9 ovi Dec 31 Euproctis chrysorrhoea

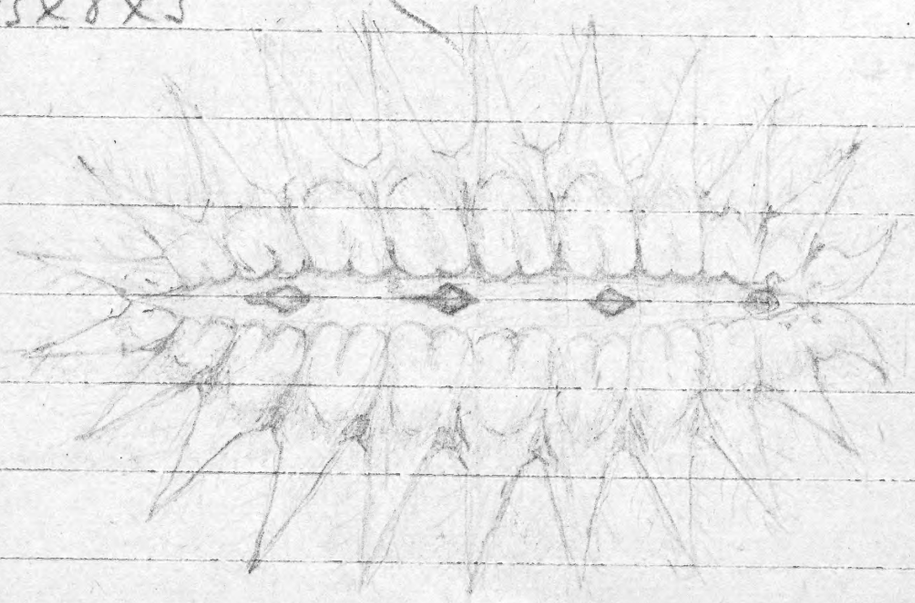
29 good cocns
5 dead
10 parasitic
14 moths

626

Cocs on mangrove, Miami Fla, Dec 26 1896. Spherical on trunk, leaf fastened cocns. Elliptical [illegible] thick cocs with [illegible] projecting down at each end, fringed by a row of fleshy, connect upper edge, crossing each directly [illegible] directly obliquely downward to leaf (3-13 specimens). Not short curved, the rest straight of nearly equal length after 4th [illegible] short [illegible] on the side fringes with long [illegible] smooth white hairs which form a continuous though not a complete fringe. At the base of each appendage, one (No. 12 & 13 where there are not pronounced) is a thick fleshy, heart shaped spine which resembles the upper edge and also a line the same direction, converting it into a chisel. They have short rudimentary white horns and a single long black outward note. Light yellowish green, all the horns tipped with orange red, most are entirely

a blood-red diamond shaped patch with whitish center in the depressed dorsum at joints 4-5, 7, 9 and 11. (4 patches, the ant. one slightly elongate) Horns on 3 & 4 very faintly orange shaded. Sides bid by horns. Lateral area smooth, green, somewhat hollowed irregularly instead horns. Very faint whitish occurs above the spiracles possibly represent them. The fleshy red horns come off where bent sharply upward and leave an area which exudes a drop of clear liquid. S-v setae below. The spiracles neither distinct, white.

Size 13 × 8 × 3 mm.



(no 1)

Dorsal view × 5 PIVK. Dec 27.

[Dec 28 got 21 out cocns + 43 parasitized = 64]

All horns but 3-13 are absolutely absent. The horns arise about in the center of the segment from depressions, and there is a smooth bulge of the skin below. The spiracle on joint 5 is in line with the others but appears slightly unsymmetrical, rather higher in the fold in proportion. There are on the horns a few short pale yellow hairs enlarged toward the end, on the dorsal aspect showing as sparse yellowish dot, being very short there.

(no 2)
Dec. 28 another 13.5 mm. Same, dorsal spots larger and rounded, the one 4-5 centrally constricted. Horns on 3-6, 8, 10, 12 & 13 red tipped, the rest green.

(no 3)
Another (b shed) 11.5 mm. Same but uniformly bright fiery translucent red throughout; fringe hairs white, short club-hairs faintly yellowish.

(no 4)
Another about 9 mm, more than half the horns gone. Green, no marks, the horn areas whitish. Fringe hairs white, short club hairs yellowish. Above spiracle a small, smooth slender

papillae represent (2) on 6-12, absent on 5 one at least on 4. A smooth anal flap under the horns (1) 13. One on 3 in line with that on 4 and abd. (3) 2 setae 3-13

Date	Dec 29	Dec 30	31			
no 1	13 ~~[illegible]~~	spun	Spins by holding up all horn which are young listless; spins a web against the smooth front of body, finally enclosed.			
no 2	13 " "	spinning				
no 3	11.5 " "	~~[illegible]~~ shed	~~[illegible]~~ shed	Jan 1	Jan 4	
no 4	10 eating	11 eat	12 eat	13.5 eat	14.5 eat	Spun Out Feb 21 1897

Dec 30 no 4 has acquired d. red spots 4-5, 7, 9, 11, faint diffuse, uniform. Dec 31 Red spots distinct but not pale centered 4-6, 7, 9 and dot 10, 11, 12, 13.

Skin has curved short pale hair from large and flat tubercle like papillae but colorless with white setae. The horns have 4 hair 1) smooth long setae; and ii, the latter on tip; 2) fringe hair from tubercle smooth at base, then fringe feathered 3) short smooth beside, take 2 without the long tip, 4) very short heavily feathered, stout taper hair. On most horns a long blunt truncate cone in place of ii. In front of (2) which is a smooth fringe like process a long pale seta. A seta on 3 between (1) and stub (2) but nothing visible on 4.

Egg Elliptical, flat, somewhat irregular in size and shape but never circular, transparent pale yellow both on glass and leaves 1.6 x .9 1.4 x 1.2 etc. laid singly. Reticulation rather prominent, quadrangular, irregular, distinct. Laid freely by infertile ♀ on 2nd day.

Megalopyge opercularis? on mangrove, Miami Fla, Dec 28 1896. Hair soft, creamy white, obscuring the body; at about joint 5 on the side there is a parting the hair brushed forward (ant.) up and backward (post) from the spot on each side; along the back a distinct crest reinforced, especially about 6-8 by curled creamy orange hair, the hair from 13 projecting in a somewhat twisted tail. Length 17mm (with tail)

Another (8mm) Skin pale purplish, not concealed by the hair. Hairs thin, curving, creamy whitish, (1) 6-9 with some long curled orange hairs which form a fluffy dorsal crest and by divergence, a short lateral crest on each side, 2 retractile, 3 hairs on j.3 the horns small, two on 4 both large, two on 5-12 moderate, one on 13.

Shed Dec 30 Hair creamy orange, crested,

also slightly laterally, and and lateral just. hair fluffy. Body obscured. Much later mature larva but smaller and rather more fluffy. Shed Jan 14. Like next. Hair fuller than before, the side crests reduced so as to be absent and the dorsal crest curled and most prominent in the middle of the back. Length 14 mm just after shedding (wit tail)

Alcoholic Pamphila ettelius from S. Ruschenweyh, Buenos Aires, Argentina.
Head large rounded not bilobed, coarsely roughened, with fine short pale pile, dark red brown, a large rounded crimson spot before the ocelli; a black shade on the mouth; width 5.3 mm. Neck small, a large red-brown cell. Body white, 2 (except shield) and base of all feet except 13 crimson, laterally on each segment 4 or 5 little transverse broken black streaks; a trace of orange on each side of anal plate (on a pulverulent yellow field). Segs 6–anulate; skin very finely covered with minute white pile, inconspicuous. (tending to form a broken yellow sub line) Crotchets of abd feet in a circle, the long hooks on the inner side and of 2 or 3 different lengths in different feet.

Calc. .32 .49 .75 1.13 1.7 (2.1) 2.6 sat. .66
.81

629

Alcoholic larvae (A. Koebele coll.) from nat. Mus. reared up with Apatelas. Seem to be a Calli-morpha. Head red, eyes & mouth black. W 2.6 Body long rather slender, not small, well alternating, in mass, with col. shining blue black. Body brn black, a very broad bright yellow d. line, narrowed to pass between in each segment, a broken d. line, distinct in the incisure (III), a broad dorsolat. line (also v) incised dorsally by iv, somewhat notched, a pale yellow ring around vi, leg plate blue black, a broad median-ventral yellow band. Hair black, small, not abundant, pale from v–vi. Col. bounded with two blue triangles. Hd 1.7 Same Hd 2.1 Same ventral band yellow in the big ones, pale green in the small one

Euproctis latipennis Rd.
(ASD 1899)

629

Stage VII Head almost rounded, bright red, eyes & mouth black, line above mouth white, setae black. Body brown, heavily mottled with yellow. Not small & with leg plates shining blue black. Hair black & white not numerous, short, tabulated. a broad bright yellow d band widening out between segs, but contracted to pass between narrow in front, passing in a line between the spiracle & base of each, reaching the dark anal plate. a series of rather broad sub-d. yellow dashes (between ii & iii). a very broad yellow stig. band suffused, rather thin, joined patch behind the spiracle & thin green color obliquely downward across IV and another II one from below behind this; also incised by III, obsolete, surrounds v in narrow ring. a ring around vi. a broad ventral yellow band almost joining lateral due in the incisures (2 examples)

Stage VI Head small rounded, tight red, eyes, mouth bleached, lips olive mouth white; petal black red brown, heavily marked with yellow. Nat small, with by plates shining blue black. Hair black, & white not numerous, short bobbled. a broad bright yellow d band widening out between legs, but contracted to pass between narrow in front, passing in a line between the small Δ bones of c-th, reaching the dark anal plate. a series of rather broad interrupted yellow dashes (between ii & iii). a very broad yellow stripe band supra-, subtly line joined broken behind the spiracle of the line of gross color obliquely downward across IV and another II one from below behind this; also incised by iii, obsolete surrounds v in narrow ring. a ring around vi. a broad vertical yellow band almost joining lateral one in the incisures (2 examples)

Stage (interpol) Hd 2.1
Pattern, color lost. Head red, the dorsal band as in last stage or even wider intensely. (1 example)

Stage V. Head red, eye & mouth black. Body blackish, tail chest black & white. Anal blue-black as in mat. Dorsal band yellow, narrowed between 1st dashes broad, intensely. Sty. band single, yellow, but broken down at the opercle and with a few obscure centrally marks of ground color. Ventral band gray, a little tinged with yellow, reaching between VII and VIII. In the other (2 headed and much larger) the bands are as in the stage VI, the lateral band even running up intensely to almost join the 3d streaks.

(2 examples)

Larva of Pseudoglossa lubricalis ♀ OK
from Jutal — eating rotten wood
Feb. 1897

Hd rounded, dull black, finely granular
with short stiff white setae. W 2 ±
Bigger setae short, stiff, slightly curved &
glandular at tip. Cylindrical segs
indistinctly 4-annulate leaden black,
pale s-v, tracheal line pale, spiracles
small black spots. i & ii bare on long
fleshy papillae 5-13, ~~i & ii short also~~
short in n 4 and trace in a & 3 and in
a 4. i-vi, iv behind spiracle, 2 setae
in lateral plate. ii b not seen, others normal
all perfect single. 5 setae in c & d
lead from a rounded lump. Papillae
heads grey, distal ½ of ii white
feet normal in 7 much smaller
papillae 1/32 inch long; ii bent forward.
Another lighter dirty white, tips of papillae
i also pale. Black granules distinct, largest
in papillae.
Crotchet of feet in single row, very long like
a series of claws

Jo

Mr. Harrison G. Dyer

o MARINE BIOLOGICAL LABORA

To Annual Assessment for 1897. - - - - - -

Received payment,

Laurence Minot, Tr

by J. A. Whipple

JAN 8 1897

Please remit to

LAURENCE MINOT, Treas.,

39 Court Street,

Boston, Mass.

Cole .32 .49 .75 1.12 1.7 (2.1) 2.6 mm .66
.51

629

Acrotrichic larvae (A. Koebele coll.) from Red Mtn
reared up with Apotitan. Same as for A. Colli-
cornis. Head red, sparsely mottled black. W 2.6
Body very rather slender, not small, not
attenuating in front, with col. olivaceous blue
black, dorsally brown black, a very broad higher
than 1 lin. marginal pale band between in
each segment, a broken set lines, dorsal ||
in incisures (pl), a broad thoracical line
(also of incisures) dorsally in IX, consequent with
yellow spots like arrows vi, by pale
in black, a broad median ventral yellow
band, with black, small, not abundant
hairs for q-vi. Cth hairs like two
two triangles. Ht (1.7) Same Ht 2.1 Same
ventral band yellow in the 1st segment
[illegible] in the [illegible]

Euophaera latipennis Rd
(ASD 1899)

630

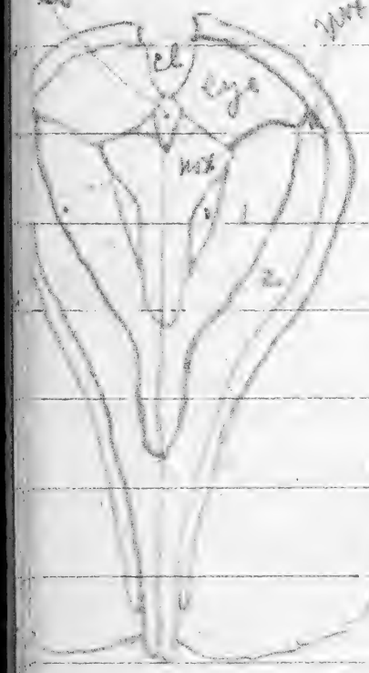
Larva of Pseudoglossa dentricalis

Col.

Larva found in stone ran from under a stone in Mitchell's field by March 11, 1917. Head shining dark blackish, 0 high, w. 1.5 mm. Body shining, dorsal blackish and elongate-oval mottled, obscure dark [illegible] 2 and 3, lateral areas [illegible] to large watery [illegible] away, i [illegible] [illegible] line on [illegible] [illegible] [illegible], iv + v subtly [illegible] single watery area, vi [illegible] single, vii 3 hairs in an oval area [illegible] [illegible]. Setae long, pale, slender at base. The tracheae i a + i b, ii a + ii b, iii separate, iv + v, vi single branch. Anal [illegible] large [illegible] [illegible] [illegible] expanded at tip, cuticle [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Alcoholic Intarsia [illegible] thickness [illegible] from Mitchell's field. Spina Head crushed, flattened, small, retracted in 2 of the specs, clypeal interval depressed, upper segment of labrum forming a ridge dark brown, blunt at the narrow lateral angle; w 1.3 mm. Body segs. distinct, creased, second transe is incisures, but not distinctly annulate, 13 single; cch large, bisected, single marks in flank. Setae dected from rather large flat dark tubercle iii in trapezoid, iii lateral, iv + v form a single o-5 tubercle, vi front, vii above base of leg with viii single; 3 setae; a small secondary interval with one hair retained before the spiracle and at its upper corner. The tracheae i a + i b, ii a + ii b, iii single, iv + v, vi with one setae. On prothorax 6 setae in a row, 3 in prespiracular tubercle, 2 in s-v. Thoracic feet well developed, armed with setae and claw; abdominal distinct, rather slender, cuticle in a varied elliptic broken in the mid side, a single row but doubly clouded, a

slight keels in the interstices as well as the
nerve distinct on outside, both short.
Pupa Smith, obtected (Sculptured through 2nd ant.
U



mxp 4 seg. abdomen tapering each way,
cremaster, head a blot projection,
anal end rounded, cremaster without
projection but 4 rows long
recurved stout bristles. 5 & 6
abd. segs. juncture. Case reaches
to end of 4th seg. Spiracle on
1st to end & secondary when
extend a little beyond 1st in segs 1-3.
Light yellowish brown, see the sutures non-
annot, a distinctly marked in dark brown,
smooth, shiny, no lateral projections or
anikles of any kind. Length $6\frac{1}{2}$, width $2\frac{1}{2}$ mm
for maxillary palpi. Formed by seams to join
eye but on careful examination in dorsal face
is seen to be partially segmented off (mxp)

633 = 409

Egg of Tolype laricis? from Dr. A. Seifert May
20 1897. Three eggs laid on an old leaf of
hemlock. Solitary. Well, dark brown smooth
shell with hair, scales of moth
broken, in interstices hard, flat, rapid
elevated quadrangular to hexagonal, distinct
Size 1.4 x 1 mm, height .8 mm. a little
flattened on sides & lower surface.

Stage I. Body flecks
hairs dark brown
lower second
grey, a white
cremaster dark
skin pierced by
shade along sutures, [illegible] with
line below i. Hatch cuts [illegible] in the
centre segment. Prominent black hair
above is and a few in white between, white
line above ii. Hair black & white [illegible] at
the ends. 13 large gray. No. Hair

a white lateral line, a white transverse line on level of vertebrae and white ≡ line on vertex, a dark on each lobe connected by bright V-marks in sutures. cv. 8 ± mm. No secondary hair or warts. It is throughout very v. scant but present on searching.

Shell hatched 28 Hd 1.4 ± grand white with bands of gray dots across tubercles, tip of Δ band of each side and succeeded by a patch of the lateral aspect, a quadrate spot in vertex and suture notched in front. Body gray with long white hairs, dorsal band, legs and tip, and an orange limited 3rd band. Some reach extremities but gray, large, produced 2 on thorax and 2 on abd, the other last. a covering of short opaque 2° hairs. Tubercle is as completely gone as any. Cocoon blotched with white in vicinity 3-4, 4-5 and fragments on segs 7 and 9.

Shell June 6 Hd as before 22 mm Ch 2 avoid scant cph, opaque and very large, 5th leg

[The other made another other, but finally came out 3.5 shedding June 30, opened July 10]

On thorax 3, a very large wart, 5th one produced into taffeta. Hairs few stiff dark. Tip black 2° hair a, movement pale 5-4 same with V opaque to tip. Colors as before, very dark-like, a dark shade on side of ♂, makes broken fine line in taffeta.

Shed June 17 Hd 3.4 Gray, dotted the pronounced marks finished, hairs contrasting. Body flat, warts 1 & vi prominent, dark gray, black blue, many opaque dotted fan II. Have scant short, long 5th with winged fan at blunt end. In prominence in 12, 1 always reference the uniformly of the dark gray color & broken by a white shade before 4 & 5 — presence of a blackish shading and a fainter white shade 5-4. Second fan of forehead with black opaque, no different to lines. 2° hairs fine, short black, thickly on dorsum II vi.

Spun July 3. Pupa July 17 1917

Tolype laricis ♀

634

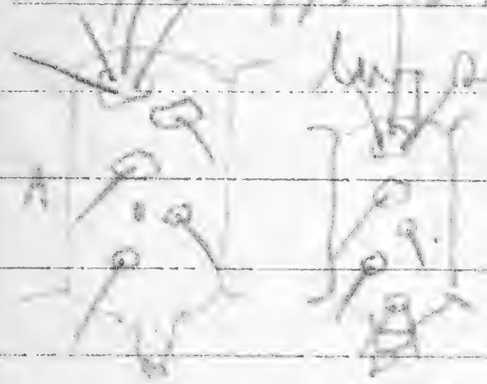
Eggs of Arctia caja from Dr. O. Seifert, May 20 1897. Flattened conical, 1 mm. feet, shining light yellow; D. of ova Rets obsolete consisting of broad ill defined elevation between the small round pits or hollows of the cell areas. Sharply pronounced the rets are very coarse & linear

Calc.	.39	.65	1.08	1.8	3.0	5.0	cat .60
Found	.35	.6	1.0	1.9	3.0		cat .57

(M 1897)

635

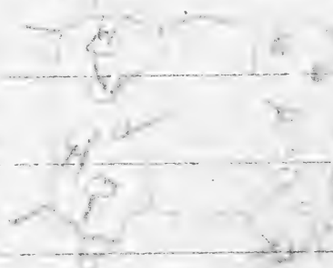
Little ♂, labeled ♀ in history. Cat Zoe, ♀ J. May 23 1897. Hd bilobed, face brown with



very purple black setae, w. .35. Hair black, as in fig. Body white, a large dorsal patch of dark brown as 5, 8-9, 12, a little mottled by pale. Wents long, black. Hair stiff, mainly confined and intensely specular. Shed May 24 Hd sharply bilobed, face brown, a black dash in outline of vertex and pale white mark each side of face; w about .6. Body of a pale white, not shiny, large wents and 5-8-9 and 12 dorsally purplish black. 5-8 cent and all in 11 are whitish as body. Hair stiff, brittly, overreaching, black. is small. Hair of 11 sparse and pale ♀ = 259 = 295 = 317 = 388. Shed May 27 Hd 1mm bilobed black, shiny, a white mark each side Δ and between wents. Body white, mottled with black

d. darker 5, 8-9, 12, 11 and specimen pale a weak median dorsal hair long, white 5-8, mind black, white d, tufts white fine on 5 & 12 the latter forming dorsal tuft a region in the interscutum = 188. in a large vent, larger than 11 and exactly in line then. Shed June 1 Hd 1.8 = black, white V. Body stained fuscous white stressed, a dark yellow red (on 10-12) and [illegible] narrow brown black tufts 5 & 12 and pale white mm 4, 6-7. Cent hair long. Shed June 5 Hd 3 mm (sh hd 1.9) black with V-mark & normal line. Body black, range of line yellow red front. Tufts 5 (i-11) black brown, 3-V (5/11) 6 (in 12) cream color, collared, black tufts 12 dorsal. No tuft 7-11, hair brittle, longer 5-V pale, yellow fatty line. Side mottled. Shed June 13 Hd 4.8 (sh hd 2.9) orbit infect tubes reddish, white V. Tufts flying color tufts 5 and 12 brunet tipped; cream tufts also in 9 & 10. A resin dark red dorsal spot, yellow red & stay line etc. Very fine. (Hum)

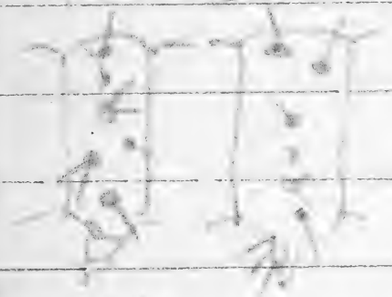
Gathered in spring white oak spring
w/ the leaves. Found into the
spring at Bloomington.
Re-shing black with slender pale
setae, pronotum elongated, w 1.4 mm. Body
translucent white, first 1 tergites
laterad rather evident, dark, reticulate
long, distinct crossbars, the setae
long, pale, from minute dark centers
normal, 18 + 8. No marks except
a curved black band on each
side of the large crossbars on
anal tergite, opaque white dots and
with translucent spots.
Solitary, III 12 in front of and
a little below ocellus.



Out March 23 1898 Cat. no. 14965

Another taken with 636 but
different. Head, eyes and 2 ocelli
below & thorax pale shining black
Body colorless, translucent, slightly
whitish, tubercle arose, w. no
w. colorless, w/ not evident, setae fine
pale but long; normal 18 + 8
The upper one ocellus and thorax
dark evident with ½ in. obj. On final
12 III is situated before the ocellus
on the white opp. mouse. The black
spots in 2 are the only 18 + 8 visible.
Stout, rather pronounced. Arose spots
as in 636 but less evidently marked.
Makes a more abundant show than 636
Solitary. W. bd 1.2 ± mm
Hd 1.7 gives black, set pale
with dark edges. No other
marks. Bog green, setae pale
Out June 21 1897 Gathered. Cat. no. 12788

Entered in cash with preceding. May



1897. Had been out flat black, a rounded dark brown shot in ∆ and then confluent was on each lobe, not confluent w. 1.2 m. Both other fruit black, body dark, variegated, tubercles not large but black and distinct; rather stiff white a white α and ∆ ∓ lin and white ring around all the tubercles, otherwise green slaty gray, halo space velvety brown-black, the marking well blotchy but not blended. Two tiny white dots behind iii suggest a proper lateral band. iii in 12 in front of spiracle. Solitary. The s-v band is broken and slightly orange tinted. Anal plate gray and mottled, concolorous. ~~Fruit delivered 2, June 3, 1897 not smooth.~~ Cat June 25 1897 Cat. no 12790

Similar to 636 in location, May 1897. Had brown over the lobe, black in face with pearl pale, w 1.3 m ± dark, face translucent green, anal pl. dotted with translucent, light green, among bordered by a broad black dash each side. Side tubercles of 2 green concolorous. Setae long pale from midventer amongst the tubercles, arrangement as in 636, ii 12 in front of spiracle, iii + iv a triangle. Tubercle pale black apically. Solitary. Not like 637. (Pale spine and long slender. A large concolorous)

2/7/99

640

Egg from Mississippi said to be "Salmon Columnaris" Woodstock Vt. Regularly ellipsoidal from top view, the surface flattened but slightly, wrinkled, somewhat from disc, bottleneck .7 x 1m "green" dark red when received. Said to say June 26 1897 (Hungerford) not noticeably shiny. June 8 turned black, hatched June 9. The stand little black larva, abd. feet normal. Hd bifurcated, brown blotch with pale center on [5] 4 & 5. Rods all dark velvety brown, abd. by plates and anal plate a bright red, contrasting and from tiny yellow dorsal dots (paired red lines areas on post. edge of segs 5 and 6 - most the tubercles!) Tubercles large, distinct but conspicuous, setae short stout black. Post edge 1-8 and mouth reddish. Seg [8] by thread on distributing and twist up in feces. Shed June 28 Hd 6 all the same color (and the same) black

mium blade as before but the black hairs paired dot are differentiated & a fourth pair on 8 and 1 of 5-9 is produced into a rounded prominence. Hd normal, Δ pale.

Shed June 26 Hd 1.2+ and brown with a dorsal black blade band on each side, 1 on 5-9 big on subtegulum; white dots on 6 & 7 ant. Rods stay longer but diversified with gray in 1 and 2A, circle & dotted bands 5-8 opposed with a transverse blotch on 9. 1 & on 8 large dorsal area and light brown with dark tip. Thorax and 11-13 purely dark.

Feeds Hd 1.9 very irregular & stick-like. Hd flat before after ecdysis, tapered, rounded gray brown, darker stained at vertex. Feet of 2-3 different & protruded with pulled laser, body angled slightly at rest. Segments 4-7 i.e. 5, 6 enlarged. 8-13 much thicker, 8, 9 esp. 10-13 later colorless, tentacle prominent. 10-13 much wrinkled. Dark brown, very frosted, vertex brown d. esp on the prominent points, post. 8 white stained 11-13 dark gray. Below mottled gray, dorsal line dark. Submicant bare, feet yellow bright brown. Dorsal stained and dotted. (d. paired dots dark June)

Shed July 5 Hd 2.7 Same; feet a dark plant purple. Hands of 8 & 9 variegated with shades of brown & yellow. Esp. a dorsal dark Δ on 1 and a dorsal Δ on 8

Shed Aug 3 folding w/ a leaf

Bred in May 1898 Cat. nos. 15020-3

Selenia alciphearia

241 1.34 1.65 2.03 rel .81
2.19 2.52 2.9 rel .17

641

Paragyrica achatina? = 241 = 118 = 63
from Mr Bentenmiller June 2 1897 on oak. Hd 2mm (Sh hd 2.2mm) Black. Body appears black and is nearly so d. but a little mottled with pale, pale s-v, a faint most indistinct pale dotted line. Foot concolorous. Large black pencils on 2, square black tuft on 5 and 12, gray tuft 6-8, each terminal tuft in front of it. Some feathery hair in 3 & 4 and long black hairs on 13 but no fringes. Other hair gray. Tubercles indistinct, rather pale.
Shed June 8 Hd 3± Same. Fine long fringes on 2, few hairs not pencilled on 13. Tufts 5 & 12 black other hair except foot, and around rest tufts. Hairs feathery and as long as the black tufts all even length light gray fine and dense. Some long hairs s-v. Shed June 21 Hd 3.5± (Sh hd 2.5) Same. Shed July 4 Hd 4.3± (Sh hd 3.5) Same

Second day Shed June 25 Hd 3.8± (Sh hd 3.0)
[Both the long rows lacking July 22]

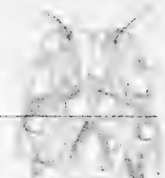
Same Belfast, L. D. June 13, 1897 but very small. Hd black 1.2± Black (brush 5 & 12, gray 6-7, pencils on 2 slight. Head black, foot pale s-v, faint gray [illegible] line. Hair very even except long. Lean foot black. Shed June 17 Hd 1.5± Sh hd pencil 2, gray hair stash 6-8, all same. Ret. tubercles reddish.
Shed June 24 Hd 1.8± (Sh hd 1.4) Same. Fluffy
Shed July 2 Hd 3.2± (Sh hd 2.2) Same
Shed July 12 Hd 4.3± (Sh hd 3.1) Same
Shed July 24 Image of Sphinx Aug 14
[*Spring + fall]

641 Belfast* 1.2± 1.4 2.2 3.1 4.3±
.35 .51 .72 1.03 1.47 2.11 3.01 4.3 rel 2/10
241 + 1.3± 1.65 2±
641* 2.2 2.5 3.5 4.3±

Integer is OK (see note under 241)
Indeterminate in integer VI or first stated before VI or certainly IV, perhaps VII, (if 5 & 12 light in III which ∴ not specific)

Catocala on birdcow, Brown Park, U. of. May (1917). (Shed twice) Hd 3.8 pale stalk gray with numerous short white vertical streaks. Setae simple, coarse, upper one flank. Leg convolution flattened first on 7 & 8 much smaller than the others. Setae from very large tubercle, coarse distinct, perfect simple and normal, and 3 on leg plate. Anal feet spreading 5-v "roots" present, small white pl arise without tubercles thread-like processes, not 2 horns. Body back gray brown mottled with black dots forming frondent broken s-d, lat and blep line. Tubercles orange with white rings. A dusky brown patch between ii on 9 and ii on 12 much enlarged, cervical plate from all before in left lobe, tubercles red center creamy white a dark brown patch in center of each segment.
Spun up among the leaves June 14.
Out

Protodontian egg (2) on green leaf of white oak on upper side Bedford Z. June 3 (17). ⅔ spherical, base flat, clear slightly shining translucent pale yellow, slightly white frosted through roughly but with a small large not frosted micropyle. D. 1.05 mm. Under ⅓ inch distinctly reticulate with rather large regular rounded hexagonal raised lines, linear, widening a little at the junctions and more elevated on the upper part of egg except in the round micropylar area where they are suddenly flattened and obscure and also smaller. Hatched June 14 Schizura sp. Hd light brown, 4 mm. Body yellowish, red on 5, 7 and 12 and 5-v except the large cervic tubercles. Setae long white. 12 browsed and small part left up (the larva got out, but dubitar = ipomoeae) [Jones again]
Shed June 21 Hd red-brown & greenish white

the latter in effects  Rich crimson red
and yellow, red d. in 5, 7, 9, 12 and
all along the side, a very crimson red d.
line. Tubercles large, conic, conglomerate in
a little testaceous, centre long fuscous.
Shed June 26 Like 3/8 III q.v. Hd 1.4 mm
Next day regular little ephippium. [illegible]

Found rolled in May 1898. Unclean out
in roll before.
Zygoon [illegible] 644 J.B.S. Nov 15 1898
= Sheepshead
antennata

Tractor, commonly on planted ornamen-
tal maple at Hereford G.J. June 5 1897
Several in a leaf, two more for a three
feet received, 12 slightly enlarged, centre
angle removed, in 11 stamp were separated
ii to very weak, iii, iv in line, only 1 note on
abd leg plate, thick me and. Light green
narrow dorsal, narrow but distinct [illegible],
narrow anpa-stig, antenpleural unit a
broad stig. whitish brim. Tubercles white
prominent. Stig band a shade yellowish
Setae pale, distinct, centre long. Sent
route, feet green only rendered by the
white v & vi. In some dorsal brim absent,
Hd whitish green, reels dark W. 1.5 1.4 mm
Shed June 6 Hd 2.2 Some spiracles formed dark
rimmed, Hd. pale D. brim isolated, leg
rudiments folded June 13 Hd 3.3 Some a little
more pigmented. Hd 3.0 green, d. brim broad [illegible]
some white dots & green in middle. Stig broad
faintly yellow, spiracle pale rimmed June 21 [illegible]
[illegible] pupated and emerged.

Paraphidippus viridipythariamus
NO Not pub (Rec'd 9/8/98) JBS 2/21/98

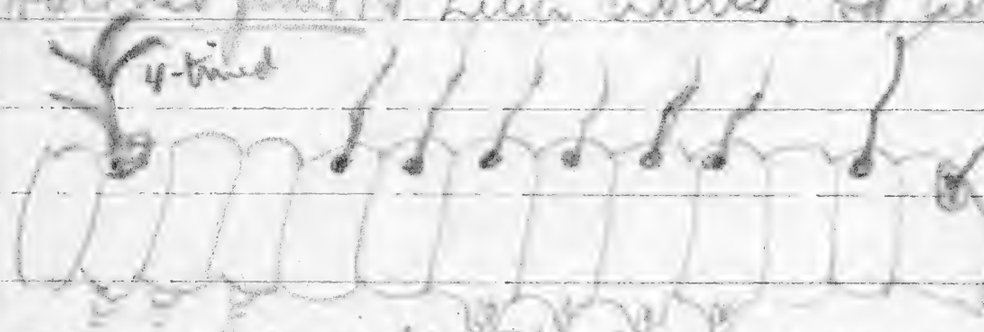
645

Larvae? in any case, Bedford June 6 1897
a little short hair, set on 7, otherwise
bare larvae in habit and appearance.
Smooth green, speckled with white.
Jaws very obscure. Spinnerets, feeds, nor-
mal. Hd white & green. Body white
green, dorsal dark, a lateral straight
white red line & space with irregular
irritably dotted white marks, a large
lateral white line on the
stomach, a little blotched. Hair wattery
sty, sv, scarcely appressed. Hairs
above sv fold. Spinnerets fairly black
ringed. Rest not straight as back of leg.
Feet on 9 have 4 long and 4 a great wide
2 on planta; thorax on 10 a set of hairs before
& behind, broken in middle & large planta
all down and in line. Moult June 21 1897
Last May 1898. Cat no 15024 Now
This is obviously Phidippus pomatorum!
JBS Nov 15th 1900

Many!
Not pub

646 = 203

Zoppa under side black with tiny pencilled
L.J. June 6 1897. Less than hemispherical
flat at base, clean pale green, not shiny
not opaque. Diam 1.2 mm, height .6 mm.
Ribs regular & symmetrical, narrow in notch
the side casting shadows and the real
ones determined on the side toward light
Hatched June 14 Little brown. Hd green with



white red, yellowish in narrows and in
11 d. Feet & leg plates dark. Anal feed up
Hours long 5, diminishing to 10, day 12, short 13.
The branch is very irregular all red brown late
Moult June 19 Hd large, high, running above,
clearly notched, a narrow, cell dark narrow
above, w, 1 mm C. hum 2 short hairs front, otherwise
gone. Body all white brown, smooth, uniform
moved fast clouded. Dorsum a little darker

then the wide, old, foot-worn path. A few patches of reproducing tubercles in 12 (Sk. hd. 6). Late or pale red line is indicated widened in-wards on 11.

Shed Jaws of hd 1.5 x Short horn tipped c-horn. Fringed yellow hair, faint white band and brownish on distal (Nov 7 03). Molars all filled in with brown and dense ivory on 7 and fewer 2, 4, 10.

Shed Jaw of hd 2.3 x = 2.3 but a rather dark-tinted specimen. Chorion short. Put in out.

647

Fine frontal L. 3 June 7. 1897. Hd bottom brown dotted with white, a black patch each side clipped with a brown shade up behind and running on angle up into widening above to support an elliptical pale enclosure in which is 2.3 mm. Body mouse brown, a little greenish limited, a series of large red-brown white spots 2-14 on three covering rails of c-pl, outer in - iii t, on abd. i-iii (usually trilobate) and white of small spots. Intervals and spreader white, outer nearest, single chalcoid bit fine, pale. Chorion not separated and all present.

Same as 645?

Yes!

Papilio n. sp. resembling 638 a white oak Bazelpat I. 2. on young leaves. Hd white, carmine spotted with dark brown.

w. 1.2 mm 8th segment marked the large spot on the sides; a round carmine 5th black spot on 3 and 4 and 13. Body chocolate brown and white. Dorsum white with geminate fine brown d. line and black i and ii. A very broad brown lateral band reaching to iii centered by a series of white dashes, divided in two; iv + v black, no marks below the region white with feet.

Tubercles all black, setae not very fine white.

with preceding but on examining cast the carina, slender, with slightly tube-like as the young leaves. Head large smooth shaved see shining black. Jaw the first black. Body brown, white but different. a double brown lateral line the babes well represented (5th below ii and surprisingly, iii) but connected by very oblique bands, the 5th pair also connected over dorsum by a broad triangular band in the center of each seg. which encircles tubercles i and ii. Feet white. Anal plate nearly black. Tubercles very small, dusky, setae pale. Joints 5 centrally chocolate from the anal edge of 4 white and on 13 tends to be prolonged into a d. line.

650

Like 649, same but 3 white ant. instead of all brown, 4 also white ant. Three straight brown line on each side and dorsal (above i) medial (below ii) anteriorly (below iii), see the next wheat. Thorax (eat, head) and legs dark black. W 1.1 ± Tubercles small, black, setae white.

Dent July 7 1897 Cat. no 12827

651 = 534 = 25

Egg back leaf white ole Received 29 June 1897 $\frac{2}{3}$ of basal two feet, slightly shiny white, not fuzzy of egg and not very pearly. Pets hex of medium of distinct regular, all in one dark on the light side. D. 1.2 H. 7. Like 646 but white. Hatched June 13 and gone, broke like Imodata. Setae pale, no tubercles, nor anything else dark. Head is thorax more lateral than Indy large, higher than 2.

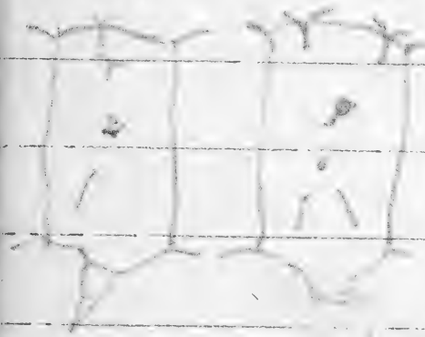
Shed June 18 Hd 1.4 (Sh wd 1.) Green with yellow sd line. See 534

Shed June 23 Hd 2.2 (Sh wd 1.4)

[Just Imodata. But it not]

652

Skiffe on hickory in folded leaves



Brentadenia L.I. Jun 12 1897. Egg ○ with 16 flat large ribs and fine transverse cross strias regularly spaced ≡. D.8 laid on offe side shell white. Larva Hd. 4 orange, sharpness rounded, slightly bilobed, the simple coarse white setae with enlarged tip. Cph small faint orange. Body greenish yellow a little orange tinted, page 5-annulate, skin punctured, setae white, spindle tipped i and ii forcate. Joint 2 and spiracle (Do not see vii on drawing or text)

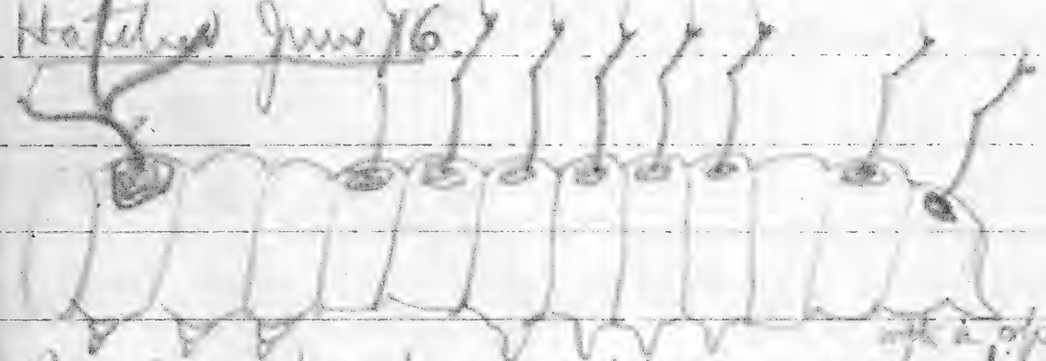
Shed fewell Hd. conicle bifid large blade, rough made smooth, body all order yellow. Most like body with numerous short 2d setae with bifurcate tip, white. Hd. 6 Prolegs fine of anterior, not thing, no mentos, neither shield nor plate differentiated. (drawing)

See Packard 282

653 = 110 = 64

Horn? egg in Lindsay Amphibian L.2. June 12 1897. Of floral regular, large, semi-opaque pale green, dull, not shining. D. 1.4, H. 7 mm Pet. smooth regular hexagonal the pit rounded above below, giving a shine in one side as well as Nicolson in light side; edges not sharp, frosted rather than reticulate

Hatched June 16.



Regular "horns" not, 3 three on each horn, there i 5-11, 12, 13 of equal length.
Horn i plate brown. Body yellow, and streaks on the sides and around i 5-7, 12. Anal feet divergent long. Hd light brown.
Larva retained yellow dorsally in the pleura and the side front pale frosted streaked in red lines. Shed June 20 = 110 (June 28) Shed June 13 Hd 2.2 ± (Shed 1.2) Horns & pouch ½ (Shed ok)

with a dorsal tube

Nelk

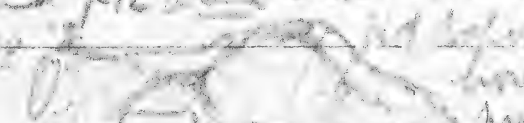
Sent Lang 3 1897 Cipsey & Helen and a nymphale

654

Very large Protoctetrias? egg in March sale (Q. tinctoria) Beckport June 12 1897. Slightly less than transversely oval, base flat, 1.4, H. 6 green around the base, the whole top covered by a very large, irregular edged white frosted patch. Pet. broad shaly flattened and shining, hexagonal rather sharply angled and somewhat irregular. Cell green not shining. The pigment is in the egg, not laid in outside. Very pigment broken up by pale patch. Hatched June 16 7 "horns" with 4 tined center and all the 11, 12, 13 of equal length, long and large as Trimaculata (653). Hd. 5 pale brown tubes. Body predominately pale green, slightly yellowish (a very yellow cast in a strong pouch) a dorsal brown band in 5; a band over 7 containing a lot of pale of green color, a faint lat. and ring on 7 and a band in 10 and 11 & the rest in 5. The feet black, legs and anal pl. dark brown. Horns in 2 row, the

[illegible] separates from narrow white line to [illegible] [illegible]
[illegible] [illegible] [illegible] above w. 3.5 ± C. [illegible] high [illegible]
thick, smooth, rounded shiny black, brown at base. Body
[illegible] greenish, [illegible] [illegible], [illegible] brown d. 7-9, the
tuns black, the highest one [illegible] [illegible]
on its upper side. Body brown with [illegible]
black, [illegible] pale → [illegible] on no plate except
on 12 and when there are no horns. → [illegible]
[illegible]
11 absent, [illegible] on leg plate. Anal [illegible] [illegible],
[illegible] the [illegible] [illegible] 11 [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible], d and [illegible],
[illegible] [illegible] [illegible] the edge.

Stage June 21 [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], brown
[illegible] [illegible] and [illegible] before [illegible] [illegible] [illegible]
squarish, not notched [illegible] [illegible]. Body yellow & [illegible]
brown [illegible] [illegible] yellow line [illegible] [illegible] [illegible]
5-11, 13, forming a ▽ mark on 11, absent 12. [illegible] yellow 5 [illegible]
[illegible] on 3-4, [illegible] [illegible] 8-13; [illegible] [illegible] and
[illegible] [illegible] [illegible] [illegible] on sides 5, 7, 10. Leg plate black
[illegible]. [illegible] [illegible] C-[illegible] [illegible] [illegible] pale [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].
[illegible] 8-9, 12 [illegible] [illegible] [illegible] and a pale ⇔ patch
[illegible] [illegible] 5-7 [illegible] [illegible] 9-11 — Stage June 26 [illegible] [illegible]
[illegible], not [illegible] [illegible] yellowish white [illegible] with brown
[illegible], a [illegible] [illegible] [illegible] [illegible] from base [illegible]
[illegible] of each lobe [illegible] brown [illegible] [illegible] [illegible] [illegible]
and [illegible] [illegible] [illegible] on top reaching above top of brown colored as before. Body
chocolate brown & pale yellow, very mottled. [illegible] d. [illegible] 2-13, [illegible]
[illegible] pale patch [illegible] 7 a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] 7; [illegible] [illegible] [illegible] to 11 [illegible] [illegible] [illegible], a [illegible]
[illegible] in 10, a patch 11-13, [illegible] 12. Pale [illegible] [illegible] [illegible]
[illegible] pale [illegible] mottled with lighter brown [illegible] [illegible] [illegible]
[illegible] the [illegible] breaking the pale color into [illegible] [illegible].
[illegible] [illegible] [illegible] 12 [illegible] [illegible]. [illegible] [illegible] between [illegible]
d. 4-7 and 7-12 [illegible] brick red [illegible], side sordid greenish yellow,
[illegible] [illegible] [illegible] 2, [illegible] 7-10 high [illegible]



[illegible] [illegible] [illegible] Hd 3.8 [illegible]
[illegible] [illegible], [illegible] [illegible] [illegible]
[illegible], [illegible] [illegible] [illegible] [illegible]. [illegible] brown [illegible] [illegible] [illegible], [illegible]
4, 7, [illegible] 10 and d. [illegible] [illegible] patch 2 [illegible] [illegible] 9-11
[illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] on side 9 12
Stage [illegible] — Hd [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] with [illegible] dots [illegible]
[illegible] 3 [illegible] 4 [illegible] 6-5 [illegible] 7 [illegible] [illegible]
[illegible] [illegible] [illegible] 7-8, 7-9, 8-10, 7-11 and [illegible] 9-12
[illegible] [illegible] [illegible] patch. Between [illegible] [illegible] [illegible]
patch, [illegible] [illegible] [illegible] of band [illegible] [illegible] [illegible]
[illegible] of patch 5-7 with 5 central [illegible] [illegible]
[illegible] 6 5 5

Apatela egg on Q. [illegible] Belfast VI 13
Flattened segment of sphere D 1 mm, H. .3 mm
Circular, ribbed 45 ± free, not [illegible]
in number till 1/3 from apex when the
alternate ones end free, these forming
M, bounding [illegible], ending in a circular
ridge around the micropyle M [illegible]
highest in the center. Ridges [illegible] the
[illegible] between [illegible] [illegible], no striae.

[illegible] I June 16 Whitish, [illegible], a [illegible] [illegible]
[illegible]
[illegible] 1 of 4 on 2, 4.5, 8-9 and [illegible] on 12
Hd pale [illegible] a [illegible] [illegible] on each. [illegible]
[illegible] [illegible], w. .5 mm. Tubercles large [illegible] dark
[illegible]
[illegible] [illegible] the [illegible], normal, single.
[illegible] 1-12 black & white [illegible] [illegible]
[illegible] on pale leg plate. [illegible] [illegible] [illegible], [illegible]
[illegible] black [illegible] [illegible], pale as [illegible] [illegible]:

II June 18 Hd whitish, a brown [illegible] [illegible] [illegible]
with [illegible] of each lobe. W. 4 Body white [illegible]
[illegible] purple brown 2, 4-5, 8-9, 12, [illegible]

Another crossing [illegible] 9-12 with [illegible] [illegible] [illegible]
[illegible] of [illegible] tipped [illegible], divaricating into a [illegible]
[illegible] dorsal 12-anal plate. Anal [illegible]

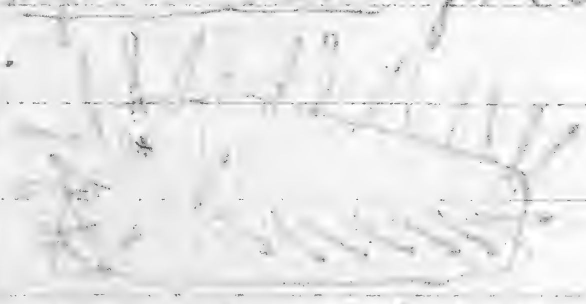
2 double, wart [illegible] with a crown of glandular
tipped hairs and central long setae, 2 setae on i
i-iii black. 2d hairs black in spot white in white
ground. Hairs of i pale not glandular. Late [illegible]
[illegible] confined behind [illegible] [illegible] of lobes [illegible]
white. [illegible] white of [illegible] on the [illegible]
Stage III June 25 Hd .8 white & [illegible] spots in front
[illegible] [illegible] [illegible] gray of [illegible] [illegible] of patches on
2, 4-5, 5-7, 12 [illegible] of [illegible] 5d [illegible] enclosed)
white spots [illegible] in [illegible]. [illegible] [illegible].
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
Stage IV June 29 Hd 1.5 [illegible] [illegible], [illegible] [illegible] [illegible]
[illegible] & large black spots in front [illegible] [illegible]
on sides [illegible], dorsum [illegible] iii all [illegible]
[illegible] [illegible], [illegible] 2, 4-5, 8-9, 12, the other [illegible]
yellow in [illegible] of [illegible]. Hair black & white
[illegible] [illegible] [illegible] [illegible] [illegible] and [illegible] glandular
tipped [illegible] [illegible] with the [illegible]. [illegible]
[illegible] [illegible] [illegible], [illegible] [illegible] 4, 2d [illegible] yellow
patches [illegible] on 3, 5, 7 10, 11, 13.
Stage V [illegible] Hd 2.2 [illegible] with [illegible] mottled [illegible]
hardly [illegible] [illegible] 4 [illegible] spots which [illegible]
[illegible] [illegible] light [illegible]. Body gray [illegible]
[illegible] the [illegible]. [illegible] [illegible]
but [illegible] [illegible] [illegible]. Yellowish white
[illegible] 5d [illegible]. [illegible] [illegible] [illegible], abundant
with the white [illegible]; the [illegible] [illegible] with a few
sparse black spinules. White [illegible] [illegible]
[illegible], [illegible] [cf Lobelias]
Stage VI [illegible] Hd 3.5 [illegible] [illegible] [illegible] 5 & 12 d.
Stage VII [illegible] 12 Hd 5.5 Same (Stage VI Hd 4.2)
[illegible] [illegible] [illegible] Lobelias [illegible] 16
([illegible] [illegible] [illegible])

[illegible] [illegible] 23
[illegible] 656 (eggs) 108
[illegible] 656 A 136
[illegible] 656 B 78

Range June 10-18
67% out

656 = 256 = 121 = 12 A

[illegible] geminata (geminata) out from cocoon
June 10 1897. Night 10-11, 11-12 mating [illegible] &
eggs at 9:30 PM. Night 12-13 laid [illegible] eggs.
2 [illegible] in [illegible], no [illegible]. Eggs [illegible] 13-14.
[illegible] did not [illegible] till after [illegible].
Egg. Rather narrowly elliptical [illegible] [illegible]
round, translucent whitish in places, strongly
[illegible] like a [illegible] [illegible] [illegible] (see fig. 1, 3 & 7)
[illegible] [illegible]. [illegible] rather [illegible] all over egg [illegible]
[illegible] [illegible] like [illegible] [illegible]
[illegible] [illegible] a [illegible] in eggs [illegible].
[illegible] [illegible] [illegible] translucent [illegible] [illegible]
[illegible] by a transparent narrow zone
[illegible] [illegible] [illegible] [illegible] the Euf. [illegible] 626
Stage I hatch June 26 about [illegible]. [illegible],
(Hd [illegible] egg [illegible] [illegible] [illegible])



[illegible] [illegible] [illegible]. Spines
all [illegible] [illegible] [illegible]
[illegible], Translucent
whitish. Spines transparent
short clubbed tipped (1) 4, 7 [illegible] [illegible] [illegible]
[illegible] (2) [illegible]. 2 [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] setae. Spine-

656A crawling out June 13. Mated night 13-14 with ♂ from cocoon. Laid eggs night 14-15 but only few until 25. None 15-16. First hatched June 27. Same

656B crawled ♀ out June 17. Mated night 17-18 with ♂ from cocoon. 78 eggs night 18-19. Hatched

all alike [illegible] green and sides [illegible] green, the segments ridged. Skin smooth [illegible] paired dorsal [illegible] light near the centre of d. groove. [illegible] white [illegible] [illegible] faced [illegible] (The spines [illegible] [illegible] nearly straight line.

St II July 2-3 [illegible] [illegible] Skin rather densely [illegible] and clear [illegible] quite contiguous [illegible] 2d spine. Dorsal [illegible] [illegible]

St III July 8 [illegible] elliptical [illegible] [illegible] sharp pointed. [illegible]

Date	L	R
Jun 26	.9	molt
" 27	1.0	cat
" 28	1.1	"
" 29	1.3	"
" 30	"	"
Jul 1	1.7	[illegible]
" 2	1.8	"
" 3	1.7	Shed
4	1.9	cat
" 5	2.2	"
" 6	[illegible]	"
" 7	2.3	Shed
" 8	2.3	Shed
" 9	2.0	cat
" 10	"	"
" 11	3.5	"
" 12	3.5	Shed
" 13	"	"
" 14	[illegible]	[illegible]
" 14	4.6	cat
" 16	4.4	"
" 17	5.2	"
" 18	5.3	Shed
" 18	"	"
" 19	"	"
" 20	"	"
" 21	5.5	cat
" 22	6.7	"
" 23	[illegible]	"
" 24	7.5	"
" 25	7.6	Shed
" 27		
" 28	8.0	Shed
" 29	8.2	cat
" 30		
" 31	10.6	"
	11.2	"
	11.3	"

656A			656B	
Date	L	R	L	R
Jun 28	.95	cat		
" 29	1.2	"		
" 30	"	"		
July 1	1.5	"	?	molt
" 2	1.4	[illegible]		cat
" 3	1.9	"		
" 4	1.6	cat		
" 5	1.5	Shed		
" 6	"	"		
" 7	1.8	cat		
" 8	1.8	"		
" 9	2.3	"		
" 10	[illegible]	Shed		
" 11	2.1	"		
" 12	2.5	cat		
" 13	2.1	"		
" 14	2.1	Shed		
" 15	"	"		
" 16	3.0	"		
" 17	3.5	cat		
" 18	4.2	"		
" 19	4.8	"		
" 20	4.6	Shed		
" 21	"	"		
" 22	6.3	cat		
" 23	5.5	"		
" 24	6.3	"		
" 25	6.6	"		
" 26	6.4	Shed		
" 27	"	"		
" 28				
" 29	7.0	cat		
" 30		"		
" 31	7.9	"		
Aug 1	8.3	"		
" 2	7.5	"		
" 3	8.5	Shed		
" 4	"	"		
" 5	"	"		
" 6	9.6	cat		
" 7	10.1	"		
" 8	11.5	"		
" 9	11.9	"		
" 10	12.5	"		
" 11	11.8	"		
" 12	11.0	"		
[illegible]				

translucent whitish green, a faint white line inside [illegible] ridge not reaching the extremities. Skin covered with minute [illegible] [illegible] granules, no spines anywhere on the tubercles. [illegible] spaces small, shallow not sharp edged, smooth in bottom.

St IV [illegible] [illegible] green, a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] spaces very [illegible] [illegible] [illegible] [illegible] notched [illegible] yellowish and white irregular [illegible] [illegible] [illegible] [illegible] Shed [illegible] [illegible] [illegible] [illegible] rather [illegible] [illegible] the ridges [illegible]

6 [illegible] 3-13 mid dark edge, 11 dots
white 4-11; 10 white ringed centr. Skin green
4 less [illegible] centripunct [illegible] the dots there
6 Stage VI July 18 instar shape just [illegible] hairs
[illegible] rather small and showing [illegible]
6 [illegible], not quite uniform. White [illegible],
7 [illegible] [illegible], [illegible] as white dots
[Stage A third July 19 different. Ridge rather
markedly tubercular and [illegible] dark
dark color. Shape about the same, but
much less [illegible], not (black) white
[illegible] Dots appear as white dots, 11
[illegible] centers. [illegible] white 3-
[illegible] without [illegible] [illegible]. Skin granules
[illegible], [illegible] about the same.]
Aug 1 [illegible]
2 [illegible] Aug 5 [illegible] lived to [illegible].
Stage [illegible] Aug 5. [illegible] [illegible]
[illegible] ground at first no color. Aug 11 [illegible]
[illegible] [illegible], [illegible] [illegible]. [illegible]

July 26
1897

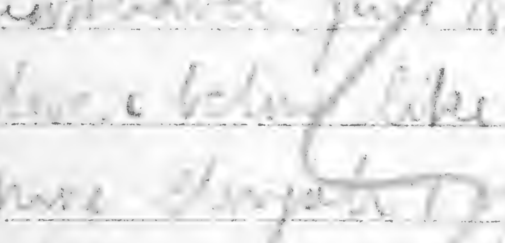
657 = 374

On Arctia in the white sand in [illegible]
woods Brookhaven June 18. Body uniform
dull gray, waist and plates black. Hair
stiff, black, short and uniform except
from ii thorax, iii abd seg and 13 where it
is long forming curious ridge of hair
the whole length on the middle of each
side. Hd black above, △ & sutures [illegible], w
1.6 ± Shed June 28 Hd 1.8 (Sh hd 1.6+) Same.
Pupa July 23 1897 Arctia [illegible]
[illegible] [illegible] [illegible] July 25-6.

.27 .38 .55 .78 1.12 1.6

658

Eggs laid by ♀ Pyromorpha dimidiata from [illegible] July 18, 1897. Elliptical, flattened above & below, like flattened eggs with more elongate cylindrical than those. White, [illegible] 1 mm, height & width .6 [illegible] Hatched [illegible] [illegible] gray white. [illegible] W.S. [illegible] tw. [illegible] colorless. [illegible] July 13 [illegible] gray. [illegible]



659 = 655

Apatela eggs on Q. coccinea, Q. tinctoria (?) [illegible] June 19. Low rounded, [illegible] flat, [illegible] .45 [illegible] D. 1, h. .3 mm (Like 655) translucent white.

Hatched June 21 Like 655 q.v.

Shed June 25 Hd .5 Like 655. [illegible]

Shed June 29 Hd .9 Like 655 III

658 [illegible] Shed [illegible] 30. [illegible] color [illegible] dark brown [illegible] (½ in. [illegible]) [illegible] brown [illegible]

660 = 655

Apatela egg on Quercus [illegible] June 19 '97 Low circle △ flat at base, .45 z. ribbed in rather general, wavy, no cross striae to an irregular micropylar ring. Ribs obviously in two series, more confluent. D. 1.0 H. .4 [illegible] [illegible] white. Hatched June 21 Like 655, with the dark marks faintly, mostly confined to the large warts. Joints 1-3 black, rest pale. Shed June 25 Hd .5, form black after. Also like 655 II q.v. [Another from egg like 659. Hatched June 25 nearly white, the dark marks just indicated as faint shades, the white warts distinct.]

Shed June 29 Hd .8 mm Like 655 III and IV

([illegible])

[illegible] as [illegible] brown [illegible] [illegible] abundant, [illegible], a little longer [illegible] at each. [illegible] at [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] the [illegible] [illegible] straight. Aug 20 [illegible] [illegible] [illegible] [illegible] dusky brown with [illegible] [illegible]. Warts [illegible]

661 = 655

Apatela egg on Quercus June 19, rounded, outer [illegible] low, flat at base, brown-white + 60 ribbed, and confluent distinctly, the ridges beaded fairly rather than wavy, no cross striae. Micropylar area irregularly ringed. D 1 H .3

Hatched June 21 Like 655 q.v.

Shed June 25 Like 655 II. 2 extra form i Hd .53

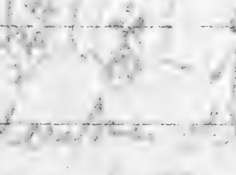
Shed June 30 Hd .8 Like 655.

([illegible])

in large pale gray [illegible] which [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. Pale [illegible] [illegible] dark, [illegible] [illegible] [illegible]. 2 [illegible] [illegible], [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] Hd [illegible]

Aug 25 L 8.5 W 3.5 H 2.2

To shed Aug 20 [illegible] [illegible] dark [illegible] [illegible] closely color of dead rotten leaves.



[illegible] large but [illegible] very short [illegible] all [illegible] brown [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ① and ②. Hd 1.5 ? ([illegible] [illegible] [illegible] [illegible] [illegible] for [illegible]) 2 [illegible] black on top. Skin [illegible] [illegible] [illegible] [illegible], [illegible], a [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Fine fern

662

Apetala of a wild clary, Jamaica, has
rounded (trans. obliq.) D 1, 1, 1, 25, outer
concave & v. ridged, subcuneiform dorsally,
convex, narrow, pitted, at wing-tip
which is retinulate, red, without veins.
Abdl. fuscous without colour for green, 1st
segment 3 mm. Sclerites, black to and white
angle i-v and by plate, pl. bar.

Shed fuscous Whitish, not green, 1-d 5 hairs long
conic obl. setae also large & curved, smaller
sipped bristle shading off in apical 2d. Central
seta i black, all else white.

Shed fuscous HH Only brown & black, yellow with
like green in 3d, which bare, joined in bottom
before i and large tolerated 5-12 hairs pale, for
and general hair clouded or tipped.
Shed fuscous HH 2.2 See bristle shows nodding, a red
eye clearly to protect eyes, yellow and black
fetal in wide brown in each for 3-12, the rest for
to eyes reaching 8. Brown for brown, but pale
5-v, 2d two pairs hairs stiff with dark long spines
spinules but very hairs 2d hair dorsally. Right
Shed fuscous Black with red dorsal line
of dashes 4-11 edge of velocity black. HH,
black 3.6 mm. Wart i black, rest pale with
gray hairs. Abn. dent distinct long 2d hair
from tubercle.

663 = 646

Nodule off on ♀ coccina like 646 but
shiny and with larger reticulations. Diam
1.2, 4..6 mm. Pattern, rounded ⬭ dotted
smaller at base. Not bumpered, shiny
pale green, translucent and lesser rather
like a drop of water but opaquish. Ret
large, distinct, narrow, irregular, dark
in the brightest side light (½ in Ob.) while
the dark cell areas are shining.

Matched Jumbo like 646, but hairs i m 5
widely divergent, the cell crest as in 646
4 branches cutter a 2, 5-10 i from unpaired
plate, the bare shade pale; 12 from paired
plate long, 13 short. Roof convex red,
a bit lighter 11 A, Hd bright, rounded
brown, lower a △, no. 5 same.

Shed (after pupa) HH 11 brown with darker brown
vertical band. Roof brown d. and i. Wide
stripes 4, 7, 10 a narrow white d. bi.
and yellow Sd one broken at 11. Pores

[illegible] the [illegible] [illegible] of [illegible]
[illegible] fed up. = [illegible] 646.
(Note 646 [illegible] [illegible] [illegible] [illegible] I also)
[illegible] (?)

---

648 [illegible] Aug 28 VI [illegible] 15, [illegible] 18 mm [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] patch over [illegible] [illegible] [illegible] almost [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible]. [illegible] [illegible] [illegible] [illegible] as before. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] which [illegible] [illegible] ①-③, ①-④ [illegible] [illegible] [illegible] ②-③ are [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] as the [illegible] [illegible] [illegible] [illegible] ⑤ [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] like a [illegible] 13 × 6 mm. [illegible] between the leaves in [illegible] [illegible]

Cale 23 .41 .58 .53 1.19 1.7 [illegible]
(Probably same as 747 q.v.)

664

Very [illegible] eggs on [illegible] of [illegible] leaves, June 21 1897. [illegible], shining, translucent pale yellowish, [illegible] [illegible] on the green leaf showing [illegible] color, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] rather coarsely reticulate, [illegible] [illegible] dark on the bright [illegible], the cells [illegible] showing D. 6, L. 4 mm. Singly on back of leaf. Also on chestnut Port Jefferson L. I., [illegible] [illegible] N. J. Hatches [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] 12, 13, [illegible] [illegible] [illegible] [illegible] [illegible] 7, 8. [illegible] [illegible] [illegible], [illegible] black [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] by transparency. [illegible] [illegible] black [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] into [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the [illegible] leaves of oak [illegible] [illegible] [illegible] together. ([illegible])

IV
[illegible] [illegible] 5 [illegible], [illegible] [illegible]

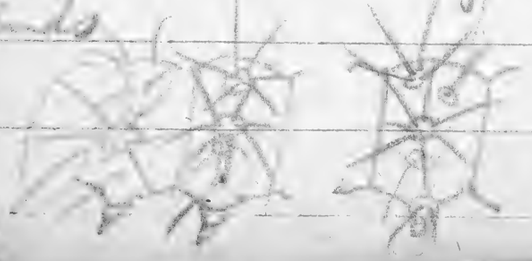
brownish with trace of brown dotting.
Body [illegible] dead leaf brown, a dark ground with reddish brown mottlings. Dark narrow dorsal line, irregular wavy subdorsal and lateral line. Subventral [illegible] dot and mottling. 3-4 [illegible] without defined line. Tubercles small, black, [illegible] very short pale, [illegible] i-vi [illegible] normal [illegible] ; vi [illegible] a few [illegible] are [illegible]. Feet [illegible] normal, [illegible] slightly enlarged. Length 6½ mm. [illegible]
July 21 Hd 1.0 [illegible] reticulate. Smooth [illegible] with [illegible] [illegible]
Aug. 27 Hd 1.7 Old leaf brown [illegible] reticulate with dark [illegible] [illegible] Tubercles small, black [illegible] vi & vii [illegible].
[illegible] Hd 1.0 ([illegible] Hd 1.4) [illegible] Hd 2.1

[illegible] hd 1.1 ([illegible] hd 1.1) [illegible] 1.8
Calc. .57 .82 1.17 1.67 2.35 3.4 ratio 7/10
Cat. no. [illegible]
665 Ont. Apr 20 1898
[illegible] on white oak I [illegible] II 21
All whitish translucent, [illegible] white [illegible]
2 [illegible], single, pointed, no [illegible]
[illegible]. First [illegible] tubercle large, [illegible]. No marks. [illegible] from [illegible] granules ½ [illegible] obj. Hd. [illegible], slightly [illegible].
Stad June 24 white [illegible] tubercle white, high, with central seta [illegible] but equally [illegible]. i & v single, not high, vi of four small setae, not high. [illegible]
June 28 Hd .7 ~~white~~ body faintly greenish [illegible] slender long [illegible] with cone [illegible], with central seta and small crown, all white i-iii, iv [illegible], v single hairs, vi with several long hairs. [illegible] (c of 665)
July 3 Hd 1.4 [illegible] tubercles [illegible] yellow [illegible] [illegible] July 7 Hd 2.5 [illegible] July 12 Hd 3.6 [illegible]

666 = 119

Eggs on Q. tinctoria leaves, fern-like and with flat base with distinct vertical ridges, diminishing above and ending by long, flattened tip average of 8 mm mean microtyle, number 287. Calculative dictum, radiate appearance, a line at centre of each rib and one on each groove not slightly wavy, the ones at tips all equally distinct. Pet number at microtyle. Pale white green, a black tint at rostrum and narrow concentric ring by dissimulation or hatchen. D.g h 48 mm.

Adult June 23 Fastened in leaves together with a few silken cords. Hatched the egg standing, hd rounded, white. 5 mm. Red, white, yellow from fore, ch infolded and = sense of and 5th patching (II) 3-7 distinct, centre clear behind 7. Hair long, white, exp long at the ends.



Many hairs present, hair that white, spurious.

Jul 2 more eggs also on Q. tinctoria, same as 5 all pale white green. Note the many and clear appearance in final appearance red.

Hatching more rapidly with interval, is absent and violent. Stick of timber exp d.

Shed June 26 Hd 8, all pale white. Body whitish, first dark, against which a white d. 5d bar in dotted. Five dark red spot as before. Wants food, large, rounded up and 2 stripe in Cryptic-like, 1st many horned. Vi present. No iv? Hair black, white. Yale shot Painter. Time a tiger gone

Shed July 5 Hd 1, 4 Red spots fine, broad with black margin = 119 (Lin. red)

Red spots indeed 3 in 5 & 6.

Range June 23 – July 2
50 % out.

667 = 252

Rickardia ? species (species) 29 out June 23
197. Nested night 21-24, eggs 24-25.
Elliptical shell [illegible] solitary
[illegible] brownish. Retractor [illegible]
[illegible] gonad [illegible], [illegible],
[illegible] bright light (½ and 1½) with green
[illegible] behind they appear as [illegible]
[illegible] of a height area in both [illegible],
the first cell [illegible] dendritic, [illegible]
[illegible] July 5–6 [illegible] Rigmarole
[illegible] on 3 2-2-1 4 1-1-1, 5-12 1-1, 13 2 all
[illegible], irregular [illegible] trifid. Branches [illegible]
[illegible] very short, [illegible] distinguishable as [illegible]
[illegible]. Elliptical, [illegible], [illegible]
[illegible] curved, [illegible] Ridge
[illegible], [illegible], [illegible], [illegible],
[illegible], [illegible] transparent, [illegible]
[illegible] conspicuous

Sh. II July 4 Clean [illegible], [illegible]
[illegible] tinted with yellow, [illegible]

667 A 9 out June 27 [illegible] 27-28 [illegible] Fig. 5 [illegible]
day [2 ♀ [illegible] days [illegible] not mature but [illegible]
[illegible] 28-29. [illegible]

667 Sm. Pile

	L	R	
6	.9	24	667 A
7	2.0	"	
8	1.3	"	L R
9	1.4	"	.8 [illegible]
10	1.4	[illegible]	1.0 [illegible]
11	1.5	[illegible]	1.2 "
12	1.7	[illegible]	1.3 [illegible]
13	2.1	"	" "
14	2.0	[illegible]	" "
15	"	[illegible]	1.3 [illegible]
16	[illegible]	"	[illegible] "
17	2.1	[illegible]	[illegible]
18	1.6	[illegible]	[illegible]

[illegible]

distinct cervic appearance on left ridge. All
of skin surface and tentacles coming down
brits in all low cervic clear granule all
uniformly over the stretch deep afferent
when they are seen through. Granule very
numerous, almost octagonal, but small, not
afferent. Very fine clear granular appearance
D. Force brand, and numerous small, but indistinct
very colorless, translucent blood sac seen
in end no pigment. Numerous ✓
[Exit] Thread out, delay [illegible] 2, 3, 5 at
lower, elongate, branch before, small
[illegible] [illegible] in the
[illegible] tubes which [illegible] the granule,
and in depth afferent, almost entirely
without pigment, and visible particularly.
afferent green tinted from blood, an dense
[illegible] but under the 1st ridge of [illegible]
interfere [illegible] [illegible] [illegible] stem [illegible]
branch de Tunis. Granule small, very
dense, cervic, but not quite [illegible]

very uniform, non [illegible] ✓
deep afferent [illegible] [illegible]
[illegible]
Slide Day 1 Small, round, pearl, flat.
A very short O bow, no pigment. Tail
fundus, [illegible] end. Stem short [illegible]
Slide VI Day 7 Nice very sd. bow, looking clear
[illegible] [illegible] [illegible] [illegible] [illegible] 1/2 of [illegible]
afferent, (4) [illegible] [illegible] [illegible]
Test [illegible] [illegible] [illegible] end
Slide VII Day 18 Very [illegible] [illegible] [illegible]
[illegible] many [illegible] of pigment
in d efferent, [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
Day 19 10.5 cat Day 21 Second [illegible] [illegible]
" 21 [illegible] [illegible] [illegible]

Range June 25–29
53 % out

668 : 239

Female hypothetic out June 25, with ♂ night 25-26 but ♂ was off. Nothing 26-27. Eggs 27-28. Elliptical, of egg in whitish, 1.2 x .7 cm, white a place and left rest very almost obscure, very slightly granulomeric. Hatched night July 5-6. Nestling separates, of egg white, of one white. Rough & coarse-set behind, transverse tufts, long tail in front. A. Cut open nostrils, flat, and bulbs, wide slight. Bill & tarsus except a large black spot in the head which consist of a long patch & pigment below the base of jaw and down some to notch, and overlay especially on vertex, the outline of A. Head crown from, poke around it. Setae long with enlarged bases ↑ ① 4-12 with distinct side fringe, ½ length of other hairs. Tips enlarged and left, beyond ⅔ of setae width, white, of ex tomentum, semicircle (as 3 2-1 or 4 1-2-1. ② of 5 [illegible] of 7, 9 and 11 ♀

(Nest 7-[illegible] 29)

668 A ♀ left in nest night 26-27. ♂ found in cage dead every from ♀. Hatched 27-28. Eggs night 28-29. Poor. Hatched July 5-6.

668 B ♀ in cage with ♂ night 26-27. ♂ was off. Hens night 27-28, 28-29, 29-30 (taken)

668 C ♀ in cage in nest out June 28. Two ♂♂ night 28-29 in three cage, & bite sitting apart from ♀. Eggs by both night 29-30. Hatched July 6-7, [illegible]

① leaves out. 12 have 2 st setae simple and ② to ⑤ very long straight fine hairs [illegible] and three [illegible] are long as the [illegible]. Skin smooth, slightly shining, [illegible] very shining, tentacle ① [illegible] and above period bottom 29. A white [illegible] Skin under ① and ② distinct. Shine [illegible] in proportion, not conspicuously white, not [illegible] just in [illegible].

668 Sample			668 C	
Date	L	R	L	R
June 6	.9	hatched		
" 7	1.1	out	.9	hatch
" 8	1.3	"	1.1	out
" 9	1.5	[illegible]	1.4	"
" 10	"	hatched	1.4	"
" 11	1.8	out	(out)	
" 12	2.1	"		
" 13	[illegible]			
" 14	"	to hatch		
" 15	"	"		
" 16	2.6	out		
" 17	2.8	[illegible]		
" 18	3.2	out		
" 19	3.4	"		
" 20	3.6	hatch		
" 21				

Shed July 10-11. Pale white green, a lemon patch above on 2nd leaf. Red with a white line along each edge. Scale distinct, black. Skin green & opaque covering brown & setae on the ridges. Defined space broadly indicated.

Shed July 16 a very distinct green 3d line from end to end. Green & brown spot with green center, recalling Cecropia. Very spiny setae the primary setae black. Side finds centry, ocelli green. Dorsum green, ① ridge, with fine setae. Tail appendage, spiny.

DATE	H	R	IV
July 2	3.7	cut	Eating white leaf
" 23	4.3	"	
" 24	5.1	"	Green, filling up with white
" 25	5.5	bitten	fragment of it, if a wasp ate it
" 26	"	"	
" 27	"	"	
" 28	"	"	Left leaving a clear track
" 29	6.0	cut	
" 30	6.1	"	Under to the fine yellow 3d
" 31	7.0	"	
Aug 1	7.6	"	line, which is broad, distinct
" 2	8.4	"	
" 3	8.0	bitten	
" 4	"	"	Grows denser, and quite cu-
" 5	"	"	
" 6	9.0	cut	tous, more, dense & above
" 7	9.1	"	
" 8	10.0	"	

on the more in the ridge. (1) & (4) in white dots (1) with green center.

Shed July 29 Green, opaque on ridges, setae large. White green, brown yellow and line edged dark above, many crawling on such. Tail protuberant and by tubercles. Def. spaces are white spots. Eating white leaf.

Shed Aug 1 The setae white pointed. 3d line white, distinct. Aug 13 green, high and thick.

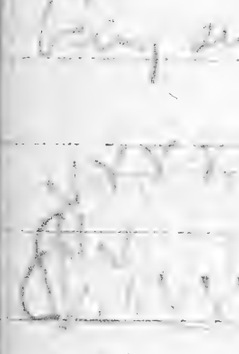
Aug 9	10.2	cut
" 10	10.4	"
" 11	"	"
" 12	11.2	"
" 13	10.4	"

Spun Aug 13

669 = 558 C

Lot code I in Sectional Berry Stock (C) July 2 1917. Egg-shell, artificial feed in moist [illegible] skin colorless white (and no nests)

Stages I & V back, differ from I palpate in V's being smaller and all in bin in rows of 10, not strongly alternating.



Rounded, elliptical, tail rounded, all colorless, skin smooth, reflexed & bent forward at neck. Setae pale, head colorless, eye black, retracted. 2 rows, all relaxed.

	L	R
1	1.4	walk to blue
2	1.4	to blue
3	1.5	out
4	1.5	"
5	1.5	"
6	1.5	"
7	1.5	to blue
8	1.5	"
9	1.5	out
10	1.5	"
11	1.4	out
12	2.2	"
13	2.3	"
14	2.4	to blue
15	"	"
16	2.1	out
17	2.2	"
18	2.2	"
19	2.3	to blue
	dead	

On joint 4 are two setae. Eye not distinct from cuticle and limits of V's a little. Hairs on joint bumps.

Stage II strongly elliptical, tail rounded & quadrate, dorsum flat & broad, notch sharply angled, smooth, regular, all colorless. Setae same, but notch smooth, not deep & not retracted.

Covered with smooth, dense, finely reticulated granules, uniform, not prominent anywhere except in last notch. Setae absent. All colorless opaque & translucent. Dorsal spaces (1-6) granular, granules on bottom of ridge. Ridge [illegible] Lateral dark brown, pale green.

Stage III 10 [illegible] elliptical, tail rounded on the dorsum slightly, so as to indicate head as a finely arched 1-13. Tail object notches [illegible] Dorsal spaces very distinct, [illegible] on top, [illegible] elongate, and dorsal edges. Lateral notches bordered on the clear appearance, in the movement from [illegible] with [illegible] Bottom of the [illegible] granules [illegible] with [illegible] Color all pale green, slightly marked by the granules. Granules [illegible] Yate a faint [illegible] Dorsal [illegible] Lateral a distinct [illegible] [illegible] Other [illegible] like 671 C III. [illegible] spots [illegible] Joint [illegible] and [illegible]

Stage IV [illegible] like 671 C II [illegible]

Stage V [illegible] [illegible] 1-8 and [illegible] [illegible] 9 and not [illegible] [illegible] (not [illegible])

[illegible] green, [illegible] and [illegible], a [illegible] [illegible]
chocolate brown [illegible] by [illegible] yellow
3-13. [illegible] 8, 9 at 1

670 = 559

[illegible] in clusters = [illegible] [illegible]
N.Y. Lee July 2 1897. 2 of these [illegible] [illegible]
vol 1.2 described (see 559)
[illegible] all [illegible], a [illegible] brown patch
[illegible] on 8, 9, [illegible] ! [illegible] 2 [illegible], the
[illegible] and clusters of short [illegible]
tipped brown [illegible] on dark segs, pale
on the rest, [illegible] several [illegible] brown.

III warts conic, [illegible], coalescing
[illegible] bilobed [illegible] lobes [illegible], a brown
[illegible] below [illegible] each [illegible]. Body green [illegible]
[illegible] [illegible] [illegible] a white sd line
[illegible] [illegible] with distinct 7-10 [illegible]
[illegible] a [illegible] [illegible] patch [illegible]. Slight trace of
[illegible] [illegible] 5 and 12. Hairs long dark [illegible]
with many [illegible] [illegible] pale [illegible]
[illegible] [illegible] of the dark [illegible] dark [illegible].
cf. [illegible] of [illegible], [illegible] 88 [illegible]
[illegible], [illegible] many [illegible] on apex and
on [illegible] [illegible] in [illegible] [illegible]. [illegible]
[illegible] [illegible] reticulation. [illegible] I [illegible]
[illegible] [illegible] patch 5, [illegible]
[illegible] on 12. [illegible] [illegible] white. [illegible]
[illegible] angle, [illegible], [illegible], [illegible] V [illegible]
II July 8 [illegible] pale [illegible] Body [illegible] color
[illegible] [illegible] [illegible]

[illegible] green, [illegible] from [illegible], a [illegible] brown patch
7-11 [illegible], 8-9, [illegible] faint trace of white sd line
in [illegible] on [illegible] on the pale segments,
[illegible] [illegible] [illegible] pale. Hairs with
long sets (2 [illegible]) and clusters of short [illegible] with
[illegible] [illegible], [illegible] with warts.
Pale [illegible] sd line more distinctly [illegible]
on [illegible] of the [illegible] dorsal band.
Molt July 14 vol 1.4 ([illegible] 1.8) = 559

Calc.	.33	.45	.76	1.16	1.75	2.66	4.	rat $\frac{66}{100}$
Found	.3	.45	.8	1.2	2±	3±	4.2	(see 559)

T. testacea 671

Coll. on chestnut, Port Jefferson L.I. July 8, 1897

671 A. In stage I a regular Y-mark like [illegible] cross, the Y's large and strongly alternating. Colors, limbs equal. Egg shell white 1 x .6 mm.

D	L	R
June 8	1.3	cast
" 9	1.3	"
" 10	1.4	"
" 11	"	½ shed
" 12	1.6	cast
[illegible]	[illegible]	"
" 14	2.2	"
" 15	"	"
[illegible]		½ shed
[illegible]		"
" 18	2.6	cast
" 19	3.2	"
" 20	3.6	
[illegible]	3.9	[illegible]
[illegible]		½ shed
" 23	"	"
" 24	3.9	cast
[illegible]	4.3	
[illegible]	4.5	"
[illegible]	[illegible]	"
" 28	5.0	[illegible]
[illegible]		"
" 30	"	"
" 31	5.2	shed
	5.5	cast
July 2	6.0	"
" 3	6.1	"
" 4	6.5	"
	6.7	"
" 6	6.5	½ shed
" 7	6.7	[illegible]
" 9	7.1	cast
" 11	6.5	"
" 12	9.5	"
" 13	"	"
[illegible]	[illegible]	

Shed July 22 [illegible] with [illegible] setae and [illegible] fine granules (6). Coloring, [illegible]. [illegible]

Shed July (1) Colorless, [illegible], [illegible] on [illegible] edge [illegible]. Tail notched [illegible] [illegible] large [illegible] patch 6-8 [illegible] [illegible] [illegible] (1) 7-8 [illegible].

[illegible]

[illegible] yellow.

[illegible] 5-10, [illegible] (6) [illegible] 7-8. [illegible]

[illegible] normal but very pale color. Spot [illegible] (6) [illegible] [illegible].

[illegible] [illegible] Aug 13 [illegible] mature

---

671 B = 558 C = 669

D	L	R
June 9	1.4	cast
" 9	1.4	moult
" 10	1.6	cast
" 11	1.8	"
" 12	1.8	½ shed
" 13	1.9	[illegible]
" 14	2.3	cast
" 15	2.7	"
" 16	2.3	shed
" 17	2.5	cast
" 18	2.4	shed
		"
" 20	2.6	cast
" 21	[illegible]	"
" 22	3.1	moult
" 23	[illegible]	[illegible]
" 24	3.4	"
" 25	3.2	½ shed
" 26	"	"
" 27	3.6	shed
" 28	3.8	cast
[illegible]	4.0	"
" 30	[illegible]	
" 31	4.6	
Aug 1	[illegible]	shed
" 3	[illegible]	shed
" 4	4.3	cast
" 5	5.5	"
" 6	6.2	"
	4.7	"
" 8	6.5	½ shed
" 9	"	"
" 12	7.3	shed

II Like 671C but more narrowly elongate, not [illegible] out. All [illegible] form pale green, no lines. Like absolutely rudimentary, just distinguishable as [illegible] black streaks. Tail rounded spread [illegible] scarcely notched. Between the [illegible], the ridges are [illegible] with [illegible] [illegible].

[illegible] like 669 III. No colors. Later yellow line on ridge (1). On

[Other III Brookhaven [illegible] one [illegible] small [illegible] the first [illegible] [illegible] all [illegible] (1) [illegible] yellow line [illegible] ridge] [illegible]

[illegible] (1) 7-8 July 17 [illegible]

Shed July 20 [illegible]

[illegible] like [illegible] [illegible]

[illegible]

[illegible]

[illegible] 8 [illegible]

[illegible]

Shed [illegible]. [illegible]

Aug [illegible] 1.5 [illegible] [illegible] [illegible] 1.0 [illegible] [illegible]

D	L	R
Aug 8	2.3	1st shed
" 9	2.4	"
" 10	"	"
" 10	2.5	molt
" 11	2.6	eat
" 12	2.7	"
" 13	3.2	"
" 14	3.2	2d shed
" 15	"	"
" 16	3.5	eat
" 17	3.7	"
" 18	4.0	still
" 19	4.2	eat
" 20	4.2	[illegible]
[illegible]	[illegible]	[illegible]
" 22	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	5.3	"
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
" 27	5.8	[illegible]
" 29	"	"
[illegible]	[illegible]	"
[illegible]	"	"
" 1	5.7	[illegible]
[illegible]	6.0	"
[illegible]	5.9	"
" 4	5.9	"
" 5	"	"
" 6	[illegible]	"
[illegible]	spun	

671 C = 558 G = 669

Ellipsoidal, rounded head & [illegible] notched in at the sides; [illegible] oblique, 5-8 [illegible] the bod[illegible] and 5-8 ridges continuous. 2d ridge changing in [illegible], everywhere [illegible] ant. part. Light green, a yellowish brown on each 2d slope. 5-9 [illegible] by a bridge centrally. Depressed spaces all [illegible] large, [illegible] the lateral ridge [illegible] appeared then granular, [illegible] in the [illegible] part. Granules very [illegible] and [illegible] on the tail. [illegible] all absent, scarcely traces.

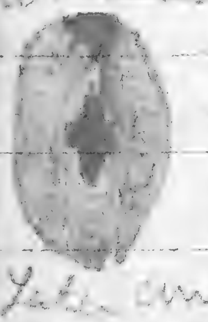
II [illegible] rather narrowly elliptical, [illegible] [illegible], 2d ridges [illegible]. [illegible] [illegible]. Depressed spaces very [illegible] large [illegible] [illegible] [illegible]. [illegible] [illegible]. Light green [illegible] [illegible] [illegible] (1). [illegible] 5-10, [illegible] [illegible] [illegible] (plate II fig. 1 [illegible]) [illegible] patch larger [illegible] space 7-8 [illegible] [illegible] line not quite reaching [illegible] [illegible] [illegible] ① [illegible] no ridge 7-8 [illegible]

III [illegible] yellow [illegible] [illegible] top of (4) on 6-9. [illegible] yellow [illegible] 6-9 in d spaces, [illegible] patch 7-8 [illegible]

and dark brown on the lateral ridge. Otherwise over dep. spaces large, rounded, sharp, [illegible]. Shape [illegible] tail rounded, [illegible] broad, oblique, concave. Lateral ridge [illegible] granules [illegible] [illegible] a circular shallow [illegible] center. [illegible], all very [illegible]. Yellow 2d line [illegible] 13 [illegible] red mark became ✠ (1.67-(1)-9 x width ① - width ① [illegible] red mark d. on 2 between the [illegible] yellow spot in upper part of dep. space (8).

VII [illegible] [illegible] (4) and [illegible] 6). [illegible] [illegible] on 6-9 [illegible] [illegible] red marks [illegible] 3. 2d line & tail [illegible] reaching center of (4). Lateral ridge [illegible] [illegible] center [illegible] [illegible] [illegible]

VIII [illegible] 30 Same, granules [illegible], ridge at least 2 [illegible] [illegible] [illegible]



[illegible] to outer edge [illegible] line. (4) [illegible] double yellow spot, (5) [illegible] [illegible] [illegible] brown on ridges, [illegible] dep. spaces. Later complete band 3-tail, [illegible] reaching [illegible] (1) 7-8 [illegible] 3 spin [illegible] without [illegible] color, [illegible] a little [illegible] green.

Excrement [illegible] ellipsoidal, [illegible] a curved end [illegible] [illegible] color brown, a little whitish, and extra dark. 7×5 mm. Sides [illegible]

Apatelan. 672

Egg at Port Jefferson L.I. July 8 1897. Zeiss 670 g.v. Holstlund Zeiss 670 Adelaide: feb but 2 front black spots on front & back bottom. Back of collar, front & neck, length of feathers 4-5, 8-9, 12, then other eyes white. Sides of neck white, black at tips, narrow. Sides of breast white, 3 black spots on each side, big green iridescent, bronze tints at ends of feathers, ending in purple. Inner feathers 4-5, 8-9, 12 2 also have marked, 3, 6, 7 & 10 white on inner web. Single stiff black feather, 2 from 1, on inner of shoulder. Ruffled. Eyes brown. Feet & legs coral, claws. Six rows feathers on above, 2 below each side of breast. Tail feathers 12 14 of white, 4 brown black feathers the ruffs, outer dorsal. Body covered brown down, all as before, some 2) basin from photo shown pg 17 Hol 1.4 Zeiss 655-III g.v.

= Adelaide just out

Calc: .36 .59 .99 1.65 2.75 4.58 7.6 $\frac{6}{10}$

673

[illegible] on [illegible], [illegible] July 18 1897.
Hd. [illegible] [illegible] [illegible] [illegible], [illegible] of
[illegible] [illegible], w. 4.5 mm. Body [illegible], [illegible]
[illegible] [illegible], [illegible] single [illegible] [illegible] [illegible],
Tubercles 1 5-14 black, the rest white.
Long [illegible] [illegible]. Hd. [illegible] [illegible]
[illegible] [illegible] [illegible] black. Tubercles [illegible].
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
Setae [illegible] [illegible], but the [illegible] [illegible] [illegible].
Stage 16 Hd. [illegible] white. Body [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible], [illegible] white &
[illegible] black [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] 1 & [illegible]
Stage 20 Hd. [illegible] white, a large black patch
[illegible] [illegible] ½ [illegible] [illegible], irregular [illegible]
small patch [illegible]. [illegible] [illegible] [illegible]
[illegible], [illegible] very abundant [illegible] [illegible]
small [illegible] white, a few black [illegible].
[illegible] [illegible] [illegible] [illegible] 5, 7 [illegible] [illegible]
a few [illegible] [illegible] [illegible] from the [illegible].

[illegible]
Late traces of [illegible] [illegible] [illegible] [illegible] black &
[illegible] [illegible] [illegible] all black [illegible]
[illegible] [illegible] white. Body greenish white, [illegible]
d. & lateral [illegible] [illegible] [illegible] [illegible]. [illegible]
Long dense [illegible] white [illegible] long [illegible]
1, 5, 7, 12, [illegible] [illegible] double & [illegible]
[illegible] white [illegible] [illegible] black [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] black
[illegible] [illegible] [illegible] [illegible] [illegible].
Head [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] black [illegible],
[illegible] [illegible] [illegible] [illegible] [illegible]. Legs
black & white [illegible] [illegible] [illegible] 12 [illegible].
[illegible] [illegible] very [illegible] [illegible] [illegible], [illegible]
obscure [illegible] white, pencils long black
dorsal 5, 7, [illegible] 12 [illegible] [illegible] [illegible].

(= [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible])

Apatelid? egg in black oak Brookline d. 2 July 15, 1897. Brice Lab. Bottom; a broad rounded rising, finely radially striate 2 mm another rising over 18 ribbed, sharply marked at its apex by a gaping cross rift, 2 of 6 mm, less rising the circumferential, crossed, gritted, the ribs starting from the cross line and alternating with the lower ones. D. 1.4, height 3 mm. Pale white, green the shell little rising white. Under the ½ inch obj. the whole egg is broadly finely radiate striated in all the lower between the cross ribs, but such as to affect any of the angles. Inverted a low broad prominence, joined with the ridges very marked but slightly sloping.

Another Ver. Black oak Beverly Hatched Jul 22 in a very long slender rapidly tapering inverted, length 5 mm, width .4 mm. Pale white, pale green, having a slender long [illegible]

side, as wide as body, 4 mm. 5% long, pale brown. About first indistinctly 7-8, distal 9, 10 13. Body first 6 complete, tarsal pieces slender, a broad red brown lateral stripe 3-divisible equal part. Antennae very large, black distal, 1-4 with single long slender setae curving forward, fine, not very distinct tarsal and very fringing [illegible] (dried)

675 = 117

IV

Apatele on Agave vasea Middle Island, 2 d[illegible]
July 2 1947. Hd 1.2 Blue, clear [illegible]
[illegible], Spanish [illegible], a brown line up
face over the [illegible] behind the [illegible] a [illegible]
[illegible]. [illegible] very. Body compressed, [illegible]
[illegible] on 8-11 [illegible]; [illegible]
[illegible] from [illegible] [illegible]: a [illegible]
[illegible] 2, 3, [illegible] April 4-5 [illegible]
[illegible] 5; divided [illegible]. [illegible]
[illegible] 7 and [illegible], 2-8 [illegible]
[illegible], [illegible] 9, 10 [illegible] joining [illegible]
11-12 which [illegible] and [illegible] 12
1-11, [illegible] 13 [illegible] and [illegible]
[illegible] 1 [illegible] 8-11. Hair [illegible]
and [illegible] [illegible]
[illegible], a [illegible] of [illegible] 2nd [illegible]
[illegible] below the [illegible] [illegible] line.
V [illegible] 20 Hd 1.5 [illegible] the brown [illegible]
[illegible] [illegible] the [illegible] and [illegible]
[illegible] of [illegible] as well as all [illegible] down the

[illegible] [illegible], as before 6 in the
[illegible] very [illegible]. [illegible] 8-9
[illegible] the [illegible] 7-12.
VI [illegible] 24 Hd 2.4 [illegible], [illegible]
[illegible], [illegible] 11, [illegible] only
[illegible] with 11, [illegible] along 11 [illegible]
8-11, [illegible] 12 [illegible] 1-11 and
[illegible], [illegible]
[illegible], [illegible] black
[illegible] 11.
VII [illegible] 24 Hd 3.5 [illegible], a dark [illegible]
[illegible]
[illegible]
[illegible] as before [illegible]
[illegible]
[illegible]. [illegible], [illegible] a second
[illegible] 1-[illegible] white [illegible] 2nd
[illegible]. 12 [illegible] and [illegible] of
body [illegible] compressed, [illegible]
[illegible], [illegible] 6. [illegible] 13 [illegible]
[illegible]. I Aug 9

hamamelis (JRS)

676

Remarkable little [illegible] spring a black [illegible] [illegible] whitish, tubercle i, ii large, a trace of a brown line along [illegible] yellowish green, tubercle with 1 white seta curving forward and a crown of short spines. A [illegible] 1, 2 on each side [illegible]. I [illegible] produced* [illegible] as long as any other, like a pair of horns. [illegible] and [illegible] 5-13 large, but no higher than wide, II conspicuously small, all the [illegible] small, [illegible]. [illegible] tubercle bear a [illegible] crown, [illegible] spinal [illegible] in [illegible]; [illegible] of II single band. [illegible] [illegible] VI, several [illegible] [illegible] have seen

(*2 [illegible] [illegible] of the [illegible] [illegible])

[illegible] [illegible] same [illegible] [illegible] tubercle as before, [illegible] [illegible] [illegible] large [illegible] [illegible] spinose crown [illegible] with [illegible] [illegible] [illegible] Hair [illegible], curving forward. II conspicuously small. [illegible] [illegible],

676A [illegible] nearly uniform [illegible] but [illegible] white spots [illegible] [illegible] darker [illegible] faint side line

Green [illegible] [illegible] [illegible] [illegible] whole body.

July 23 [illegible] Same, brown [illegible] [illegible], [illegible] crown of tubercle. [illegible] the [illegible] still longest. [illegible] [illegible] line. [illegible] at tip. Hair practically single [illegible] [illegible], [illegible] with [illegible] [illegible] [illegible] in [illegible] rings.

[illegible] [illegible] whitish, [illegible] over face [illegible] [illegible] small, [illegible] single white [illegible], but [illegible] with spiny crowns; VI [illegible] [illegible] [illegible] [illegible] [illegible] centers of whitish [illegible] [illegible] [illegible] [illegible] 12-13. [illegible] other small [illegible] [illegible] white. [illegible]

[illegible] [illegible] [illegible] single [illegible]

[illegible] [illegible] [illegible] single, [illegible]

[illegible] [illegible] pattern of 683 [illegible] different [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Clear [illegible] 1898 Cat no 15825-6

Taken on beach at
Smithbourne Lake
Aug 13.

677 = 587

[illegible] on tree black [illegible] Smithbourne [illegible] July

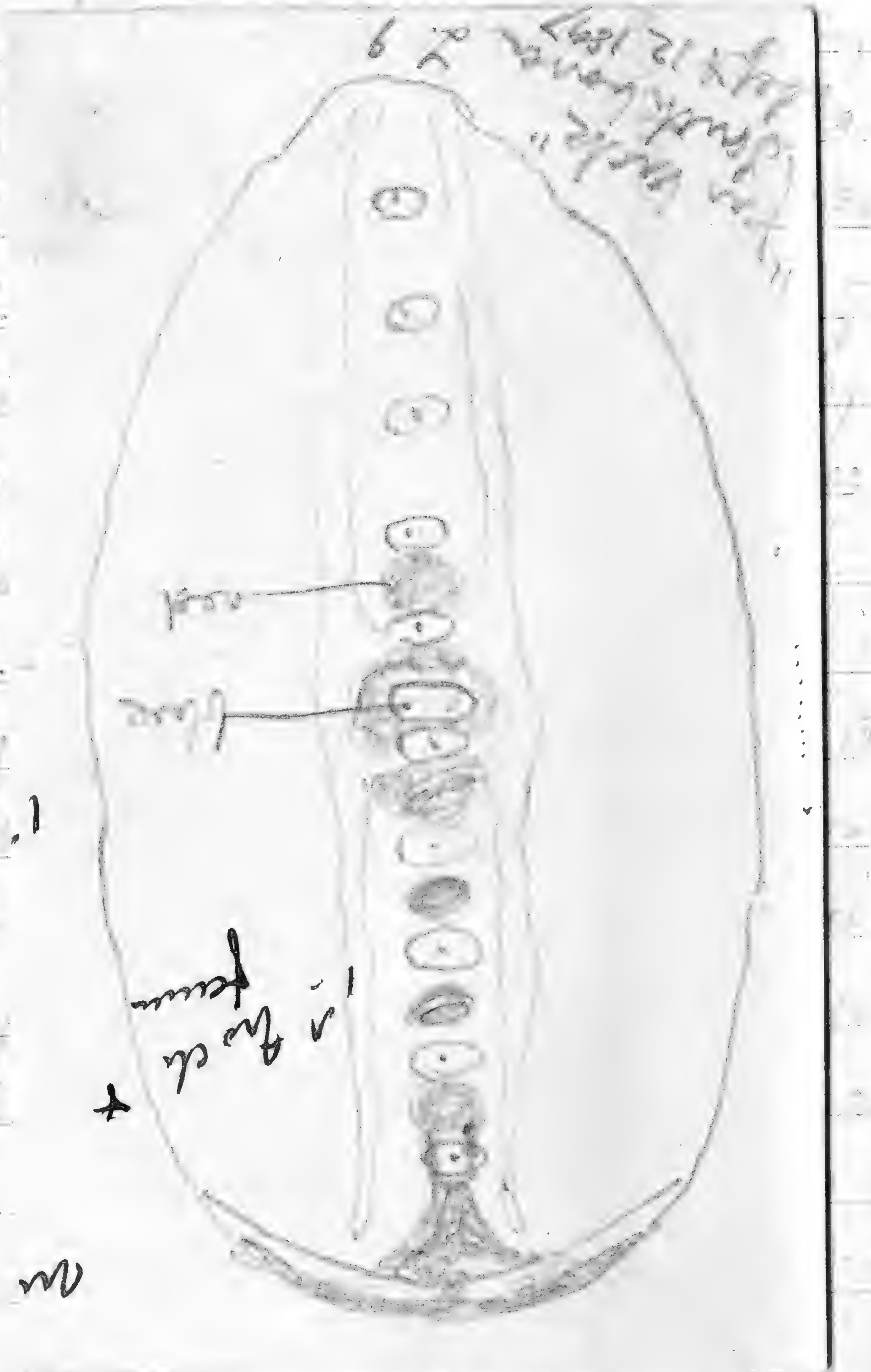
Date	Length	[illegible]
[illegible]	2.7	[illegible]
[illegible]	5.1	[illegible]
[illegible]	4.7	[illegible]
[illegible]	5.5	[illegible]
[illegible]	6.5	[illegible]
[illegible]	6.9	[illegible]

22 1897. [illegible] [illegible] gradual [illegible] in the [illegible] slightly [illegible] [illegible] prominent, [illegible] [illegible]. Both [illegible] with [illegible] distinct black [illegible] large on the [illegible] [illegible] black [illegible] large [illegible] [illegible] while [illegible] [illegible] [illegible]

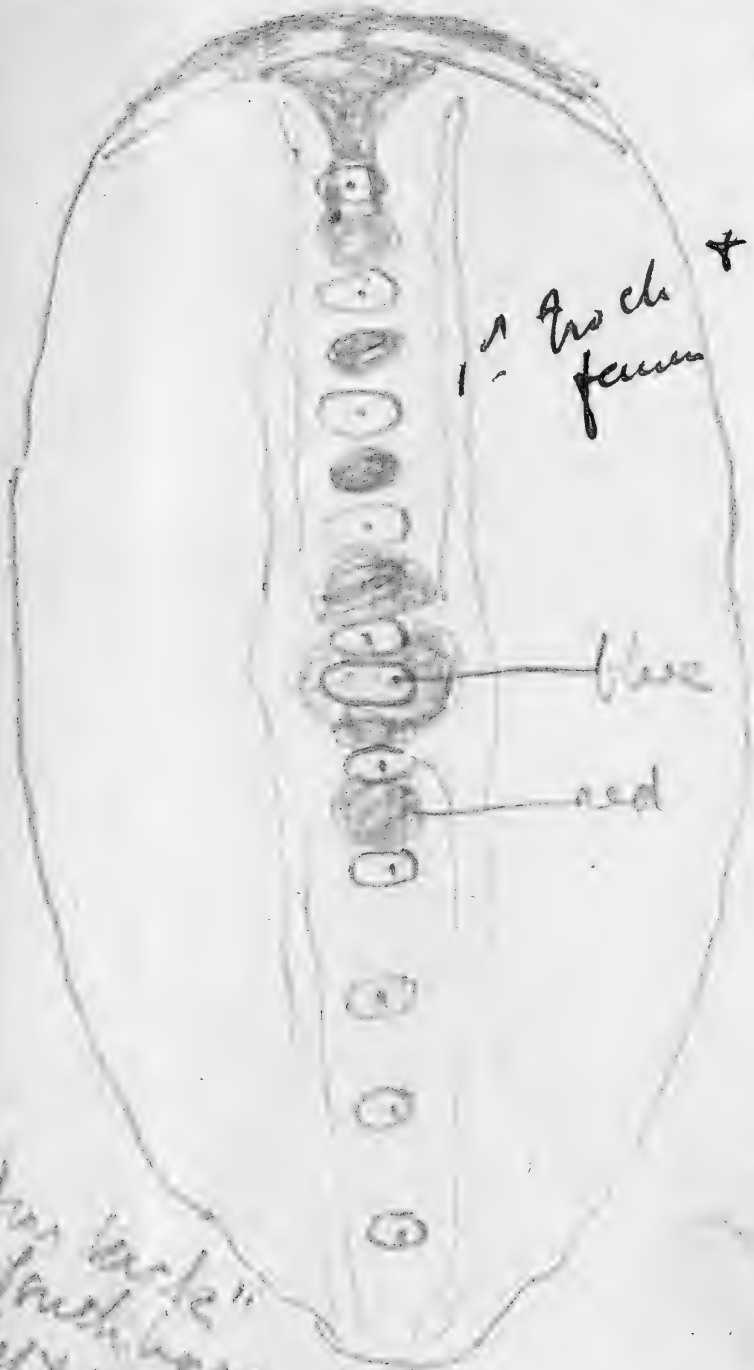
627 [illegible]

6) [illegible] as in 677 II
[illegible] 5.2, 6.5 [illegible]
[illegible].

[illegible] the [illegible] white [illegible]



[illegible] the [illegible]



"Jim Lake"
Shackleford
Sept 12 1897 L 9

Fig 3. [illegible] (prothorax) [illegible]

Fig 4. End of pupa, ventral [illegible]

Fig 5. End of pupa, dorsal view

Fig 6. End of pupa, lateral [illegible]

Fig 7. Sculpturing of pupa [illegible]

Rivers on beach at
Pendbidecwa Lake
Aug 13.

677 = [illegible]

Notes in the block of Smith's Lake, 2.3 July 22 1897. Elliptical, and much elongated, test moved gradually [illegible] notched in the order. Some slightly lateral [illegible] distinctly concave, 5 [illegible] intervals. Sol. city fragment, broad in-[illegible] regularly. Both edges with flat deltoid block, 1 notch [illegible] Often pressure large on the [illegible] bearing a corner of another block [illegible] large [illegible] lateral edge (1) and (4), the [illegible] (2) & bend, (3) and (6) [illegible] good light [illegible] large [illegible] there [illegible] off [illegible] on the [illegible] (2) [illegible]

677C [illegible] rivers on the 677 [illegible]
Often 5.3, 6.5 [illegible], broken edge [illegible] worked.

Aug. worked the single side of the block. All worked [illegible] notch [illegible] number. [illegible] edge broad, [illegible] with the [illegible] flake [illegible] 1.8 x 1.1 here. [illegible]
Often 2.8 [illegible] Increasing [illegible] single a [illegible] fragment [illegible]
Often 2.2, 2.4, 2.6 [illegible] the edge [illegible] with [illegible] 0 [illegible] 4-10 [illegible] short [illegible] [illegible] Often 2.8, 2.1, 2.5, 2.6 [illegible] Some [illegible]

IV Ridge ant. of ① very slight tubercle raised.
Others all [illegible] to 3.8, 4.0 to shed. Like 559A
yellow line below St. ridge, [illegible] raised [illegible]
[illegible] [illegible] [illegible] yellow edges
[illegible] [illegible] in all lateral ridges, [illegible]
[illegible] [illegible] ② and 3 ant.

V. 4.2 to 5.0, 5.5 [illegible]. Elongated, rounded,
slightly notched at the sides, [illegible] about half as
broad as last, flat. Last stage [illegible] slightly
concave. S-t [illegible] retracted. ① ridge [illegible] ② prominent
[illegible] spaces fairly large, [illegible]; lateral ridge
[illegible], [illegible] spaces, not ⊥. [illegible]
[illegible] granular even, shining a little; dorsal
spaces [illegible] with large [illegible] center. All
bright yellow green, rather translucent [illegible],
yellow ① line [illegible] - band narrowed at [illegible]
spaces, very slender not reaching ends, a
yellow band along 3 ant., [illegible]
spines. [illegible] of (A) yellow, [illegible] with green [illegible]
St. line [illegible] at ends, a yellow bridge 7-9 just
[illegible] between 4, 7 and 9 containing a round
red spot in front of 8; line not [illegible]
[illegible] in granules small, rounded, [illegible]
[illegible] uniform all over, [illegible]
[illegible]. Each [illegible]
and radial [illegible] 4-6 minute [illegible]
[illegible] to give a [illegible] edge S.

Shed VI July 29 absolutely [illegible] clear [illegible],
[illegible]
4 [illegible] under microscope clearly [illegible]
[illegible], [illegible] never less than
5 [illegible] [illegible]
[illegible]
[illegible]

Shed Aug 2 [illegible]

[illegible]
Shed July 26 like 577 III; July 28 [illegible] St. line, very [illegible]; July 29 [illegible], [illegible] St. line

677A II [illegible] a [illegible]. Elongate, [illegible]

Date	L	St
July 19	1.7	1st
〃 21	1.9	〃
〃 26	1.9	3rd
〃 27	2.1	〃
〃 28	2.2	〃
〃 29	2.6	〃
〃 30	2.5	
〃 31	2.5	[illegible]
Aug 1	2.6	〃
〃 2	3.2	4th
〃 3	3.8	〃
〃 4	4.3	〃
〃 5	4.2	Shed
〃 6	〃	〃
〃 7	〃	〃
〃 8	5.0	5th
〃 9	5.4	〃
〃 10	[illegible]	〃
〃 11	5.7	〃
〃 12	5.9	[illegible]
〃 15	6.3	6th
〃 16	6.5	〃
〃 17	8.2	〃
〃 19	8.5	〃
(pupa	– [illegible])	

3 [illegible] before tail broadly [illegible]
[illegible] notched at the sides. [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] St. ridge [illegible]
tubercles with large [illegible]
tubercle bearing 2 short black setae,
[illegible], [illegible] 5, 7 [illegible]
[illegible] [illegible] [illegible]
from the others. Lateral ridge [illegible]
tubercles, [illegible] [illegible] with [illegible]
[illegible]. Both ridges [illegible]
nearly [illegible]
[illegible] [illegible] spines,
like [illegible] and lateral [illegible]
[illegible] [illegible] the [illegible]
[illegible] spaces, all [illegible]
[illegible] [illegible] by the [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] from front. [illegible]
[illegible]

(677) B ♀ Y-back in ash (R. coccinea) taken with

Date	Length	R	
Aug 24	1.2		cat
" 25	1.3		"
" 26	1.2		"
" 27	"		"
" 28	1.4		"
" 29	"		"
" 30	1.7		"
" 31	1.9		"
Sept 1	1.7		[illegible]
" 2	"		[illegible]
" 3	2.0		cat
" 4	2.4		"
" 6	2.4		[illegible]
" 7	"		"
" 8	2.5		[illegible]
" 9	2.6		cat
" 11	2.2		"

recording. Setae as in T-pallida, 3 2-2-1, 4 Y-2-1, 5-12 Y-1, 13 2. Y-1 pin short shaft, limbs subequal, spin slender, tapering, knotted-cleft on tip, all pale. Ellipt. tail segment triangular before, rounded behind, lifted in front. Spines broad. Cast skin, Skin armed in spiny, dorsal bulbous R at ① all pearly colored, tinged with yellowish green. Y-S not distinctly alternating, and, since little shed, [illegible] there is a square yellow patch. Ex. [illegible] July 27 Reaction to water. Life-spans very long. Lateral ridge from large elevated granule. – 669

Shed Aug 3 smooth, colorless, late rd dorsal yellow line in central eye.

Shed Aug 8 Red spot ⊙ 3rd yellow rd line

Reported [illegible]

(677 II) (R) rounded, lifted in center, (4) elongate. As in 555 B. Big ♂ [illegible], representing a different having a narrow lateral ridge along rd line, & in upper ½ last of. Rd line narrow, 4-13, [illegible] way; a broad yellow dorsal 7-8 centering on a square dark red spot produced a little behind a pearly ex line on each side. A distinct transverse yellow line in front, [illegible] and joining the rd line. (4) yellow & green central. Skin not at all shiny. Yellow line in [illegible] in front with salmon shown. [illegible] yellow [illegible] leaf. [illegible] line in [illegible] between [illegible] and a wider yellow line along lateral ridge and white on edge, obscure but truly showing the yellow color in 3 and among [illegible] 13. [illegible] all nearly [illegible] to the J. [illegible].