2 1.6 2.2 3.1 (4.3) 7.72

Hds .4 7 1.1-1.3 1.8 2.1-2.2 3.1-3.7? 3.8?

H G J Y A R

shade surrounding the tufts on 5-8, and a broad black **YOS** **IT** **CA** -12, all black. Warts ①-⑤ & red, tubercles all blood red, <sup>(except on 2 which are black)</sup> concolorous, Plumed pencils of short hair on 2 & 12, <sup>black 2.5 mm</sup> tufts on 3 & 6 brown, on 7 & 8 white. Other hair long black, whitish subventrally, 13 dark grey

Stage 2.2 hd shiny black with a faint brownish tinge. Labrum & antennae pale yellow. C-shield black, pencils 7, 2 & 12 3 mm long - as before. Body as before and hair the same. The warts are ① ant. sub-sub-dorsal 5-12 ② s-d, ③ ant. stig [④ absent] ⑤ s-v ⑥ s-v, just at bases of legs, ⑦ small on center of legless legs. On 2 ② & ③ on c-shield, small; ④ large, s-d; ⑤ large lateral; on 3 & 4 all present but ①, and curved up somewhat, on 13 but 3 warts the upper 2 large; very minute warts on the anal plate & spiracle black, a white dot pres. to each. The black, <sup>shade</sup> surrounding the bush tufts fills in nearly all the dorsal space. Bush tufts from ① & upper part of ②

Stage 2.2 hd shiny black with a faint brownish tinge. Labrum & antennae pale yellow. C-shield black, pencils 7, 2 & 12 3 mm long - as before. Body as before and hair the same. The warts are ① ant. sub-sub-dorsal 5-12 ② s-d, ③ ant. stig [④ absent] ⑤ s-v ⑥ s-v, just at bases of legs, ⑦ small on center of legless legs. On 2 ② & ③ on c-shield, small; ④ large, s-d; ⑤ large lateral; on 3 & 4 all present but ①, and curved up somewhat, on 13 but 3 warts the upper 2 large; very minute warts on the anal plate & spiracle black, a white dot pres. to each. The black, <sup>shade</sup> surrounding the bush tufts fills in nearly all the dorsal space. Bush tufts from ① & upper part of ②



G Calc 46, 71, 1.1, 1.7, 2.6, 4.0 ratio .65  
F Found 4 7 1.3 1.8 2.6 4.0

[Stage 4 mm hd on deciduous oak, in the cranny  
June 22. Hd shiny black, labrum a little paler.

**H. G. DYAR**

Body soiled purplish black, a dorsal yellowish

**YOSEMITE, CAL.**

shade on 3, 4 & 9 and whitish stig. line  
wants black, s-d on 2 large, hair thin, but several

from a row, black. No brush tufts, pencil.  
no retractile tubercles, but the places of

the latter are indicated by a dorsal red spot  
on 10 & 11, not elevated, molt June 24 = St 2 hd 7

[Sh hd 3.1 mm]

5th stage, molt June 24. A marked change. Hd brown-  
black, shiny; clypeus pale, labrum & antennae

white. W 3.7 mm. Body velvety black, a white  
luff s-d line on 3 & 4, represented by buff spots

on 5, 8-11, a little further down the sides; a  
similar smaller s-v row the whole length

as well pale, shaded with black, its wants  
crimson. Wants of the ①-⑤ fine dark crimson,

large, the hair long & black. Pencil flattened  
black, 7.5 mm long! Retractable tubercles

crimson, a little brighter than the wants.  
Brush tufts large, all unicolorous (!) brownish

silver gray, darker along the crest. Feet  
reddish, black at their bases.

\*could not pull head through 3.6 slot but just did with effort 4.0 Sh hd 2.5-24 with 2.2

Calc. .5 7 1.1 1.5 2.2 3.1 4.4 ratio .70  
Found .4 7 1.2 1.7 2.2 3.1 4.0

[Another Sh. hd. H. G. DYAR, head 3.6+ 4 tufts gray, same]

[ " head 2.1 (molt. hd. 2.8 [3mm-] 4 tufts gray] cut left tuft

[ " Sh. hd 2.3 molt. hd. 2.8 [3mm-] " " ]

Later the brush tufts darkened to black cen-  
trally, the side hairs remaining white.

July 7 (cut right tuft) brownish pinkish  
Hd round, black shiny, a white line  
above the mouth; antennae reddish; w 3.8 mm

Body dark gray, black dorsally, a s-d band  
and stig. broken yellow band. All the

wants ① ② ③ ④ ⑤ & red tubercles & cervical shield  
fine crimson, the tubercles a little brighter

wants ⑥ small, just a pinacle when yellow.  
Hair long, black. Pencil & brush tufts as

before the former 6 mm. long. [5 mm as sh. hd]  
\*Cocoon dormant on 3 & 4 except a narrow black d-line  
venter pale.

[Another Sh. hd. 3.1, head 4, 3.5+ .75 on 4 and 3.6-]  
[ " (from 5th stage!) 2.6 x " 4- 3.5+ ] cut a tuft. in other can

not 5 pupa July 5  
Cocoon July 3. Hd 3 mm. DEAD  
regular, nearly opaque, composed of hair & silk

Another cocoon July 3. Hd 3.6 mm. not DEAD as larvae  
Cocoon July 4 (no 3) Hd in cocoon 3.6 mm ♀ pupa July 6

Egg July 19 laid in mass on top of a covered with a slight  
ant. & white fleshy matter and thick, with the  
diameter 1/2 mm, down from the body of the moth.



have eggs to Packard, Lenthies & Bohm

♂ pupa Robt. H. G. DYAR caeca prominent

Abd tapering, cremaster long, terminating

YOSEMITE, CAL.

in minute hooks. Sparsely covered with

rather short fine whitish hairs. Color

rather light brown, spiracles black.

Length 12 mm, width 5 mm. ✓

♀ pupa very large & robust, thorax & caeca

small, wing case of moderate size. Abd

nearly cylindrical, cremaster flattened

ending in many hooks. Smooth very

shiny pale brown with a few sparsely

distributed pale hairs. Spiracles black

Length 22 mm; width abd 9 mm,

width thorax 4.5 mm. ✓

♀ imago extremely large & robust, <sup>small</sup> ~~strong~~ and

slender, wings larger than usual, 6 mm

long. Color white with a faint brownish

tint, hair dense especially on abd. below,

breast broadly dark cinereous both on

thorax & abdomen. Wings faintly brownish

eyes black; antennae short, pectinate.

Length 8 mm, width of abdomen 12 mm.

♂ mated with ♀ Aug 24, 1891. Q. cana

Insects on willow & wild currant Yosemite

(Sh. 12, 4)

June 22, 1891 Hds 2.6 mm 2.7 mm 2.7 mm

Hds black, shiny smooth, labrum & 2nd

of antennae pale yellow. Body not

enlarged at 12 but 13 small. Pityifer

tubercles very large, shiny brownish, each

with a single hair (1) present. spiracles (1)

present. Hair not long, pale. Body solid

greenish white of no special color and

slightly translucent. a. d. & s. d. pale

white lines, a broad pale yellow stig.

line shaded with orange centrally

contracted narrowly & indistinctly at the

anal part. Spiracles black. Body more

or less mottled with little white spots

molts. Hd light shiny red brown, labrum & base of

antennae white, jaws & ocelli black. W. 4 mm

tho. feet pale red brown. Body solid sub-

translucent white. D. & S. d. line narrow,

faint, white; stig. broad pale yellow, en-

closing the black spiracle. Pityifer dots small

black, with somewhat elevated larger bases, with a glass body mottled with white. Larva in

honey of leaves lined with silks with hole in one end.

January 7th / Cal. no. 6908 xylomyia crucialis



Calc	.267	.506	.954	1.8	3.39	ratio .53
Found	.25	.5	.95	1.8	2.15	
			286			

A p d 7-23-91  
 Beet II

Egg laid by ♀ J. ~~viridis~~ June 23, 1891. Spherical a little flattened at the base with about 12 vertical ribs running to the micropyle. color shining pale green. Diameter 5 mm.

Hatched June 29 Hd rounded black & shiny .65 mm Body sordid greenish with long black hairs curving forward from slight lustrous tubercles. Feet inconspicuous with body.

Molt July 2 Hd bilobed, black & shiny, with a number of hairs. W. .5 mm. Body sordid purplish, almost black, tubercles about black bearing numerous short fine hairs, those cervical shield yellowish (orange) anal plate black. Tubercles on shield black.

Molt July 6 Hd bilobed, <sup>a conical tubercle at apex of each lobe</sup> ~~apex pointed~~ black shiny with yellow piliferous tubercles W. .7 mm. Body <sup>the series of spinous processes</sup> ~~lustrous~~ black, more reddish <sup>lateral</sup> subventrally, a ~~sd~~ conical orange tubercle on 2 and a yellow smaller

<sup>S-V</sup> lateral one on joints 2, 3 & 4 each. Spines none on 2; sd & lat on 3 & 4; d, sd, super-sty & sub-sty on 5-12; 2 sd on 13.

July 22 <sup>2nd</sup> pupa July 23 <sup>3rd</sup> pupa <sup>H.I.</sup> pupa 12 with later yellow leg. dash this stg. almost a continuous line

(5) (6) **YOSE** albi, **CAL** legs, As stage adv. a double d. & s-v row of white & later bases of sub-sty. spines & anal feet orange tinted

Molt July 13 Hd, bulging laterally, bilobed a long spinous process at the apex of each lobe, pointing forward: black, very shiny

with many white conical setiferous granulations, labrum & bases of antennae whitish <sup>(sh. hd .8)</sup> W. .8 mm. Body velvety black

the long spinous processes shiny blue black, a short one above the spiracle on 2 & a longer one below it beside a short one

sty. on 3 & 4, orange. A geminate dorsal & stigmal cone of white dots, 3 or 4 per seg. Feet all black, the abd. tipped with reddish

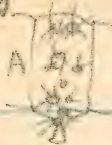
fold of skin on head & j2 orange tinted

Molt July 17 Hd bilobed, a short process from the vertex of each lobe: many conical granulations each bearing a hair; several hairs from each process Hd shiny black, largely fulvous posteriorly and at the vertex a fulvous patch covering the claspers; granulation fulvous or yellow, process black; labrum & bases of antennae white W. 2.5 mm Body velvety black the body (.5 mm) and slender spinous processes shiny blue black except (5) & (6) which are pale orange. A geminate diffuse dorsal series of numerous minute yellow dots <sup>marked</sup> <sup>a geminate</sup> <sup>sty</sup> row of large yellow spots with many minute dots like the dorsal series. Spot at base of spinous (5) & (6) and abd. legs reddish orange the feet black. Spiracle black with a pale yellow border. (5) & (6) pale orange



Imago July 15 Cat. no. 6681. A feather wing moth,

*Pterotiactylus*



287 May 13 1898

An aster (pupae) June 23. Like *Stictia* but resembles a sawfly. Hd. rounded, higher than wide, green, partly retracted, ocelli black, mouth brownish. Body nearly cylindrical, tapering a little each way from the middle. Uniform green with a whitish dorsal line and many round concolorous tubercles from which grow 7 or 8 radiating short white hair & from the dorsal rows (1, 2, 3) another long dark hair. Rows as follows: ① & ② beside each other near sd ~~base~~ ③ lateral ④ superior (not small) ⑤ & ⑥ beside each other on st. the feet, one small (then the 5-1 fold) ⑦ 5-8 ⑧ 5-8, at base of <sup>small</sup> legs ⑨ 4 dorsal ones on venter. Feet normal, i.e. 3 toes, 5 abd on 7-10 & 13, the leg very slender, clasper longer. Ab. extremities the venter are fewer. <sup>no corn</sup>  
 Pupa July 1. Long, slender, suspended by cremaster only. This small, and tapering, cases projecting over abd. half way to extremity. Uniform green covered with tufts of sparse radiating hair like the larva. 9 11 head W 2.5 mm

Call	.32	.58	1.06	1.92	3.5	rates .55
found	3	.6	1.1	1.9	3.5	

10/21/91

S SSSSSSSSSSS  
 S S S S S S S S S S S S S S S S

Hatched on June 24, Egg shell cylindrical, base flat (top gone) with several vertical ribs. Diam 6 mm. Larva Hd rounded, black & shiny W. 3 mm ash & anal plate black, body very blackish with a number of short dark hairs. Feet normal. Skin rough (slight) on it. <sup>[Sh. hd. 6] \* 2200</sup>  
 Pupa June 27 Head black shiny, a few hair, W. 5? mm Body dull black, furnished with rows of short conical tubercles each with a long hair, blackish, those of ① & ② on 6, 8 & 10 pale yellow. Hair blackish, feet black.  
 Pupa July 1 \* Hd slightly bilobed, black, shiny, a few black hair from minute tubercles. W. 9 mm Body black covered with spined processes as in *Scaptis*, black but 3 dorsal on 6, 8 & 10 yellow their spines black. <sup>uniform</sup>  
 Pupa July 2 Hd bilobed black shiny many black hair from elevated bases W 1.7 mm Body black, minutely dotted with yellow. <sup>processes</sup> black except bases of 3 dorsal ones on 6, 8 & 10



Spin. house mainly of ant.

which are ~~dark yellow~~ ~~spines~~ ~~apparent~~  
~~arranged as in shaft (disc. in anat. larva)~~

As <sup>the</sup> stage advances a very generous geminate dorsal & single s-v broken yellow line appears

July 5 Hd rounded, mouth part projecting uniform sub-lustrous black, mouth paler

base of antennae reddish. Covered with black hair of considerable length which arise from <sup>small</sup> tubercles. width 3.5 mm. Body <sup>deep</sup>

black, with numerous minute yellow piliferous tubercles bearing whitish hair

The shafts of the body spines are all more or less colorless but the bases <sup>the bases being blue black</sup> & tips are all black. arranged as follows

① dorsal ② ant-d ③ super-stig ④ sub-stig. above bases of legs a cluster of <sup>numerous</sup> large pil. tubercles. Tail 2 narrow spines

3 & 4 leave but two (s-d & lateral) white 13 two but two, both s-d, (i.e. one each s-d on

the 9th & 10th abd segs.) Body deep black brownish subventrally. on the legs, a row of obscure intersegmental stigmatal red dots and a similar row of larger

sub-stig ~~88~~ yellow ~~88~~. Color of abdomen ~~88~~ pale. Still makes house of getting & leaves similar to Pyrausta.

In some the sub-stig yellow dashes almost form a continuous band, and there are indications of a geminate yellow <sup>also</sup> dorsal line almost disappearing under the glass however.

July 12 Pupa July 13 Hd. large, eyes prominent thorax very slightly ridged along d. line with one elevated point prob. centrally and a pair

of s-d small points, 2 points on the lateral edge of wing cases & 1 near middle of outer margin of wing. Abd rounded dorsally, nearly

straight ventrally. cremaster broad & flat, <sup>a sd. s-d row of conical points</sup> its border is <sup>white</sup> ~~black~~ dotted with black

& shaded with smoky gray, broadly dorsally (except a narrow d. line), narrowly stigmatal & broadly ventrally, more irregular & clouded

on thorax & cases. All the points tinged with shining gold or bronze. L. 13 W 6 mm

Imago July 21 Pyrausta cardui.



Calc.	.33	.47	.67	.96	1.37	1.96	2.8	4.0	ratio 70
found	.3	.5	.7	.9	1.4	2.0	2.8	4.0	

See 28295

289

2815 2817

Little hairy larva on willow, Yosemite Jun 28  
 Hd bilobed, flat in front, black & shiny  
 mouth reddish [Sh hd .9] W.S. 1mm Body enlarged  
 dorsally at 12 and apparently also at 5  
 as this part is held highest. Feet normal  
 Bristly black hair grow from black wart  
 in 5 rows, (1 apparently wanting) 3 & 6 Small  
 Body whitish, almost white in places  
 especially s-d on 10-12. The hair is  
 almost wanting on 11 and is thick &  
 tufted from s-dorsally. \*because it is  
 almost in line and  
 is very small.

Inst 5 29 Hd black shiny, bilobed, rounded  
 clypeus bordered with white mouth hair  
 brown. Some coarse black hair by 6 mm  
 Body black a s-d row of pale yellow spot  
 forming a broad band on 10-12 & s-v / m s-v  
 fold) similar colored band. The s-d  
 line on 10-12 is supplemented by a narrower  
 line below it, both ending on the hump on 12  
 Hair thick bristly, mixed black & white,  
 tufts of shorter softer black hair s-d on 5  
 almost meeting over the black & a small

divergent s-d ones on 12, not near each  
 other  
 Later narrow white d-line, orange s-d on 11.  
 Inst July 2 Hd bilobed, high, shiny black  
 smooth & 2 converging bands each side of the  
 clypeus, white; width 1.8 mm. Body as before,  
 hair long, white. S-d tufts on 5 brown,  
 a similar white one on 6; short s-d  
 divergent <sup>black</sup> pencils on 12. The feet black  
 Later the s-d & s-v bands become strongly  
 shaded with red & the s-d tufts on 5 & 6  
 separate into 2 tufts each.

Inst July 6 Hd bilobed, black, shiny, three  
 white lines (the lower labrum) surrounding the  
 clypeus & base of antennae white. W.S. 2.8 mm  
 [Sh hd 2.8]  
 Body a wide black, a narrow interrupted  
 yellow dorsal line, a similar but broader  
 crimson s-d one, more distinct on 11 and a  
 more continuous <sup>sub-stig</sup> crimson one. Hair  
 & bristly white, mixed with a few black,  
 hairy head, thicker on anterior part  
 On joint 4 s-d, some brownish plum  
 a hair on 5 - two s-d tufts of orange  
 red hair & below them a lateral tuft of



short white hairs; on 6 there tufts of short white hair, the tufts not distinctly separated but arranged fan-wise. On 12 the long divergent pencil of black hairs. Joint 12 a little enlarged & held elevated. with a small white tuft just below each. Has

the appearance of *Argyria* BB284 at 1st stage. Warts large, <sup>small, just spiracles</sup> present, rather small. a few plumbed short white hairs from ① & ② on 3 & 4; longer plumbed hairs tufts from ① & ② and white tuft from ③ on 5; white tufts from ① ② & ③ on 6; long broadly plumbed black pencils from ① & ② (the warts are almost coalesced, 1 post. on the other) short white from ③ on 12, (the wart on 12 is small & situated post. spiracle)

Molt 8/15 Practically unchanged. Hd. bilobed lobed rounded, shiny black, apices of lobes brown. Sutures of clypeus & a central line white as also labrum & base of antennae. W. 4 mm. Body as before. Spiracles white. Body black. dorsal line orange, other lines dark red. white tuft cell cream color, upper 2 on 5 brown. Warts pale, hair long, mostly blackish.

Later the cream color tuft becomes pale brown (Dead July 27) what is corn?

H 290 AR

Eggs of *Bombus* <sup>BB284</sup> *argyria* June 29  
Spherical, smooth, pale lustrous yellow. D. 1 mm  
(united)

The yellow d. line gives appearance of the yellow dorsal areoles of *Argyria*, the red s-d & s-s. lines of the red warts & the tufts of the horn & white tufts & post. black pencil

291 A Se. 318

*Bombus* <sup>BB284</sup> *argyria* June 29  
Spherical, smooth, pale lustrous yellow. D. 1 mm  
yellowish line, the form broken, the lateral continuous but faint. Spiracles

small, faintly ochreous. very noctiform in appearance. width head 2.2 mm  
B. 2.5 mm, Hd 2.3 but s-d line is moderately distinct, pale yellow, no other line and spiracles more yellow than in A (Ibid 1.45)  
Later more like A.

Like B. Hd slightly bilobed not shiny, pale green  
mouthparts black, ocelli black. W. 9 mm Body  
shades uniform pale not shiny green, with  
a faint yellow s-d line. No other markings  
A & B same. Later s-d line most distinct, the  
s-d & lateral faint. ✓ pale yellow



Calc. .63 .96 1.48 2.27 3.5 ratio .65  
found .9 1.45 2.3 3.5

Mrs St John came to work

Oct 31<sup>st</sup>. Ten dollars for Nov  
after chat 12 per month.

Dec 25<sup>th</sup> paid Margaret 10.00

Jan 10 1892 291 P tremuloides  
P balsamifera

Elaphis on poplar Yosemite July 2 1891

Had <sup>very</sup> slightly bilobed, somewhat flattened  
in front uniform pale green, subventral  
mouth parts paler, jaws black; w 3.5 mm

Body long & slender, noctuidiform in appearance

without humps nor tubercles, gill <sup>dots</sup> <sup>spots</sup>

absent the hair being reduced to <sup>were</sup> ~~the~~

minute rudiments. Uniformly non-  
lustrous pale green, semitransparent,

showing plainly the pulsation of dorsal veins  
and obscure pale yellow stigmatal line

Spiracle dull ochre. Sit on web on back  
of leaf. Feet normal, all used, <sup>in walking</sup> ~~convoluted~~

the claspers whitish. Length 25 mm.

As stage advances \* to yellow <sup>appear</sup> line on side of  
from base of antenna behind ocelli, in time with stig. line in  
head, stig line distinct, pale yellow

dorsal region whitish green, <sup>being almost white</sup> subventral

dark green dotted with yellow

H on Populus grandidentata Fat Yee N. J. May  
31 1896 found with Mr. Beutenmüller who took  
Stage IV & V exactly same! I allowed June 3  
Out Apr 14 1897 S. avimacula Hudson

Spiracle orange, feet ~~partly~~ <sup>partly</sup> ~~tripped~~  
with ~~union~~. Head held out flat when

at rest ~~abd~~ <sup>abd</sup> mottled with white especially  
each side of clypeus. <sup>clayey white center of</sup> Faint traces of a  
yellowish <sup>yellowish</sup> <sup>being white as a somewhat more distinct part of</sup> <sup>one</sup> each side of the

dorsal vessel <sup>w</sup> bordered above very narrowly  
with crimson on the thoracic segs, and

reaching nearly to the end of <sup>the</sup> <sup>abdomen</sup>  
almost meeting around the anal plate

contiguously with the line on the head when  
the insect is in its normal attitude of rest.

Still later the indistinct yellowish dot becomes  
surrounded with yellow there are 7 on each

side above stig. line & 7 in s-r space with  
<sup>others</sup> <sup>same</sup> on ventral of legless segments L 4/11

Began to cocoon between 2 leaves July 8 Cocoon of  
2 leaves & gummy silks. slight but tough.

Pupa nearly cylindrical, rounded, no cre-  
master; abd punctured, cases coarsely  
crossed; color uniform dark brown,

meanly black. L 17 W 6 ✓

Discovered at S. F. Jan 10, 1892 cut no 6874

Elaphis severa ? (?)

another Keene Valley, N. Y. June 29 1894 <sup>see 318</sup>



Calc. 1.2 1.8 2.8 4.3 6.6 ratio .65  
 Found 1.1 1.8 2.8 4.0 *cf* Aug 13, 1891

H. G. ZAR.

Egg by ♀ *H. californica* on oak leaf singly  
 July 3, 1891 greenish, nearly spherical, base  
 flattened a little, covered with hexagonal  
 elevated reticulations from the intersections  
 of which arise short spines. Color uniform  
 leaf-green with a silvery luster. W. 1.5 mm

Hatched July 14. Another hatched July 13 Head 1.1 mm  
 large, round flat on the post. side, roughened  
 with a few little tubercles that bear minute  
 setae. Color pale wood brown, mouth dark  
 brown, ocelli black. Body cylindrical, with  
 short conical tubercles and many minute  
 granulations, each with a minute seta. The

s-d tubercles blackish. 3, 4, 6 & 12 are larger than the  
 others, color green, the tubercles pale yellowish  
 as are joint 12-13. Feet concolorous with body.  
 Length on exclusion from the egg, 4.5 mm

Builds a patch of silk of leaf at end of the leaf.  
 No July 20 Hd large rounded densely covered  
 with 3 spines arranged in a Δ at the apex of each  
 lobe; pale greenish with 2 brown shades, one before  
 & one behind the eye running nearly to vertex.

clypeus small, Δ, pale yellowish, ocelli  
 the three apices of lobes black. many  
 of the spines at the sides of head  
 w. 1.8 mm. Body of uniform indite densely  
 covered with yellowish conical tubercles and  
 a s-d row of tuberculated processes those on  
 3, 4, 6 & 12 much larger than the rest,  
 especially the one on 3) and especially 4 or 5,  
 black conical spines. Color pale brown  
 yellow with indistinctly a blackish s-d  
 band and paler subventrally, as stage  
 advances dorsum becomes streaked with brown.  
 Molt July 25 Hd larger than body, flat behind and  
 somewhat flattened in front, not lobed  
 but central suture depressed, clypeus small,  
 triangular; densely covered with tubercles,  
 a double row of long conical spines along  
 the sides and over the vertex, with another  
 below the vertex of each lobe and a large  
 rounded tubercle above the ocelli. Hd  
 reddish brown, the clypeus, a vertical band  
 over the ocelli, tapering upwards to a point  
 and all the tubercles & spines yellowish  
 white, ocelli and the tips of the vertical  
 & lateral spines black. Width 2.8 mm  
 Body as before, densely tuberculate, many of  
 the tubercles in the s-d & s-v regions partaking  
 the character of branching spines. On 3, 4, 6 & 12  
 are a pair of s-d large thick processes (2.5 mm)  
 covered with granulation & large conical spine  
 like those on the head, on 8 & 11 a smaller but  
 similar pair. General color light reddish  
 brown, with a greenish tinge especially on  
 the sides. The processes are brown, most of the  
 tubercles & spines yellowish but the large  
 spines are tipped with black. Traces of a black  
 s-d. line and black dorsal marks between  
 the processes on 3, 4, 6 & 12.



Molt July 31 Head very large, flattened before and behind, almost disk-like not beveled, the outer from front obtusely conical; clypeus rather small median suture deeper on vertex than elsewhere, front of smooth with only a few slight granulations, but around the lateral edge & vertex <sup>are</sup> a double row of long spines, the vertical ones most prominent, all intermixed with many shorter tubercles, much as in the previous stage <sup>color</sup> brown with a pinkish tinge in front, pale behind & below, a <sup>lightish</sup> band over the ocelli & another obscure one each side clypeus ~~white~~; labrum whitish; ocelli black, the spines, except a black one below the apex of each lobe, yellowish white. W. 4 mm body densely covered with small conical pointed yellowish tubercles on an olive green ground which gives it a <sup>beautiful</sup> mossy green appearance, along the s-v fold these tubercles are very long and thick which gives the appearance of a yellowish s-v line. A lateral row of angularly conical tubercles, larger than those of body, the one on 3 branched; row on 2 or 12 (2nd) subdorsal row of processes are very long and large those on 3, 4, 6 & 11 the largest (5 mm) dark brown covered with many conical thick spines of varying lengths white tipped with black. On 2, row s-d process; on 5 only a slight tubercle; on 7 a somewhat large one branched; on 8 & 11 a moderate process (2 mm) on 9, 10, 13 and anal plate a branched tubercle <sup>or less on s-v suture</sup>. On the feet, short hairs arise from the granulation but not elsewhere on the body. Spiracles on 2 faintly black rimmed, the others inconspicuous when at rest the head is turned down, cervical feet elevated, the process on 3 <sup>point</sup> forward, those on 4 project after laterally, those on 6 lean backward. ~~On s-v line, legs rather brown~~

**H. G. DYAR**  
**YOSEMITE CAL.**

as at adv. the olive green assumes a rather lighter tinge and shades into yellowish at the s-v line. **H. G. DYAR** Aug 10 began to turn other yellow in patches especially laterally & at bases of horns. Aug 11 entirely straw yellow, more **YOSEMITE CAL** below the head pale brown and I by left on back of <sup>✓</sup> V. Pupa shaped somewhat as in Linnaea, a long, pointed, three sided angular prominence over each eye & a carinated ridge runs the length of the dorsum, on the thorax prot. elevated into a prominence which diminishes rapidly posteriorly; on the end part of abd. a flattened prominence, much as in Linnaea but less disk-like from which the ridge continues down abd. end about 2 seg. from end. My cases very prominent, projecting above the surface of pupa, with an angular point at base, & the outer margin elevated. Color pale wood brown with many short darker brown strigae; a dark brown tinge along dorsal line, the edges of my cases & the point over the eyes. Between the tho & abd prominences, along the thorax by the laterally and back of the eyes are large yellowish-white metallic patches. L 23 w 9 mm  
 Imago Aug 23 ✓

*Heterochroa californica*



